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Subject: Re: 64/32 guests

Posted by [David Brown](#) on Mon, 10 Sep 2012 18:55:04 GMT

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On 10/09/12 15:00, Mark Olliver wrote:

> Hi,

>

> I am wondering as memory management is a responsibility of the kernel

> and with openvz there is only a single kernel what benefit is there

> of running 64bit guests over 32bit guests if you are only running 32

> bit programs even if they do use a lot of memory?

>

If the host kernel is 64-bit, you can choose 32-bit or 64-bit for the guests (you can also have a mainly 64-bit guest and run 32-bit apps there).

64-bit has three advantages over 32-bit. It allows easier access to more memory, the amd64 cpu architecture is somewhat less brain-dead than the x86 (it has more registers and a more orthogonal instruction set), and it supports more new instructions (more SIMD code, and instructions using longer integers).

So if you have code that involves heavy maths, or can benefit from large amounts of memory, then 64-bit will be a big win.

32-bit has the advantage of using less memory for data structures with pointers, and being slightly more compact code - both leading to higher cache hit rates.

Overall, there is seldom a significant performance or size difference between the two - but 64-bit code has the edge on average.

On the other hand, some software (especially binary-only software) is only available in 32-bit.

For my own use, I use 64-bit almost everywhere, except in a couple of containers where 32-bit makes it easier to install the particular software I wanted on that virtual machine.

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