

Choosing the Right Server Solution to Virtualize Apple Xserves

Published June 30, 2008

Overview

As businesses and organizations grow in size and complexity, the demands placed on IT infrastructures and staff multiply exponentially. End users require access to all of the necessary software, applications and productivity tools that they need to get their jobs done. Developers and technical support staff need to develop, test and support applications in any OS that their companies utilize. However, IT administrators and managers are also under constant pressure to reduce hardware acquisition and support costs.

So many demands to meet so many requirements for so many different groups within an organization lead to increasing pressure to consider innovative solutions to meet the needs and solve the problems. IT-related business issues that are often effectively addressed by innovative solutions such as virtualization technology include:

- New and Underutilized Existing Apple Xserves
 - Apple Xserves have traditionally remained non-virtualized with single application/OS instance despite low utilization and non-seamless integration into existing Windows and Linux IT infrastructures.
- Cross-platform Development on the Mac Platform
 - Mac OS X is the fastest growing OS for which companies want to develop solutions.
 - Developers and Support Technicians increasingly need to support Mac OS X as well as an increasing number of Windows and Linux distributions.
- Standardization of Xserve Hardware Platform
 - IT shops with Xserve hardware need to run Windows, Linux and FreeBSD but are forced to do so on separate physical machines.
 - IT shops seek increased efficiency and more effective administration through consolidation, migration and workload management.
- Managing Mac Server Deployments
 - As the number of Mac clients increases, organizations must increase their own numbers of Mac servers to support users.
 - Traditional OS deployment (non-virtualized one server-one OS) is expensive and time-consuming to deploy, manage and maintain.
- Business Continuity
 - Today's business continuity requires a 1:1 application/hardware ratio.
 - One server-one OS instance does not allow for cross-platform business continuity and increased efficiency.

Server Virtualization as the Solution

Virtualization solutions have been hailed as key technologies for IT organizations to effectively control the cost of their IT infrastructures and simplify the management of their IT assets. By implementing virtualization, organizations of all sizes have been able to:

- Decrease Sprawl
 - Consolidate computing hardware, streamline the IT Infrastructure and reduce the number of OS instances
- Reduce Costs Dramatically
 - Decrease management, hardware, infrastructure, power and software expenses
- Leverage Existing Assets
 - Take full advantage of hardware, power capacity, data center floor space, routers, SAN and IT staff
- Improve Flexibility of IT Infrastructure
 - Dynamic Resource Allocation to meet application and business unit needs
- Enhance Manageability and Automation
 - Simplified, faster and more reliable provisioning and ongoing management
- Increase Availability at Lower Cost
 - Faster backup and recovery
 - Easier high availability configuration
 - Eliminate downtime for updates

Criteria to Consider in Server Virtualization for Mac Platform

There is a plethora of criteria that are essential for the effectiveness and performance of a physical server. To fully maximize the highest levels of performance offered by the native server hardware, some of the key criteria that must be taken into account when considering the server virtualization solution include.

