Subject: Re: OT: recommendations for high preformance workstations
Posted by Mirko on Fri, 11 May 2007 20:20:07 GMT
View Forum Message <> Reply to Message

On May 11, 2:15 pm, Rick Towler <rick.tow...@nomail.noaa.gov> wrote:
> Mirko wrote:
>> On May 9, 12:25 pm, Rick Towler <rick.tow...@nomail.noaa.gov> wrote:
>>>> I am buying my next linux workstation, and other than dollars, are
>>>> there other parameters that I should take into account? My main
>>>> unknown is vendor. Our company likes Dell very much, but I wonder
>>>> whether HP or IBM machines are better engineered or built for
>>>> scientific computations.
>>> Two important considerations are bus topology and bus speed. My
>>> experience with IDL is that it is fairly sensitive to memory bandwidth.
>>> So look for systems with a fast/wide bus.
>
>>> Intel is still using a shard bus architecture which limits the total
>>> bandwidth available to each processor socket. As socket/core numbers
>>> increase, there is a potential for greater bus contention. AMD is using
>>> a point-to-point protocol (Hyper-transport) that provides each socket
>>> with a dedicated connection to RAM. In theory this scales much better
>>> than Intel's bus architecture but it really depends on the application.
>>> If you are seriously thinking about quad procs or more, you should look
>>> at AMD's Opteron seriously.
>
>>> I haven't done any testing, but I would purchase an as fast as you can
>>> get dual core system. For Intel that would be a Xeon 3085 or Core2 Duo
>>> E6850. Both at 3Ghz with a 1333 MT/s bus (333 MHz quad rate). With all
>>> of the buzz around Intel's Core architecture I haven't been following
>>> AMD's releases but if I were buying AMD I would consider the fastest
>>> dual-core Opteron 12xx series available.
>
>>> Don't forget about a decent graphics card. I haven't been following
>>> linux 3d driver development but nVidia has historically had a better
>>> linux driver than ATI (now AMD). nVidia has two lines. The consumer
>>> "Geforce" line and the professional "Quadro". Dollar for dollar, you'll
>>> benefit much more from the higher clock rates and wider memory
>>> interfaces of the GeForce line than you will from the tweaks and driver
>>> optimizations that come with the Quadro line. (What you really pay for
>>> with the quadro line is a card that is certified with a number of
>>> professional modeling and design packages. IDL is not one of them.)
>>> Something like the nVidia 8600-GTS would be a good mid-high-end chip to
>>> go with. Even if you don't do object graphics you should consider a
>>> decent graphics card. There are some features in the upcoming 6.4 that
>>> will be able to take advantage of the hardware even if you aren't using
>>> object graphics.
>
>>>> I am looking for a 64-bit dual processor (dual or quad core) with

>>>> about 8GB. I will be running Fluent (and IDL) on it, and Fluent can
>>>> take advantage of parallelized architectures. So far I have never
>>>> looked into IDL's features for running on parallel machines.
>>> The above recommendations are based solely on my experience with IDL.
>>> Maybe Fluent thrives on a slightly starved quad core system. And you
>>> can certainly buy a quad or octa processor system, you'll just have a
>>> couple of extra cores for running open office and firefox while IDL is
>>> churning away in the background.
>
>>> As for Dell, HP, IBM... Everyone is going to have a story. Our shop is
>>> almost exclusively Dell and our hardware failure rate is probably right
>>> in line with the industry norm. In the few cases where hardware has
>>> failed prematurely a replacement was easily and quickly obtained. I'm
>>> talking *hardware* support though. As of today, Dell doesn't support
>>> a desktop linux distro, and I doubt HP does. I think IBM does... But
>>> as JD mentioned there are a number of vendors that specialize in Linux
>>> systems that you may want to look into.
>
>>> -Rick
>
>> Well, Rick, thanks for the really detailed response.
>
>> I've been going "backwards" in my thinking lately. For my particular
>> application, I need two CPU's/cores with about 8-12GB of RAM.
>
>> What I find interesting is that my current desktop has two 3.6GHz
>> single core Xeon processors. and 2GB or RAM. Intel's latest dual core
>> offering is 3GHz.
>
> Yes, your Xeons are based on Intel's "Netburst" architecture which was
> developed during the MHz wars. Marketing determined that people were
> too ignorant/apathetic to learn the tiniest thing about their PCs and
> that as long as your PC had a bigger number on the box than your
> competitor, you sold more.

Are you referring to me there ? :-)

stuff deleted ...

Your comments about the multiple-instructions/clock cycle remind me of
the discussions in the late 80's early 90's regarding the CISC vs RISC
architectures. Are we going back to CISC?

>
> Again, it is hard to make general recommendations, but if you can wait a
> few months, I would look for a Xeon 3085 or Core2 Duo E6850 system
> with the Intel P35 "Bearlake" chipset. If you need to buy now, the Xeon
> 5160 on an Intel 5000X chipset based motherboard would be my

> recommendation. Looking at aslab.com, they offer it in their
> "Dual-Processors" Marquis series. Closest graphics card they offer to
> my original recommendation is the Asus GF-8600GT. Not a bad choice.
> Pair that with a couple of 20" monitors for desktop bliss.
>
I plan to wait for at least two months. We'll see after that.

Have a good weekend (everybody)

Mirko
