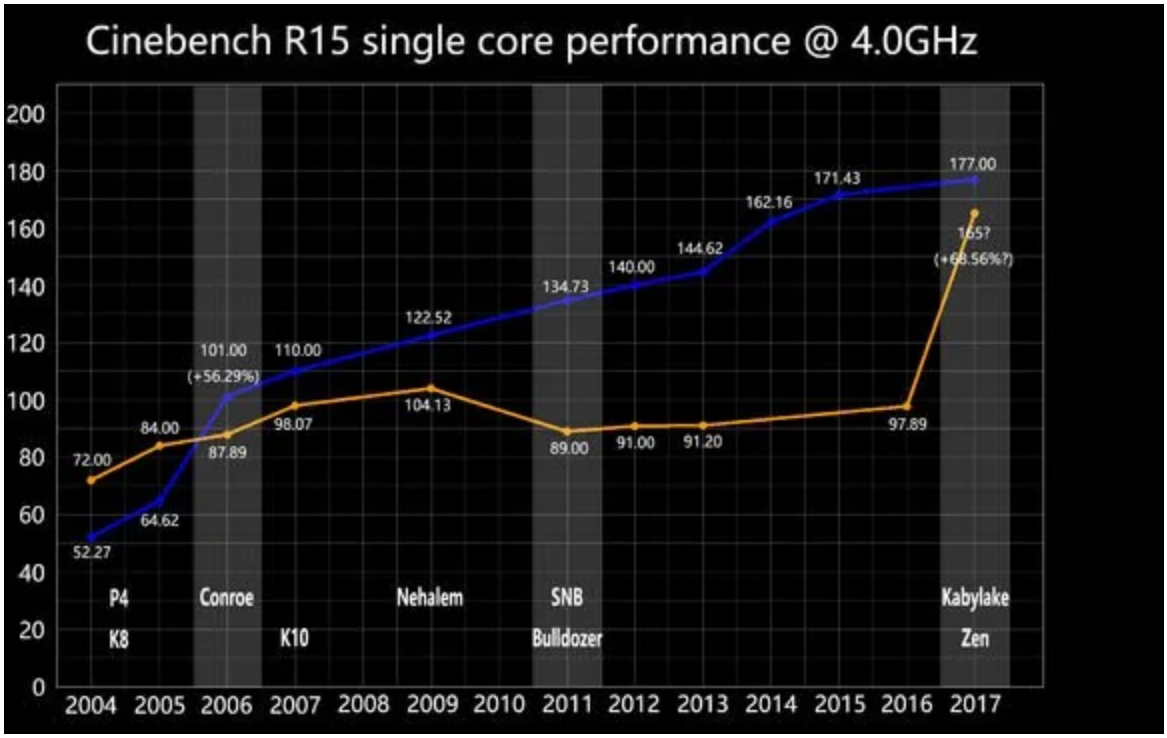
Posted by u/sadtaco- 1600X, Pro4 mATX, Vega 56, 32Gb 2800 CL16 7 years ago

592

IPC performance of Intel and AMD CPUs - 2004 to Ryzen

i.imgur.com/uuMOTo...

Photo



312 Comments Share ...

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New comments cannot be posted and votes cannot be cast

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I mean, if you draw an imaginary line between the end of K10 and Zen you get pretty much what would've happened if Bulldozer wasn't a complete screw-up.

130 Share •••

sadtaco- OP · 7 yr. ago
1600X, Pro4 mATX, Vega 56, 32Gb 2800 CL16

Yep.

They could have just shrunk the die, not signed a 6 year 32nm fab deal with GloFo, and stayed competitive. Bulldozer was a big mistake, but that's in the past now. It's a new era which... is kind of a return to the old one.

70 Share •••

myballsgodiva · 7 yr. ago

They basically *did a 360°* lol

17 Share •••

QWieke · 7 yr. ago
i5 4670K 8GB RX Vega 56

180 surely

8 Share •••

firagabird · 7 yr. ago
i5 6400@4.2GHz | RX580

I think he meant AMD made 2 180s: the backwards 180 with bulldozer, and the forward one with Zen.

