

Performance, Control, and Security: The Benefits of Verio Virtual Private Servers (VPS)

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Realize many of the advantages of a dedicated server — with a lower price tag.

Verio Virtual Private Server (VPS)

Verio’s commitment to open-source software dates back to the company’s inception. Over a decade ago, we pioneered virtual private server technology and introduced the solution based on the FreeBSD® operating system. Today we offer a variety of virtual private server (VPS) and managed private server (MPS) plans to deliver a range of high-performance, low-maintenance Web hosting services.

In this paper, we’ll explain the features and benefits of the Verio VPS solution, which allows companies to achieve high levels of performance, control, and security with an affordably priced hosting plan. The paper covers both FreeBSD-based and Linux-based VPS hosting solutions and the benefits they deliver for a wide range of business needs and applications.

COMMON SERVER APPLICATIONS

Virtual private servers are commonly used for a great variety of applications:

- Host an e-commerce Website
- Support a corporate intranet
- Build a custom development environment
- Provide Web-based calendaring
- Provide multimedia applications
- Host an online game site
- Manage an email system
- Create a customer support tracking system
- Back up important data
- Host multiple Websites

A flexible solution for addressing many challenges

Businesses rely on outsourced hosting for a variety of reasons:

- Small businesses have little or no IT staff available for server management.
- Web designers, developers, and systems integrators often have limited time for learning new languages and tools.
- Hosting service providers (HSPs) and VARs demand the highest levels of reliability and support.
- ASPs and software vendors require the most secure, up-to-date, and powerful applications.

Verio VPS delivers a private,

protected “space” that operates as an independent server. The VPS behaves like a stand-alone physical server so it offers excellent security, performance, and flexibility.

Because of operating system-level server virtualization, secure virtual environments can coexist on a single physical server, while each account operates in isolation.

A couple of alternative approaches to operating system-level server virtualization are available, but to employ each of these calls for making some form of compromise.

- **Hardware emulation** — Also referred to as “virtual machine technology,” hardware emulation can run almost any operating system without extensive modification, but

the solution offers little scalability and therefore fails to provide an easy growth path. Management of these types of systems tends to be complex.

- **Paravirtualization** — This server technology allows clients to run multiple modified operating systems. A virtual machine monitor manages the server resources, which are shared. This approach will deliver superior performance compared to hardware emulation, but because operating systems must be modified, resource allocation is static, meaning scalability is limited.

Verio VPS delivers the flexibility required to achieve the control, performance, security, and reliability your business demands.

Run the operating system that works for you

Verio VPS solutions offer both Linux® and FreeBSD options.

Linux® VPS

Linux now garners a significant share of the OS market, and its adoption rate continues to escalate.

- Developed and released under the GNU General Public License, the source code for Linux is available to everyone at no cost.
- A Unix®-like OS, Linux is highly functional, adaptable, and robust. Developers can easily extend functionality with e-commerce, databases, and a wide variety of applications.
- The Linux developer community is very large, so there are a great many Linux applications now available. Governments around the world are now endorsing Linux as the OS of choice.

Verio Linux VPS features Red Hat® Enterprise Linux (RHEL), a widely used OS based on open standards. The RHEL operating system provides support for a GNU compiler collection (GCC) and Red Hat Package Manager (RPM). Those familiar with open-source software applications are likely to find it easy to perform basic essential configuration, administration, and trouble-shooting tasks.

FreeBSD® VPS

Businesses that favor FreeBSD-based applications have the option to select Verio FreeBSD VPS.

- As the name suggests, the FreeBSD operating system is free of charge and comes with full source code.
- FreeBSD offers advanced networking, performance, security, and compatibility features, many of which are absent from commercial offerings.
- FreeBSD is a very economical alternative to commercial Unix workstations. It is easy to install and well suited for a great number of server applications.

FreeBSD Unix is derived from the Berkeley Software Distribution (BSD) of Unix and distributed under the terms of the FreeBSD Foundation. FreeBSD VPS utilizes:

- FreeBSD Unix, a widely implemented corporate Unix standard
- FreeBSD version 6.0
- The Unix File System 2

Verio VPS: More performance, less management

Verio virtualization software partitions the resources of a physical server such that each user, or VPS account, realizes performance benefits that could otherwise be realized only with an actual dedicated server.

In addition, the Verio solution helps customers avoid many of the management hassles commonly associated with dedicated hardware resources. In short, Verio VPS delivers a unique combination of performance, control, security, and manageability.

FairShare technology: The high-performance approach to resource management

Verio FairShare technology manages how each VPS uses system resources such as processing power,

memory, and network resources. Each is allocated its “fair share” and insulated from others on the same server, thereby protecting the individual account from the misbehavior of others. A fault in one application running within a VPS account does not affect any applications running on other VPS accounts on the same physical server.

Each VPS is allocated its own disk space and processes, which cannot be abused by a “neighboring” account. Usage thresholds are put in place and enforced. As a result, your Websites and applications perform consistently and reliably.

A brief technical overview of the virtualization features

Verio VPS is built on a software architecture of operating system-level virtualization, which differs from the traditional virtual machine

technology in that it always runs the same OS kernel as the host system. This approach enables running VPS accounts with near-zero overhead, so you realize an order of magnitude higher efficiency and manageability.

High application performance and stability

Verio VPS is an enterprise-class platform, which delivers open source technology and stability. The platform’s use of FairShare technology balances server loads to make Verio VPS supremely reliable.

