

Sun Virtual Desktop Infrastructure Software

Redefining user access

In today's fast-paced economy, organizations are restructuring datacenters in order to create greater flexibility and contain costs. With more employees and partners accessing business-critical applications from inside and outside the office, enterprises are looking for ways to make systems and services available to users anywhere at any time, as well as ease the desktop management burden. Sun™ Virtual Desktop Infrastructure Software and Sun servers combine to create a dynamic platform that brings virtualization to the desktop—and enable true user mobility through a server-centric model that simplifies desktop access and management.

Delivering rich applications and IT services to users regardless of location poses a host of challenges. In order to work effectively, users must be able to move from place to place without losing the functionality of traditional fixed asset environments. Access must be easy, consistent, highly available, and secure.

In addition, client devices must be patched and up to date to protect against the latest security attacks. Furthermore, companies must be able to demonstrate compliance with industry or government regulations and legislation and internal policies—a task that proves difficult to audit when applications

Highlights

- Take advantage of powerful Sun™ Virtual Desktop Infrastructure Software and Sun servers and create streamlined datacenter environments that provide any time, anywhere access to applications and services from any device
- Enable greater session mobility with a solution that lets users move from one system to another and simply login for continued access to work in progress
- Simplify application deployment and administration by virtualizing desktop access and reducing the number of systems required
- Centralize management and access to information and help maintain process integrity even as users move outside the enterprise infrastructure
- Reduce costs with eco-friendly Sun Ray virtual display clients and high-performance, energy efficient Sun SPARC® and x64 servers

Sun Virtual Desktop Infrastructure Software on VMware Infrastructure 3 and Sun x64 servers simplifies user access and management.

Supporting a vast and dynamic mobile workforce

Today, network-enabled mobility is essential to business success. More people work in a wide variety of places than ever before, from corporate buildings to remote job sites, and home offices. With vast numbers of users working on desktops, laptop computers, personal digital assistants (PDAs), and even intelligent cellular phones, companies are faced with a complex network of systems and devices that need to integrate with the enterprise infrastructure and gain access to business applications and services.

reside on individual computers and devices spread around the globe.

The desktop virtualization revolution IT organizations with a large and sprawling desktop client community struggle with complex and ineffective desktop management strategies. Traditionally, all applications run directly on a local desktop. Every machine must be modified when software installations or upgrades are required, making it difficult to keep track of the number, kind, and version of applications in use.

Just as server virtualization revolutionized how IT managers think about compute power and resource management in the datacenter, desktop virtualization is changing the office landscape. Desktop virtualization enables some or all of the applications—including the desktop environment—to be moved off individual desktops and centralized on dedicated application tier servers in the datacenter. As a result, organizations are better able to take advantage of client device independence, provide true mobility for workers, streamline management, and keep information secure.

Consolidate and simplify with Sun Virtual Desktop Infrastructure Software

Sun Virtual Desktop Infrastructure Software delivers applications and full desktop environments to clients using a server-based computing model.

Combining Sun Secure Global Desktop Software, Sun Ray Software, and the Sun Virtual Desktop Connector, Sun Virtual Desktop Infrastructure Software helps enable organizations to:

- Create and deploy systems that meet a wide range of business requirements
- Handle user and session mobility (hot-desking and hoteling)
- Extend the useful life of aging desktop PCs by decoupling applications from the client hardware
- Take advantage of a desktop service delivery model that overcomes the costs associated with aggressive obsolescence cycles

- Gain revenue opportunities by delivering virtualized services to multiple clients
- Streamline business operations
- Protect confidential information

Sun Secure Global Desktop Software

Sun Secure Global Desktop Software speeds the free flow of information across the enterprise through secure, universal, and portable access to applications, data, and services. Users can interact with collections of applications using familiar devices, and uniform services can be received whether working from a fixed office at the enterprise, or any location around the globe that is accessible to the Internet or telephone network.