39 Share •••

QWieke · 7 yr. ago
i5 4670K 8GB RX Vega 56

Ah, that makes more sense yeah.

5 Share •••

[deleted] · 7 yr. ago

Or from a different perspective, AMD were gaining altitude and then were left to hover in mid-air for a decade after engineers were told to replace their engines with twice as many engines that were only half as powerful. The AMD PR machine focused all their efforts on praising

3 Share ...

[deleted] · 7 yr. ago

vec(R)=[1, 67.11] surely

1 Share ...

ras344 · 7 yr. ago

They turned 360 degrees and walked away.

2 Share ...

kjhgfr · 7 yr. ago
RYZEN7 X1700, RX 480

I'm surprised that they didn't catch up to the Phenom II IPC-wise.

Now I'm tempted to push mine to 4GHz.

3 Share ...

Archmagnance · 7 yr. ago
4570 CFRX480

Bulldozer was a sacrifice in IPC. Not much they could do to the archetecture itself to catch back up on the front.

5 Share ...

phate_exe · 7 yr. ago
1600X/Vega 56 Pulse

They're awesome at 4GHz, just VERY power hungry. I'm pretty much hitting a wall with this motherboard that's right around 4GHz, but I'll rebuild it with a better power supply and the crosshair board I have and see how much farther I can go.

2 Share ...

lolfail9001 · 7 yr. ago

Not really, that line would be way steeper than Intel's AND AMD's at the time.

5 Share ...

perdyqueue · 7 yr. ago

So would Intel's. They've been coasting.

Archmagnance · 7 yr. ago
4570 CFRX480

Proof that's it's coasting instead of it just being hard?

3 Share •••

lolfail9001 · 7 yr. ago

Well, if you draw line between Conroe and Kaby result there, then the line would be slightly above the course until Haswell and slightly below it after.

1 Share •••

disintegore · 7 yr. ago
angry nerd

You would get pretty much what happened, point. This includes the Vishera refresh, which came pretty late and made no meaningful improvements to Piledriver at all.

Behind the scenes, AMD was most likely making linear gains as they were slowly improving Zen. This graph makes it seem like a massive leap out of nowhere when in reality they've been slowly grinding it out since 2012.

1 Share •••

Firecracker048 · 7 yr. ago
5600x/7900xt

Now I know that bulldozer was a flop and not great in any regards but why was it such a failure?

1 Share •••

Archmagnance · 7 yr. ago
4570 CFRX480

The graph tells you a lot. Also at the time things were very slowly moving towards muktithreaded.

2 Share •••

Firecracker048 · 7 yr. ago
5600x/7900xt

What I meant was it an archuteucre flaw or just terrible kernels?

2 Share •••

Archmagnance · 7 yr. ago
4570 CFRX480

[deleted] · 7 yr. ago

Did AMD break into Area 51 and steal some Zeta Reticulian's GPS or something? Sheesh.

160 Share •••

sadtaco- OP · 7 yr. ago

1600X, Pro4 mATX, Vega 56, 32Gb 2800 CL16

A lot of it comes down to that they have access to Intel's patents (and Intel AMD's), and Bulldozer was a mistake.

They scrapped a lot with Bulldozer to have so many cores. It turns out that all those things they scrapped were important.

But ayyy just hire Jim Keller for another 3 years for another 65% IPC increase, sure. :^)

153 Share •••

WarUltima · 7 yr. ago

Ouya - Tegra

> But ayyy just hire Jim Keller for another 3 years for another 65% IPC increase, sure. :)

Intel is gonna sue AMD for anti-trust violations, if the oems doesn't take Intel's bribe this time.