The solution supports a host of mission-critical applications and tools. A “skel” package of core services is preconfigured with each account, including:

- Hypertext Transfer Protocol (HTTP) and HTTPS
- Simple Mail Transfer Protocol

Technical highlights of Verio VPS include:

- From an “applications” point of view, each VPS is an independent system by virtue of a virtualization layer in the kernel of the host OS, which is installed on a hardware node.
- VPS systems behave like a dedicated system with standard startup scripts.
- Software runs inside a VPS without operating system-level, virtualization-specific modifications or adjustment.
- Users can change any configuration file and install additional software.
- Each VPS has its own IP address, so the network virtualization layer isolates each VPS account, making traffic “snooping” impossible.
- Advanced routing features are supported.

DEFAULT APPLICATIONS

Many applications come installed by default with your Verio VPS account, including:

- Apache modules
- Autoresponder support
- FTP server
- GNU compiler collection
- Internet message access protocol (IMAP)
- OpenSSH
- Perl and mod_perl
- POP3 server
- Ruby
- Sendmail SMTP server
- OpenSSL
- SASL authentication
- Web server

- (SMTP), Post Office Protocol (POP), and Internet Message Access Protocol (IMAP) for email
- File Transfer Protocol (FTP)
- Shell access tools: Telnet (FreeBSD only), Secure Shell (SSH), and cron

Core services are managed by Verio, but you can configure them to satisfy your specific needs and then rely on Verio for support, if needed. A new VPS comes configured as a Web and email server. The account begins as a copy-on-write (COW) image of a Verio-tested, basic installation. As system administrators update and customize the account, the account continues to use central files maintained by Verio. Verio system administrators continuously manage updates to core services.

Complete flexibility and management control

Verio VPS assures root access for total administrative control. As a VPS customer, you can install the software you require and configure the server to meet your needs. The system's flexibility allows you to:

- Configure and customize your server with friendly Web-based controls.

- Install, customize, and run almost any custom or off-the-shelf application.
- Host multiple sites with separated domains.
- Create and run unlimited email accounts.

To help administrators make quick work of application installations, Verio VPS includes a library of custom installation scripts, or vinstall utilities:

- SpamAssassin Spam Filtering
- Apache Tomcat
- ClamAV Virus Scanning
- CPX: Control Panel
- MySQL
- PHP Hypertext Processor

Extra security, extra peace of mind

The virtualization approach employed by Verio makes the VPS inherently secure. A server sandbox creates a fully isolated environment where each VPS has its own complete directory structure, its own virtual file system, and its own set of independent applications. Security policy limits one VPS from interfering with, or even seeing, another VPS.

Verio's commitment to server security also includes:

- Round-the-clock monitoring and intrusion detection at Verio's global Tier-1 data center
- Triple data backups for data integrity
- Operating systems and hardware that are continuously tuned

- Verio technical experts who manage updates and patches
- World-class technical support 24/7/365

Multiple plans to suit your price-performance needs

Verio offers three VPS plans for each OS, starting at just \$89.95

per month. All three plans offer a common set of features, including FairShare technology, but some key performance factors differ among tiers, such as disk space, total processes, total open files, CPU priority, memory, and burstable memory. The table provided below specifies resource allocation details and other key features.

VPS Features	FreeBSD			Linux		
	Basic	1000	2000	Basic	Pro	Pro Plus
Setup	Free	Free	Free	Free	Free	Free
Per-Month Charge	\$89.95	\$149.95	\$279.95	\$89.95	\$149.95	\$279.95
Bandwidth Transfer	No charge	No charge	No charge	No charge	No charge	No charge
Disk Space	10 GB	20 GB	40 GB	10 GB	20 GB	40 GB
Resource Rating (CPU, Memory, etc.)	Good	Better	Best	Good	Better	Best
Domain Names (Recommendations)	No limit	No limit	No limit	No limit	No limit	No limit
FreeBSD 6.x Operating System	•	•	•			
Red Hat Enterprise Linux (RHEL) OS				•	•	•
Intel Hardware	•	•	•	•	•	•
SSH Shell Access	•	•	•	•	•	•
Telnet	•	•	•			
FTP Access	•	•	•	•	•	•
iManager Control Panel	•	•	•			
CPX Control Panel	•	•	•	•	•	•
Average Number of Subhosts	15	30	60	15	30	60
Average Number of Email Users	50	100	200	50	100	200

Conclusion:

Verio VPS delivers a comprehensive solution.

Verio VPS is designed to satisfy your business and technology issues. The turnkey solution minimizes the time and resources you need to allocate to server management, allowing you to remain focused on pressing business issues.

The VPS solution deliver the benefits of open source technology supporting thousands of applications and development tools, while delivering world-class stability. In addition to the optimum combination of performance, control and security, Verio provides world-class support you can count on.

Verio: a smart choice.

Verio focuses solely on turning on the power of the Internet — every minute of every day — all over the globe. We build solutions with unparalleled scalability

to suit the needs of companies large and small. At the core of our company is a Tier-1 global IP network designed exclusively for Internet data transport. And we keep you at the forefront of Internet technology by continually upgrading our network. In 2000, Verio joined forces with NTT Communications, the world's largest telecommunications company. Today, we are a strong, stable IP leader and the smart choice if you demand a business partner with the resources needed to help grow your business.

The Verio 360° Managed Servers product family delivers professional server management, proactive security and OS updates, and enterprise-class hardware. Composed of the Verio 360° Managed Private Server and Verio 360° Virtual Private Server plans, 360° Managed Servers surround you with specialized service and support, minimizing your time and cost requirements and freeing you to concentrate on your customers.