

Re: Pentium vs Celeron

Source:

<http://www.tech-archive.net/Archive/WinXP/microsoft.public.windowsxp.hardware/2004-03/4179.html>

From: Michael Solomon \(\MS-MVP Windows Shell/User\) (*user_at_#notme.com*)

Date: 03/27/04

Date: Fri, 26 Mar 2004 18:10:25 -0800

Essentially, I agree with the following caveat, if builders can low ball the Pentium they can low ball the Celeron. My response was simply to point toward a comparison of the two processors, not two systems nor would I advise anyone to purchase based solely on processor.

I'm currently in the midst of planning my next purchase and have written and posted the first in a series to cover it. The first is a general overview, the second will deal more specifically with the overall hardware I am seeking and the reasons why. To simply buy on the basis of processor with no eye toward the rest of the system serves no purpose as the system may well be have several choke points. Right now, I'm amazed at the number of pretty good Pentium 4 systems that come with shared memory. People get them home and when they try to play games or a DVD movie, at best it plays haltingly and at worst it crashes.

However, I think the fault lies more with the builders than with Intel. There's a race to the bottom mentality among computer manufacturer's today and I blame Dell for this and they are a prime example of exactly what you've mentioned. Their ads say, "Think you can't afford a Dell, think again." However, upon close examination of that under \$500 system that Dell has offered, you find a fine example of what you have stated, a good processor that is choked at every turn, a processor not allowed to breath and do its stuff. It may be fine for normal office work as long as the number crunching and graphics requirements aren't too great and fine for the beginner and student with the same proviso but the average user today is taking digital photos, storing and editing them and videos, playing some pretty powerful games, watching DVDs and even television on their systems and that puny Dell well barely be able to handle such tasks.

It was not my intent to offer the information I offered in that context and when I mentioned a Pentium over a Celeron I should have added that the user needs to view the processor in the context of the entire system and not just on the basis of the processor alone. Unfortunately, that was the impression when I said you could get a Pentium system for \$100 or so more than a top Celeron. That's true, you can but people need to view systems in terms of what they are going to do with them, their needs as well as how long they intend to keep the system and that should be as much a consideration as what

they plan to spend in order to find a system that best suits their needs and their budget.

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DTS-L.Org: <http://www.dts-l.org/>

"cquirke (MVP Win9x)" <cquirkenews@nospam.mvps.org> wrote in message news:s5i860ta5kfqjtj9qpr8p161lc0uorm03op@4ax.com...

> On Thu, 25 Mar 2004 14:42:18 -0800, "Michael Solomon \ (MS-MVP Windows

>
>>can purchase a Pentium 4 system for between \$100 and \$200 more than a
>>comparably equipped Celeron based system. At such a low differential, it
>>simply doesn't make sense to get Celeron based system:

>

> Nah, I'd rather exercise more control over the whole spec. If
> \$100-\$200 is worth spending on "Pentium Tax", then how much more
> worthwhile is a third of that to treble the HD capacity?

>

> Celeron and Pentium 4 are based on the same core, and in fact there's
> often more difference between one pentium X sub-generation than the
> next than there is between Celeron and Pentium X. In fact, in some
> cases, the newer Celeron outperform older Pentium X within the same
> broad category. Here's what I mean...

>

> Pentium II/III generation:

>

> 512k half-speed Level 2 cache, 66MHz base
> Zero Level 2 cache, 66MHz base
> 128k Level 2 cache, 66MHz base
> 256k Level 2 cache, 66MHz base
> 256k Level 2 cache, 100MHz base
> 512k Level 2 cache, 100MHz base
> 512k Level 2 cache, 133MHz base

>

> The first, fourth and last two of the above were branded "Pentium";
> the rest, "Celeron". In fact, both Pentium and Celeron names were
> attached to the 256k L2, 100MHz cores.

>

> P4 generation

>

> 256k L2, 400MHz base
> 128k L2, 400MHz base
> 512k L2, 400MHz base
> 512k L2, 533MHz base
> 512k L2, 800MHz base, HT

>

> Much beating of the drum between Celeron (the second in the above
> list) and the original P4 (first in the list). Muted murmers when P4
> went 512k, 533MHz etc. while the "old" P4 were still for sale,
> enjoying the marketability of the "Pentium" name (and costing extra
> for "Pentium tax"). Same in the PIII era; beating of the drum when
> Celeron lacked SIMD and PIII had; not a murmer when SIMD was added to
> Celeron later. Ppl still think Celeron suck from "zero L2 cache" days

>

> So steering posters to www.intel.com for straight answers is like
> lambs to the slaughter! They cost about the same to make, so the
> "Pentium tax" is windfall for Intel. What do you expect them to say?

>

> My policy; consider Pentium 4 only after you've maxed out everywhere
> else on the system - decent non-Micro-ATX motherboard, good SVGS if

microsoft.public.windowsxp.hardware: Re: Pentium vs Celeron

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> games is your thing, a large and fast HD, and lots of RAM (or at least
> the option to add later). In practice, I use Pentium 4 only for video
> editing or audio recording systems that are based on i875P
> motherboards, have 2 x 512M DDR400 for that dual-channel 800MHz base
> speed, and typically 3 x 120G S-ATA HDs (1 for system, the other two
> as a 240G RAID 0 workspace).
>
> If you just "buy a Pentium 4" you will end up with Micro-ATX trash
> that will stunt the chip's ability to deliver. Puny HD, built-in SVGA
> with no AGP slot, 533MHz base speed - that's the sort of
> bottom-scraper junk that some builders drop Pentium 4 into, knowing
> that the gormless will only ask about processor.
>
> On the advantages:
> - HyperThreading (new P4 only) helps background tasks
> - most RAM access caught in Level 1 cache
> - most of the rest in Level 2 cache
> - law of diminishing returns when boosting L2 cache size
> - only the few remaining RAM accesses go to RAM
>
> So in effect, going 800MHz instead of 400MHz doubles the remaining 5%
> or so of your memory accesses that the L1 and L2 caches missed, 128k
> L2 cache does most of the work that 256k L2 does, and 512k a bit more
> after that. Pentium 4's nice-to-have, yes, but the same money can
> bring in larger benefits when spent elsewhere in spec-boosting a
> price-hero system. Start with the HD, make sure mobo doesn't suck.
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> Running Windows-based av to kill active malware is like striking
> a match to see if what you are standing in is water or petrol.
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