52 Share •••

Shiroi_Kage · 7 yr. ago

R9 5950X, RTX3080Ti, 64GB RAM, M.2 NVME boot drive

> Intel is gonna sue AMD for anti-trust violations,

This will never happen. Intel needs AMD to be marginally competitive in order not to be hit with another anti-trust suit, and something like this could cripple AMD to the point where it's necessary.

30 Share •••

sadtaco- OP · 7 yr. ago

1600X, Pro4 mATX, Vega 56, 32Gb 2800 CL16

> VIA is totally a competitor. giff monopoly

14 Share •••

firagabird · 7 yr. ago

in a current context?

7 Share •••

deaddodo · 7 yr. ago

They're still, *technically*, the third provider of x86. But they haven't updated them in forever (since the Nano / Nano Quad).

They mostly sell their x86 SBCs/nano-itx boards in the kiosk / thin-client market.

12 Share •••

Shiroi_Kage · 7 yr. ago

R9 5950X, RTX3080Ti, 64GB RAM, M.2 NVME boot drive

> But they haven't updated them in forever

Wikipedia says that their latest processor was released in the year 2011, which is like 3 centuries ago in technology terms.

11 Share •••

Karavusk · 7 yr. ago

Just like AMDs currently CPUs (atleast until next week)

4 Share •••

3 more replies

sadtaco- OP · 7 yr. ago

1600X, Pro4 mATX, Vega 56, 32Gb 2800 CL16

A few years ago, supposedly they had a Nano competitor that was like 50% faster at 30% higher clocks... quad core. That's the last I heard about them. There was no mention of performance per watt.

They still sell stuff that's in like HTPCs and stuff I think? But they don't sell to plebeians. We are just not worthy.

3 Share •••

blake_loring · 7 yr. ago

Yeah, in addition their existing agreements regarding the x86 and AMD64 IP would be a mess.

they used to call it 'innovate'.

5 Share •••

Archmagnance · 7 yr. ago
4570 CFRX480

????

1 Share •••

4 more replies

jppk1 · 7 yr. ago
R5 1600 / Vega 56

This is also pretty much a worst case scenario for BD deriatives, only beaten by heavily parallel MT due to module scaling and shared FP units.

Interestingly enough the first iterations off BD (circa '09) had cores basically with the same resources as the modules on the version released in 2011, with a total of six cores instead of eight. They changed that later on possibly due to cache bandwidth, even worse efficiency and focus on servers. I doubt that it could have held a candle against SB much better than BD did, but at least it would have been far better in single-threaded performance.

It'd also be nice to see Intel's jump between P3 and P4. I imagine there is a "hole", much alike in this one.

12 Share •••

lolfail9001 · 7 yr. ago · *edited 7 yr. ago*

> It'd also be nice to see Intel's jump between P3 and P4

cinebench requires sse2, would not even launch on p3 to make extrapolation from.

13 Share •••

NintendoManiac64 · 7 yr. ago
Radeon 4670 512MB + 2c/2t desktop Haswell @ 4.6GHz 1.291v

> You'd have to use the old Cinebench R10 for that.

1 Share •••

Dragnar12 · 7 yr. ago

But even now a day,s 4 core,s used is rare in games

37 Share ...

sadtaco- OP · 7 yr. ago · *edited 7 yr. ago*
1600X, Pro4 mATX, Vega 56, 32Gb 2800 CL16

Even if the programs used all 8 cores, it'd have been a bit behind compared to an ~~i5-2700k~~i7-2700k with its 4cores, 8 threads, and better IPC.

You can see some recent benchmarks where people tried to compare intel vs AM3+, and yeah the FX 8350 does actually do fine in these newer highly threaded game engines. But they still choke at higher FPS because their IPC isn't good enough.

41 Share ...

GreatOmarPlays · 7 yr. ago

> Even if the programs used all 8 cores, it'd have been a bit behind compared to an ***i7-2700k*** with its 4cores, 8 threads, and better IPC.

