Introduction to the Virtual Private Server

The Virtual Private Server system is a unique technology that enables companies to create their own Internet presence as if they had their own dedicated server. The Virtual Private Server system is more than just a hosting solution. It is a complete Internet server solution, giving each end user Web, FTP, e-mail, and command-line UNIX capabilities. Having a Virtual Private Server system is like having your own dedicated UNIX server.

How the System Works

Virtual server technology partitions a single physical machine into multiple virtual servers. This enables Verio, Inc. to distribute the cost of hardware, software, system maintenance, and bandwidth without losing the power of a dedicated solution.

The Virtual Private Server system uses the following:

- Up-to-date hardware components
- Fast network connectivity
- Innovative software
- Remote administration
- Security solutions

The Virtual Private Server vs. Virtual Hosting

Two types of shared hosting solutions are available: virtual hosting and Virtual Private Server. Though the terms seem similar, the underlying functionality of the two solutions is very different. Your Internet site is likely an integral part of your business, so understanding the differences between virtual hosting and Virtual Private Server affects your hosting decision, a decision that can be as important as choosing what content you place on your site.

Web hosting solutions consist of:

- Hardware (CPU, memory, disk drives, etc.)
- Software (the web, FTP, and POP servers; the e-mail gateway; and any third-party applications such as CGI scripts)
- Managed services
- Maintenance
- Backups

In a virtual hosting environment, the following weaknesses are apparent:

- Hardware and software are configured and customized by site administrative users, leaving the user with no control over how the Internet services behave.
- Each physical server has a single set of shared software applications, leaving the user "sub-letting" software that is controlled and maintained by someone else.

The Virtual Private Server

In a Virtual Private Server environment, the following strengths become obvious:

- Only the hardware is controlled by site administrative users, leaving the software autonomous.
- The accounts are backed up nightly to have recent files available for restoration.
- Software is controlled by the client, enabling the client full control over core Internet services.
- Software is maintained by site administrative users with recent copies of software as they are developed which are backward compatible. If you choose, you can install your own software and update as frequently as you like as well.
- A Virtual Private Server is isolated from the software of a physical server. This provides a sandbox environment preventing other accounts from accessing each other. This also allows for Secure Shell and Telnet capability.
- The Virtual Private Server is compatible with third party software that your company may need, enabling you to install these programs using either the FreeBSD ports system or by installing it yourself.

Configuration at the client level empowers the client to use a Virtual Private Server just as he or she would use a dedicated server. The table below compares the capabilities of virtual hosting with the Verio, Inc. Virtual Private Server system.

Comparing the Verio, Inc. Virtual Private Server System to Virtual Hosting		
Server Items	**Virtual Private Server System**	**Virtual Hosting**
Control of your own server environment	yes	no
Individual Web server (HTTP)	yes	no
Individual FTP server	yes	no
Individual POP server	yes	no
Individual IMAP server	yes	no
Individual SMTP gateway	yes	no
"Virtual Root" access	yes	no
Complete Telnet access	yes	maybe
Access to your web server configuration files	yes	no
Full CGI-BIN access	yes	maybe
Complete log files	yes	maybe
Access to your password and aliases file and sendmail.cf	yes	no

Core Internet Services

The core Verio, Inc. Virtual Private Server system services include the following services (or applications):

- HTTP (Web)
- FTP (file transfer)
- POP (e-mail)
- IMAP (e-mail)
- SMTP (e-mail)
- Shell access

Each of the services above is linked to your own domain name. Core services are complemented with the following utilities:

- iManager
- Microsoft® FrontPage® server extensions
- CGI scripts (customized for Verio, Inc.'s clients)

The Virtual Private Server environment also supports popular third-party applications sometimes called "contributed" programs.

Your Virtual Private Server comes with SSL. See page 145 for more information. With SSL encryption, your customers feel confident sending you their credit card information online because they are ensured of a secure transaction. Many other extensions, CGI scripts, Java applets, and popular third-party applications are also available.

Technical Details of the Virtual Private Server

Each physical server machine is partitioned into multiple Virtual Private Servers, and each Virtual Private Server has the following:

- IP address
- Domain name
- Web server (complete log and configuration files)
- FTP server
- POP server
- SMTP gateway

The Virtual Private Server is an isolated server environment that strongly resembles a dedicated UNIX machine. Each Virtual Private Server has a dedicated IP address, a hostname, resource allocations (disk space, memory, CPU share, processes, network, etc.), and a file system. Special tools provide a full UNIX file system inside your Virtual Private Server without significantly affecting your disk space.

Basically, the system works like this: Instead of copying the entire file system to your disk space, we have made transparent virtual links to the /skel directory, thereby conserving a large amount of disk space for you.

When you look inside the /skel directory, what appear to be directories are actually virtual links to them. If you modify any file or directory in /skel, the transparent link is replaced with a regular file that is written to your disk and counts against your disk space allocation.

Technical Details of the Virtual Private Server (continued)

On the Virtual Private Server, the following directories are displayed just as they would be on a dedicated UNIX server:

- /backup - Nightly backups (read-only)
- /dev - The device nodes for FreeBSD
- /home - The default user directory
- /root - Root's home directory
- /tmp - Temporary storage of files the are in use or recently used
- /www - Symbolic link to /usr/local/apache
- /bin - Contains system commands
- /etc - Server configuration files
- /ports - Collection of third party applications (read-only)
- /sbin - System utilities
- /usr - System files and directories that can be shared with other users
- /compat - Linux compatibility files
- /ftp - FTP directory
- /proc - Active system processes, listed by number (read-only)
- /skel - Default "skeleton" files (core system binaries) for a pristine server (read-only)
- /var - File system for log files and other data that changes frequently

The /etc directory contains the master.passwd, aliases, and /mail directory. These are important files that store vital data whenever you:

- Add multiple POP accounts
- Add e-mail aliases
- Configure e-mail autoreplies
- Block spam for your e-mail users
- Control private and public FTP access to your server

Hosting Your Website

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