Sun Secure Global Desktop Software offers:

- *Anytime, anywhere access from any device.* By dissolving the server, client, platform, network, and applications software boundaries, more services can be provided to users regardless of client device. Users are no longer constrained, and are better able to run any application on any device at any time. Organizations can publish most Windows, UNIX®, midrange, or mainframe applications to any network-attached client, including PCs, Macintosh computers, laptops, wireless devices, and more.

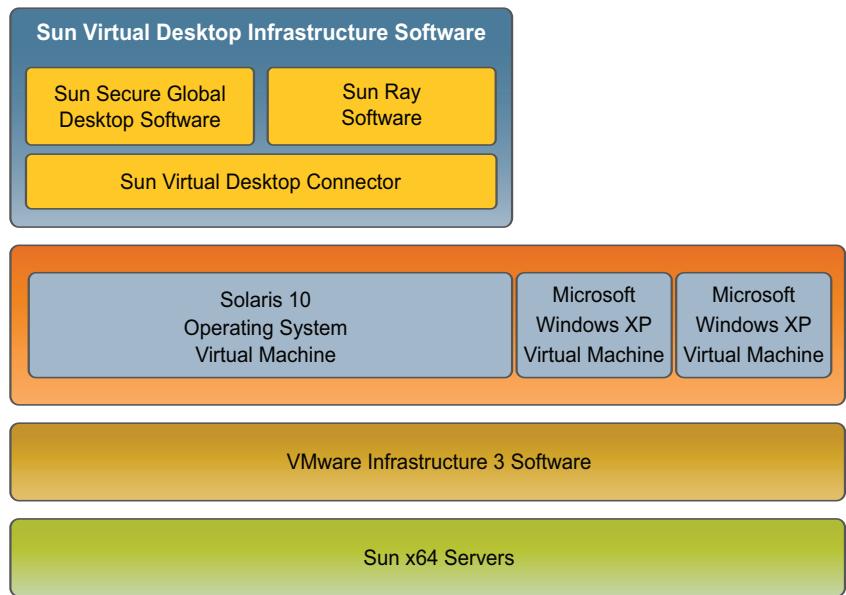


Figure 1. The Sun Virtual Desktop Infrastructure Software solution stack integrates with VMware Infrastructure 3 Software and takes advantage of powerful Sun x64 servers.

- *Simplified application deployment and administration.* Organizations only need to install and maintain a single instance of an application on the server. Each application is made available to all qualified users over the network, eliminating the need to install and maintain every application on every client platform.
- *Powerful, centralized management.* While users gain freedom in how, where, and when they access enterprise IT services, managers retain full control over who has what kind of access to specific resources and information. A wealth of data security features help maintain process integrity and reduce administrative overhead even as enterprise computing gains in flexibility.
- *Security that can be trusted.* Maintaining a secure environment is a race against hostile forces seeking to wreak havoc. The software offers state-of-the-art encryption and authentication technologies to help guard against intrusions, such as smart card and Secure Sockets Layer v3 support, Advanced Encryption Standard 256-bit encryption, X.509 public key server certificates, secure firewall traversing with SSL tunneling, proxy server support, and more.

Sun Ray Software

Sun Ray Software enables users to access applications and services from any location using Sun Ray compatible thin client devices. Since these ultra-thin clients do not contain any local processing or storage resources, these functions are performed centrally on servers. Such a lightweight approach offers several advantages:

- *Greater session mobility.* Because the user session executes on a server rather than the client device, users can migrate from one Sun Ray virtual display client to another and have the session follow their movement. The session instantly appears in the new location once the user is identified through a keyboard login or the insertion of a smart card. This hot-desking capability is possible whether a user moves to the next cubicle or checks in from a Sun Ray device on the other side of the world.
- *Reduced cost.* Sun Ray virtual display clients and similar devices tend to be obsolescence resistant, resulting in longer useful lifecycles than typical desktop systems. Without the processor, memory, graphics, and storage subsystems included in traditional thick clients, Sun Ray devices are inexpensive.