FTFY

28 Share ...

Pimpmuckl · 7 yr. ago
7800X3D, 7900XTX Pulse, TUF X670-E, 6000 2x16 C32 Hynix A-Die

the 2600k was also an i7

19 Share ...

labatomi · 7 yr. ago
NVIDIA

> the 2500k was the I5. which doesn't have HT

9 Share ...

GreatOmarPlays · 7 yr. ago

That is correct.

3 Share ...

Dragnar12 · 7 yr. ago

true but they are also way lower priced

2 Share ...

They were low priced because they performed poorly, not because they were cheap to make. Bulldozer had a 50% larger die than Sandy bridge, and Sandy included an igpu.

21 Share •••

DropTableAccounts · 7 yr. ago

That depends heavily on the workload. There are workloads where a FX-8370 (~120$) is about as fast as a Core i5 6600K (~200$).

They may perform poorly overall, but if someone doesn't need certain stuff (floating point calculations I'd guess) the FX-8370 isn't a really bad choice. (e.g. compiling software - two FX-8370 can be just as fast as a Core i7 5960X for ~1000$)

3 Share •••

Blue-Thunder · 7 yr. ago
AMD Ryzen 7 5800x

If that was true, then all encoders would be using AMD platforms. As it stands, AMD processors, currently, suck balls when it comes to encoding.

5 Share •••

1 more reply

Archmagnance · 7 yr. ago
4570 CFRX480

Not really, DX11 handles a lot on the first core by default, AAA titles might have been great but anything else would have still felt like ass.

2 Share •••

Dragnar12 · 7 yr. ago

Last time i checked direct x was a program and as such falls under programs only using 1 core in general (4 core if lucky)

1 Share •••

[deleted] · 7 yr. ago

DirectX is an API, not a program.

4 Share •••

1 more reply

Another problem was that Bulldozer was delayed several times so the design was dated by the time it shipped. Still, 8150 and 8350 were great if you could keep all 8 cores busy and did't rely on float point throughput much. They were competitive with Nehalem/Westmere but Intel eclipsed them significantly with Sandy Bridge's IPC improvements.

6 Share •••

bilog78 · 7 yr. ago

Bulldozer FP throughput wasn't as bad as a lot of people made it to be. The shared FPU was still able to issue two instructions per cycle, if the instructions were half-width or less, so you would incur the sharing penalty only if you actually managed to fully utilize the full width of the FPU, and then again only inasmuch as you could keep it fed properly (which even a lot of HPC code fails to do, mostly because memory and even higher-level cache bandwidth starts to become an issue). One would actually suffer the full blown 50% hit only in ideal cases.

At the same time, on Intel CPUs, AVX mode doesn't even trigger unless you have a long enough stream of AVX instructions, and when it does the CPU actually throttles to 80% working frequency. Moreover, when going into full utilization, Intel's HT actually gets in the way, and further causes a drop in performance (10% to 20%, depending on architecture and code), so in HPC applications it is not unusual to disable it to get the full core performance for a thread, and the number of physical cores becomes the only significant metric.

In HPC, the Opteron could hold its head pretty well against the same gen Xeons, even with its shared FPU.

5 Share •••

Creeto · 7 yr. ago

Ryzen 5800x3D | C6H | 7900xtx TUF

It's actually made out of xen crystals. Zen.. xen.. "cough". A resonance cascade will happen due to someone overclocking it too high.

(Halflifelol)

39 Share •••

SwammerDo · 7 yr. ago

Is Intel the Combine?

20 Share •••

Come on Gordon....

3 Share •••

larspassic · 7 yr. ago

Half-Life 3 confirmed.

2 Share •••

[deleted] · 7 yr. ago · *edited 7 yr. ago*

The savant genius god emperor of cpu architecture who designed the earlier Athlon chips came back briefly to help with Zen. Sadly he's left again. His small gift of epic wisdom will serve AMD well for years to come.

