

# Virtual Private Server Documentation

Serventus Virtual Private Servers VPS I, VPS II, VPS III



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## VPS Central Processing Unit

## Intel® Core™ i7



With faster, intelligent, multi-core technology that applies processing power where it's needed most, new Intel® Core™ i7 processors deliver an incredible breakthrough in PC performance. They are the best server processor family on the planet.

You'll multitask applications faster and unleash incredible digital media creation. And you'll experience maximum performance for everything you do, thanks to the combination of Intel® Turbo Boost technology and Intel® Hyper-Threading technology (Intel® HT technology), which maximizes performance to match your workload.

Intel Core i7 processors deliver an incredible breakthrough in quad-core performance and feature the latest innovations in processor technologies:

**Intel® Turbo Boost technology** maximizes speed for demanding applications, dynamically accelerating performance to match your workload—more performance when you need it the most.

**Intel® Hyper-Threading technology** enables highly threaded applications to get more work done in parallel. With 8 threads available to the operating system, multi-tasking becomes even easier.

**Intel® Smart Cache** provides a higher-performance, more efficient cache subsystem. Optimized for industry leading multi-threaded games.

**Intel® QuickPath Interconnect** is designed for increased bandwidth and low latency. It can achieve data transfer speeds as high as 25.6 GB/sec with the Extreme Edition processor.

**Integrated memory controller** enables three channels of DDR3 1066 MHz memory, resulting in up to 25.6 GB/sec memory bandwidth. This memory controller's lower latency and higher memory bandwidth delivers amazing performance for data-intensive applications.

**Intel® HD Boost** significantly improves a broad range of multimedia and compute-intensive applications. The 128-bit SSE instructions are issued at a throughput rate of one per clock cycle, allowing a new level of processing efficiency with SSE4 optimized applications.

## VPS Random Access Memory

## DDR3-1333 ECC

**DDR3 SDRAM** (Double Data Rate Three Synchronous Dynamic Random Access Memory) is the third generation of DDR SDRAM.

DDR3 SDRAM improves on DDR2 SDRAM in several significant ways:

- \* Higher bandwidth due to increased clock rate
- \* Reduced power consumption due to 90nm fabrication technology
- \* Pre-fetch buffer is doubled to 8 bits to further increase performance

The voltage of DDR3 SDRAM DIMM's was lowered from 1.8V to 1.5V. This reduces power consumption and heat generation, as well as enabling more dense memory

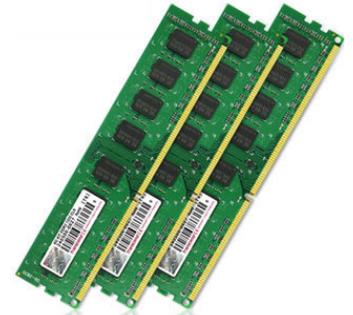
**ECC stands for "Error Correction Codes"** and is a method used to detect and correct errors introduced during storage or transmission of data. Certain kinds of RAM chips inside a computer implement this technique to correct data errors and are known as ECC Memory.

ECC Memory chips are predominantly used in servers rather than in client computers. Memory errors are proportional to the amount of RAM in a computer as well as the duration of operation. Since servers typically contain several Gigabytes of RAM and are in operation 24 hours a day, the likelihood of errors cropping up in their memory chips is comparatively high and hence they require ECC Memory.

Memory errors are of two types, namely hard and soft. Hard errors are caused due to fabrication defects in the memory chip and cannot be corrected once they start appearing. Soft errors on the other hand are caused predominantly by electrical disturbances.

Memory errors that are not corrected immediately can eventually crash a computer. This again has more relevance to a server than a client computer in an office or home environment. When a client crashes, it normally does not affect other computers even when it is connected to a network, but when a server crashes it brings the entire network down with it. Hence ECC memory is mandatory for servers but optional for clients unless they are used for mission critical applications.

ECC Memory chips mostly use Hamming Code or Triple Modular Redundancy as the method of error detection and correction. These are known as FEC codes or Forward Error Correction codes that manage error correction on their own instead of going back and requesting the data source to resend the original data. These codes can correct single bit errors occurring in data. Multi-bit errors are very rare and hence do not pose much of a threat to memory systems.



## VPS Hard Disc Drive

The **Barracuda®** drive is perfect for high-capacity, 7200-RPM nearline storage where dollars/GB and watts/GB are primary metrics. It offers energy-saving PowerTrim™ features, internal data integrity protection, superior rotational vibration tolerance and a SATA 3.0-Gb/s interface.

### Features And Benefits

- \* Perpendicular recording technology for maximum capacity
- \* 24x7 operation and 1.2 M hrs. MTBF
- \* Dynamic power saving using Seagate PowerTrim™ technology
- \* Broad spectrum rotational vibration tolerance at 12.5 rads/s<sup>2</sup>
- \* Error recovery control - quick error resolution to prevent system timeouts
- \* Workload management to ensure operational reliability
- \* Quick and robust download with firmware security checks
- \* Write Same command for efficient RAID initialization
- \* Idle Read After Write data integrity checking
- \* 32-MB cache

## Seagate SATA HDD 1TB



## RAID 10

**RAID - redundant array of inexpensive disks**, a technology that allowed computer users to achieve high levels of storage reliability from low-cost and less reliable PC-class disk-drive components, via the technique of arranging the devices into arrays for redundancy.

**RAID 1+0 (or 10)** is a mirrored data set (RAID 1) which is then striped (RAID 0), hence the "1+0" name. A RAID 10 array requires a minimum of two drives, but is more commonly implemented with 4 drives to take advantage of speed benefits.