- *Inherent data security.* Since Sun Ray virtual display clients do not contain disk drives, data that is required for regulatory compliance archiving is stored on central storage and cannot be compromised in the event the device is stolen. In addition, copying data to external USB devices is possible only if enterprise data management policies permit.
- *Improved reliability.* With less complex designs, Sun Ray devices contain fewer components that are likely to fail. Sun Ray virtual display clients can be simply replaced if needed, without the need to reload software, recover files, and configure network settings and user preferences.

Sun Virtual Desktop Connector

As more enterprises consolidate onto fewer servers to manage datacenter complexity, virtual machine technology is playing a key role. To support these environments, Sun Virtual Desktop Infrastructure Software includes a brokering service that integrates with VMware Infrastructure 3 Software to deliver desktop environments running in virtual machines to users.

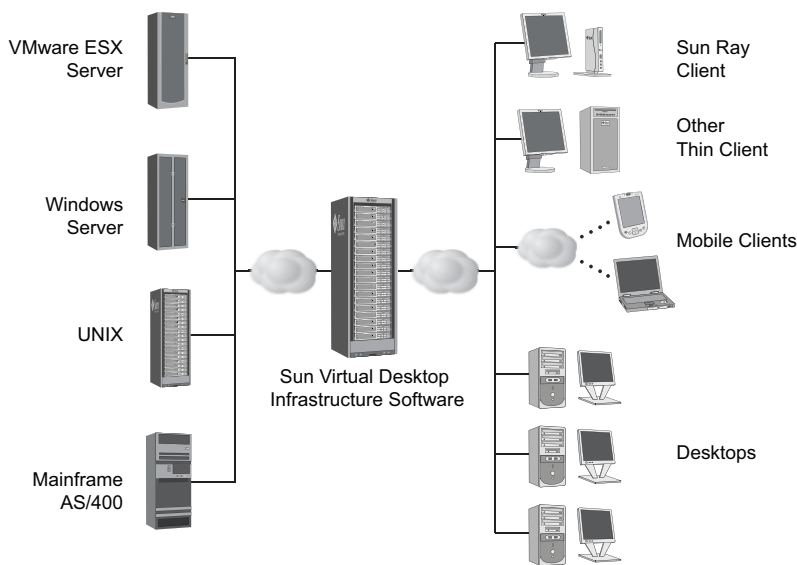


Figure 2. The Sun Virtual Desktop Infrastructure Software combines with Sun x64 servers to enable anytime, anywhere access to applications from any device.

Sun Virtual Desktop Connector Software brokers connections between other Sun Virtual Desktop Infrastructure Software components and VMware Infrastructure 3 Software. Easy to install and configure, the software eliminates guesswork by including pre-made scripts that enable client devices to access virtual desktops through Sun Secure Global Desktop Software or Sun Ray Software. Both dynamic and static assignment of desktops to users is supported. In addition, enterprises can leverage features in VMware Infrastructure 3 Software, such as VMware VMotion and VMware HA, for a dynamic desktop infrastructure that supports the live migration of virtual machine disks and fosters high availability.

Sun Virtual Desktop Infrastructure Software deployment architecture

Ease of use and security are paramount when users need to be able to access enterprise systems and applications from anywhere at any time. Sun Virtual Desktop Infrastructure Software uses a three-tiered approach that centralizes and facilitates access to services and applications to bona fide users while denying entry to those that are unknown or have insufficient privileges (Figure 2).

The application tier consists of one or more servers dedicated to hosting applications and services to users, and is typically housed in a datacenter or other secure environment. Virtually any server platform is supported, including those running the Solaris™ Operating System (OS), Linux, Windows, midrange, or mainframe operating environments.

To support simultaneous access to multiple applications on a client, the application tier can consist of a heterogeneous collection of servers linked to clients through a universal access layer.

Access tier servers run the Sun Virtual Desktop Infrastructure Software and sit between the application tier servers and clients in order to manage user access to applications and services. These servers enable desktop virtualization by decoupling client devices that deliver application-generated video, audio, and user interfaces from the actual provisioning and processing of application software. A variety of intelligent thick clients are supported—PCs, laptops, UNIX workstations, intelligent terminals, mobile devices, and more—with thousands of concurrent users. Access tier servers can be scalable Sun servers with UltraSPARC®, AMD Opteron™, or Intel® Xeon® processors running the Solaris OS or enterprise-class Linux implementations.