13 Share •••

[deleted] · 7 yr. ago

AMD's gonna be like, "Hey. Hey, Jim. Look at this Ryzen dolla-dolla. Jiiiiiim. Looooooook."

12 Share •••

ObviouslyTriggered · 7 yr. ago

Nope just finally decided to design a modern CPU. Hopefully they'll be able to keep the same IPC improvement over the next 10 years, one of the major problems AMD had was always keeping pace after a major architectural shift.

4 Share •••

deirox · 7 yr. ago

It's mind-blowing considering AMD made this comeback with like 10 times less R&D expense.

63 Share •••

flyafar · 7 yr. ago
4790k | 1080 Ti | 16GB

we need to clone Keller's brain

26 Share •••

morcerfel · 7 yr. ago
1600AF + RX570

3 Share •••

WatIsRedditQQ · 7 yr. ago
R7 1700X + Vega 64 Liquid

I have a feeling that there is a LOT of waste going on at Intel right now...lack of motivation to innovate probably means a lot of high-ranking positions are getting fat paychecks for lounging around in their offices all day

61 Share •••

i_mormon_stuff · 7 yr. ago

It's not so much waste as it is them being into everything. Tablet and Phone CPU's - Cable Modem SoC's - Phone Modems (iPhone 7 uses Intel in some markets for the modem). They're also doing networking chips not just 1Gb but 10Gb, 40Gb, Infiniband products, creating their own networking standard. They're doing Thunderbolt, creating their own new memory and storage standard (3D Xpoint) along side their already bustling SSD business.

And this is before we consider Intel's immense fabrication R&D for their semiconductor fabrication plants.

And there is more stuff I'm probably forgetting. The company is investing heavily in almost every area imaginable.

Now compare that with what AMD is doing. They make CPU's they make chipsets for their CPU's and they make GPU's. Outside of that and the associated software to make that hardware function there's not much else that they're researching so of course they don't need as much money for R&D to make Ryzen sing.

50 Share •••

chennyalan · 7 yr. ago
AMD Ryzen 5 1600, RX 480, 16GB RAM

I heard that R&D on x86 has steadily been declining at Intel, due to rebudgeting into other industries. I lost the source though

5 Share •••

Rannasha · 7 yr. ago
AMD Ryzen 7 5800X3D | AMD Radeon RX 6700XT

There's also no real reason to keep up x86 R&D budget if there's no serious competition.

If Ryzen becomes a success and AMD starts eating into Intels marketshare, you'll see Intel go back to throwing more money at x86.

xBIGREDDx · 7 yr. ago
i7 2600k, GTX1070

Network, memory, modems, and storage. Because ~~The Cloud~~ *servers* are where all the money is at these days, and Intel is completely investor-driven.

3 Share •••

justfarmingdownvotes · 7 yr. ago
I downvote new rig posts :(

They've made some really bad acquisitions in the past 5 years, you can tell. On top of that, laying off thousands of employees last year iirc

15 Share •••

-Jaws- · 7 yr. ago
7700k | GTX 970 | 16GB DDR4

It helps that CPU progress has slowed tremendously. They're caught up on 7nm and that lets AMD play catch-up.

7 Share •••

hardolaf · 7 yr. ago

Intel also has a lot of different business areas.

2 Share •••

2 more replies

4 more replies

maruf_sarkar100 · 7 yr. ago · *edited 7 yr. ago*

I've always known bulldozer to be a dumpster fire, but it being a regression is new to me...

41 Share •••

loggedn2say · 7 yr. ago
2700 // 560 4GB -1024

it's not really talked about a lot, and around 2012ish on reddit there were a lot of apologists for bulldozer.

but even then it was known (6276 was bulldozer)

it's pretty amazing that amd is still even around due to how much financial damage they've gone through, and zen is such an amazing story with that in mind.

maruf_sarkar100 · 7 yr. ago

There are still alot of apologists for bulldozer.