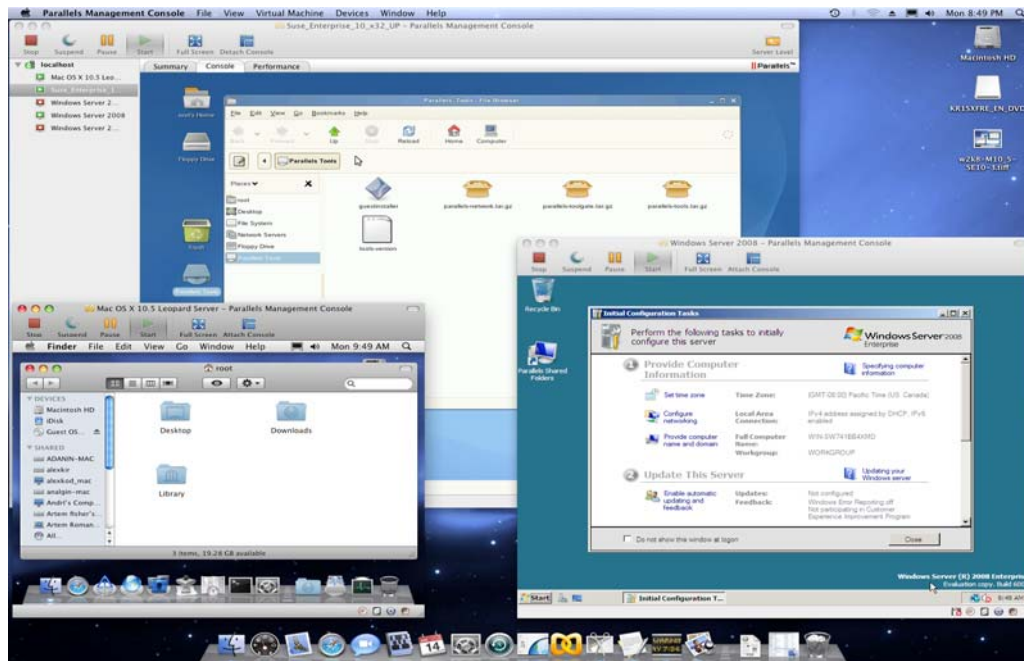
- Performance
 - The type of virtualization technology
 - How to take full advantage of server subsystem hardware, including multiple processors (SMP), hardware-acceleration technologies (e.g. Intel VT-x) and memory.
- Management
 - The extensiveness and depth of manageability of the virtual infrastructure
 - The level of automation included to simplify the work that must be accomplished
- Ease of Use
 - The seamlessness of the user experience
 - The learning curve required to get new users up to speed
- Breadth of Support
 - The range of supported OSes, applications and devices
- Extensibility
 - How well the server virtualization technology can be integrated into the other components of the IT infrastructure, including applications built in-house or by third-party vendors
- Total Cost of Ownership
 - Costs involved beyond the initial cost to acquire the technology, including management tool add-ons, user education/training and maintenance, including support and software upgrades

Parallels Server for Mac

Parallels Server for Mac is the first and only server virtualization solution for the Mac. Parallels Server for Mac is a full-scale server virtualization that allows multiple server OSes and resident corporate applications to run in a production server environment. Powerful and easy to use, Parallels Server for Mac provides the best value for cost-conscious organizations seeking to standardize and optimize their IT infrastructures.

This innovative server virtualization solution enables businesses of all sizes to:

- Run virtualized server workloads such as enterprise email, databases and web applications, including Microsoft Exchange and Oracle Database, across different platforms on Apple Xserves.
- Create and automate development and testing with cost-effective, flexible, customizable and easy-to-manage virtual sandboxed environments.
- Standardize server platforms on Apple Xserve hardware and incorporate Windows, Linux, FreeBSD and more into VMs.
- Effectively consolidate servers and optimize the use of server resources and IT infrastructure investments.
- Streamline cross-platform server deployment, maintenance, management, migration and backup for increased business continuity.



Parallels Server for Mac with multiple server workloads, including Windows Server 2008, Mac OS X Leopard Server and SUSE Linux Enterprise Server, each running in a VM on top of the Mac OS X Leopard Server platform

Parallels Server for Mac: The Right Solution for Mac Server Virtualization

Parallels Server for Mac is a server virtualization solution designed specifically to virtualize multiple server OSes and multi-user corporate applications such as email/messaging and databases in virtual machines (VMs) on top of physical Mac servers to realize increased management efficiency and cost-effectiveness. Desktop virtualization solutions such as Parallels Desktop for Mac and VMware Fusion are designed primarily for client/personal computing applications for business productivity, personal finance tools, learning, development and gaming. Simply put, desktop virtualization solutions are designed to virtualize a few client OSes and applications in VMs on top of Mac physical laptops and desktops while Parallels Server for Mac is designed specifically for the heavy workloads required to keep an organization running. For a feature comparison of desktop virtualization solutions, go to www.parallels.com/feature-comparison.