The client tier includes devices used to access services that are connected to the server via wired or wireless LAN or WAN over a modem, cable modem, digital subscriber line (DSL), WiFi, or other communications channel. Users can access applications and services via a standard Java™ technology-enabled Web browser, such as Firefox, Mozilla, Safari, Microsoft Internet Explorer, or through dedicated client software.

Sun servers — a proven foundation for server and desktop virtualization

Server consolidation and virtualization technologies are key allies in the struggle to contain costs. To advance this effort, Sun continues to make significant investments in server, processor, and operating system technology. With a comprehensive line of powerful systems that scale to hundreds of processors and more than half a terabyte of memory, Sun SPARC processor-based and x64 servers provide the outstanding scalability, flexibility, and performance needed to support datacenter virtualization efforts.

Sun's family of SPARC and x64 servers scale from single processor blade systems optimized for price/performance, to compute-dense multiprocessor servers. Energy efficiency and reliability, availability, and serviceability (RAS) features combine with breakthrough compute, memory, storage, and I/O density to create high-performance platforms that can handle the demands of sophisticated applications and thousands of concurrent

users. These servers also support multiple, diverse operating systems—the Solaris OS, Linux, Windows, and VMware—to enable many applications and services to run on a single server and provide virtualized desktop access to users. As a result, Sun servers are the right choice for application and access tier servers in virtualized environments.

For example, Sun Fire™ X4150 and Sun Fire X4450 servers are ideal for Web infrastructure and consolidation and virtualization efforts. These systems feature high performance and unprecedented density in energy-efficient and compact 1U and 2U form factors. With capabilities that complement the rest of the Sun server product line, the Sun Fire X4150 and Sun Fire X4450 servers raise the bar for 32- and 64-bit virtualized computing.

- *Best-in-class performance.* Sun Fire X4150 and Sun Fire X4450 servers feature dual- and quad-core Intel Xeon 5000 and dual-, quad- and six-core Intel Xeon 7000 Sequence processors with large on-die caches and high clock speeds for impressive performance in a compact unit.
- *Remarkable density.* When populated in a 40 rack unit enclosure, Sun Fire X4150 and Sun Fire X4450 servers facilitate a single rack with up to 480 cores (up to 320 cores for X4150), 1280 DIMM slots, 120 PCI Express slots, and up to 1 TB of storage—densities needed to achieve consolidation and virtualization efficiencies.

- *Massive scalability.* Sun Fire X4150 and Sun Fire X4450 servers are designed to scale up, scale out, and scale within the box. Up to 24 cores per system support growing workloads and large memory capacities, internal storage, and high-bandwidth interconnects can handle high-volume network communication. The ability to scale resources within the system and run the Solaris OS and VMware make these servers ideal systems to host virtualization technologies and consolidate multiple applications within a single extensible platform.
- *Simplified system management.* To support out-of-band management, Sun Fire X4150 and Sun Fire X4450 servers incorporate a Service Processor that features robust Integrated Lights-Out Manager applications. This built-in hardware-based management functionality enables administrators to monitor and manage systems remotely—a key capability as operating systems, desktop environments, and applications are hosted inside datacenters.

Sun leads in virtualization

IT departments facing increasing pressure to deliver applications and services to a mobile workforce continue to turn to Sun for solutions that work. With over 20 years of experience in network computing solutions, Sun provides the entire stack needed to consolidate and virtualize the datacenter—servers for hosting and accessing applications, multiple operating systems and virtualization technologies, and client systems and devices.

Incorporating the latest hardware and software trends, Sun solutions facilitate the adoption of leading edge, high-bandwidth network infrastructures that make it possible to virtualize and streamline datacenter operations and protect the bottom line.



Sun Microsystems, Inc. 4150 Network Circle, Santa Clara, CA 95054 USA Phone 1-650-960-1300 or 1-800-555-9SUN Web sun.com