23 Share •••

Dragnar12 · 7 yr. ago

hey i use a lot of multi treaded things and the buldozer offered me the best preformance for my money.
In gaming it sucks ass tough

37 Share •••

firagabird · 7 yr. ago
i5 6400@4.2GHz | RX580

The fx6300 was the best value for my money at the time, as I had an unlocked PII 555 and preemptively bought an AM3+ Mobo thinking that bulldozer was the upgrade AND said it was.

Now I'm on an overclocked it 6400, and wishing AMD all the best with Ryzen.

11 Share •••

-Jaws- · 7 yr. ago · *edited 7 yr. ago*
7700k | GTX 970 | 16GB DDR4

Yeah, the 6300/6350 made a lot of sense in 2012/2013. It was more than good enough to play the games of that era, it was inexpensive, and we anticipiated better multi-core support in the future, especially with the announcement that the XB1 and PS4 were going to use 8 core Jaguars.

But that multi-core support didn't arrive as soon as we thought. By the time it did, Intel was even further ahead and there was no sign that AMD was going to release mid/high range CPUs that could compete.

All considering, my processor has held up pretty damn well and I don't regret buying it. My PC is snappy, and it plays Fo4 and the Witcher 3 well enough on high settings. Bulldozer and Piledriver might not have been on par with Intel's, but I don't think they were bad processors at the time. The problem was, the arhcitecture had no room to grow.

7 Share •••

Firecracker048 · 7 yr. ago
5600x/7900xt

The problem is there isn't a lot of multi thread apps that can effectively use all 8 of those cores

Dragnar12 · 7 yr. ago

yeps
And direct x 11 is one of those programs

1 Share •••

_TheEndGame · 7 yr. ago
5800x3D + 3060 Ti.. .Ban AdoredTV

Hell we got some right here in the comments section

4 Share •••

1 more reply

tamarockstar · 7 yr. ago
5800X RTX 3070

There was all sorts of speculation on instruction sets that Windows wasn't utilizing and how it scheduled tasks to cores and all sorts of nonsense. They were decent budget chips that were great for multi-tasking. That never changed or improved. I remember all the excuses people were making.

9 Share •••

chennyalan · 7 yr. ago
AMD Ryzen 5 1600, RX 480, 16GB RAM

They were only good budget chips due to the (relatively) tiny margins AMD took on them, the die sizes of Bulldozer were huge compared to Sandy Bridge. But your point is still correct.

3 Share •••

HugeHans · 7 yr. ago

I think game consoles kept AMD from going under. It has provided a steady stream of revenue for years.

4 Share •••

Comment deleted by user · 7 yr. ago

Jack_BE · 7 yr. ago

There's a good reason why CPUs like the Phenom II X6 still blew Bulldozer out of the water despite being older.

3 Share •••

I found this article which explains why bulldozer failed by an ex-employee. It looks like a case of mismanagement and a bad CEO.

> The new CEO [Dirk Meyer] is a guy that once told the design team (when he was a manager in Texas) “if you don’t like it, quit” – and 60 out of 100 people in Sunnyvale quit within a month. They used to hand place and hand instantiate each cell in the design for maximum efficiency and speed – now they rely on tools which perform 20% worse than humans (in order to save money).

-

> The team that designed the K6-2 was the CMD team, which was formed by the acquisition of a company called Nexgen. That team also designed Athlon 64 and Opteron (Athlon was designed by the TMD team). By 2007, all the key CMD folks were gone. The team that was left sucks, and has accomplished little since then other than shrinks to smaller technology and bolting more of the same cores on.

http://www.insideris.com/why-amd-failed-another-ex-employee-confession/

1 Share ...

ImTheSlyDevil · 7 yr. ago
5600 | 3700X |4500U |RX5700XT |RX550 |RX470

Imagine if they had continued with K10...

At least we get its "successor" now. Better late than never.

51 Share ...

ObviouslyTriggered · 7 yr. ago

Wouldn't matter, Intel had nearly 10% IPC increase with each release, AMD had closer to 2% in that era.