	Server Virtualization	Desktop Virtualization	What to Consider
Type	Virtualization software solution for server workloads (e.g. Heavy workloads such as corporate email or database applications, including Microsoft Exchange, SQL Server and Oracle)	Virtualization software solution for client/personal computing applications (e.g. Lighter workloads such as Microsoft Office, Quicken, Microsoft Visual Basic and Netflix)	The type of product and dependent applications (corporate applications vs. personal productivity applications) that will be running
Function	Designed to virtualize multiple server OSes and run leading server applications such as Microsoft Exchange, Oracle Database, Microsoft SharePoint and more in VMs on top of Apple Xserves	Designed to virtualize a few client OSes and applications in VMs on top of physical Mac laptops and desktops	The way the product functions and what it is designed to do

Parallels Server for Mac: Virtualization Features for Server Workloads

Parallels Server for Mac is optimized to effectively take full advantage of the Apple Xserve server subsystem's resources and is uniquely designed to handle the heaviest workloads and effectively address key requirements for IT organizations of any size. For a complete list of product features, go to www.parallels.com/products/server/mac.

	Features	Benefits
Performance	<ul style="list-style-type: none"> • Hardware-assisted acceleration with Intel VT-x support • Multiple CPU (up to 4-way SMP) and multi-core CPU support • 32- and 64-bit support ensures that OSes/applications take full advantage of the server environment • ACPI support in VMs 	<p>Intel VT-x support enables virtualization solutions to run at full speed.</p> <p>SMP support provides the ability to dedicate multiple processors in a server to an OS or application in a VM. This is key, especially if the OS/application is multi-threaded.</p> <p>ACPI support in VMs ensures that the guest OS directly controls the operations of the server hardware.</p>
Management	<ul style="list-style-type: none"> • Integrated management toolset to deploy, manage and administer servers and VMs • Streamlined management of multiple servers and VMs, both local and remote • Access for multiple administrators • Extend management with Command Line Interface and scripting language support (Python) to automate administrative tasks such as create new VMs and back up VMs 	<p>The ability to manage multiple virtualized servers and VMs, locally and remotely, from a single pane of glass is critical for IT professionals and is a key feature unavailable in desktop virtualization solutions. The ability to quickly set up servers and applications is facilitated with Templates and Clones.</p> <p>CLI enables IT users to run scripts to automate server administrative tasks, a key server application requirement. Desktop virtualization solutions do not offer this ability.</p>
Ease of Use	<ul style="list-style-type: none"> • An intuitive user interface that provides a seamless user experience • Multiple VM provisioning and deployment with Templates and Clones • Ability to run Parallels Server for Mac application as a service • VM auto-boot setup option enables IT administrators to have better control of VM availability 	<p>Ease of use, fast deployment and effective management ensure improved IT staff productivity and efficiency.</p> <p>The ability to run Parallels Server for Mac as a service ensures that its VMs will be automatically started when the server boots up. This is critical for IT users who need to run their server applications in a headless operation mode and is essential for network applications such as web servers, mail servers and any application that must run at all times.</p>
Breadth of Support	<ul style="list-style-type: none"> • Only server solution to support the virtualization of Mac OS X Leopard Server • Supports up to 50 different combinations of guest OSes in 32- and 64-bit environments • Hardware ready with support for a wide range of virtual devices 	<p>Parallels Server for Mac ensures the virtualization of server applications with broad flexibility for multi-platform environments.</p> <p>The breadth of supported environments makes the Mac server platform viable for integration into an existing enterprise IT infrastructure.</p>
Extensibility	<ul style="list-style-type: none"> • Open Application Programming Interfaces (APIs) and Software Development Kit (SDK) 	<p>Open API and SDK provide for effective Parallels Server for Mac integration with third-party and/or customized in-house applications.</p>
Total Cost of Ownership	<ul style="list-style-type: none"> • One edition – One price • Fully functional and comprehensive • Is shipped with the Parallels Maintenance 	<p>Get the software license and management toolset in a single package. The Maintenance Program protects your IT investment with world-class support and free upgrades to future versions.</p>

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Summary

Parallels Server for Mac is the only server virtualization software solution for the Mac capable of handling server workloads such as corporate email and database applications. To fully leverage the client-server computing resources of Xserve, Parallels Server for Mac is shipped with an effective management console for remote administration of multiple servers and virtual machines with server applications. To help protect your IT investment and address the increasing pains of your growing IT infrastructure, Parallels Server for Mac is also shipped with the Parallels Enterprise Maintenance Program, which provides business-class support and ensures software upgrades to upcoming versions of Parallels Server for Mac that will provide advanced and integrated capabilities such as live migration for uninterrupted services.

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