Hopefully things will change soon, cannonlake is a new process, and icelake is a new arch both of them are designed by the Intel's Israeli team which were responsible for all the major architecture and process improvements.

8 Share ...

sadtaco- OP · 7 yr. ago
1600X, Pro4 mATX, Vega 56, 32Gb 2800 CL16

It was not 2%.

And in real world applications, the K10 architecture was competitive with Nehalim more than the IPC suggests.
http://images.anandtech.com/graphs/amdphenomii_010709132536/17983.png

those gains.
8 is 33% more cores than 6, but multicore does not scale linearly in real applications (especially at the time, oh my god)

26 Share •••

ObviouslyTriggered · 7 yr. ago

It was 2%. Cinebench is a real world application (Cinema 4D), i think you mean "gaming". K10 didn't managed to get a 10% IPC increase in it's entire lifespan. And multicore scaled perfectly in a very large subset of real world application even back then, again say games rather than a real world application.

11 Share •••

sadtaco- **OP** · 7 yr. ago
1600X, Pro4 mATX, Vega 56, 32Gb 2800 CL16

That's not what I said.

Cinebench does not show 2% per year for K8 and K10 except for a single year in a 7 year life span.

12 Share •••

7 more replies

20 more replies

zakats · 7 yr. ago
ballin-on-a-budget, baby!

I posed this question to r/amd a few months ago if you're interested in reading through the comments

https://www.reddit.com/r/Amd/comments/5304mf/questionscenario_for_those_who_know_the_history/

1 Share •••

sadtaco- **OP** · 7 yr. ago
1600X, Pro4 mATX, Vega 56, 32Gb 2800 CL16

Based on leaked Cinebench R15 results. Not made by me. Source is a baidu topic, but I can't find which as the reposter didn't source it.

22 Share •••

What the fuck Bulldozer was a DOWNGRADE over K10...

How?

21 Share •••

readgrid · 7 yr. ago

b-but more cores!

31 Share •••

flyafar · 7 yr. ago
4790k | 1080 Ti | 16GB

dons jester hat

9 Share •••

Half_Finis · 7 yr. ago
5800x | 3080

Basically they failed.

7 Share •••

CataclysmZA · 7 yr. ago
AMD

It turns out that when you design a microarchitecture with a very long instruction pipeline, and release it on a process that isn't power efficient, and results in a 200W power draw, with lower average clock speeds, then you actually lose performance compared to your previous design which was much better balanced in comparison.

This is why people are still using Phenom X4 and X6 chips today. Also, AMD didn't learn from Intel's mistakes with the Pentium 4.

8 Share •••

Patriotaus · 7 yr. ago
AMD Phenom II 1090T RX480

Yup, I haven't really had a need to upgrade my Phenom II x6 1090T.

That is until recently... when my needs have... *increased*

2 Share •••

YottaPiggy · 7 yr. ago
Ryzen 7 1700 | 1080 Ti

MORE CORES

4 Share ...

Qesa · 7 yr. ago

AMD decided to recreate the P4

4 Share ...

TommiHPunkt · 7 yr. ago

Ryzen 5 3600 @4.35GHz, RX480 + Accelero mono PLUS

You could call it AMD's Netburst

5 Share ...

[deleted] · 7 yr. ago

Bulldozer was an unmitigated disaster.

2 Share ...

chennyalan · 7 yr. ago · *edited 7 yr. ago*

AMD Ryzen 5 1600, RX 480, 16GB RAM

Correct me if I'm wrong, but thought they had higher clocks and more cores, and that it was more of a side grade.

EDIT: Note, the above was somewhat off topic

2 Share ...

hypelightfly · 7 yr. ago

Neither of which mean anything in a discussion about single threaded IPC.

2 Share ...

Armand_Raynal · 7 yr. ago

https://i.imgur.com/PaHarf4.png

They wanted to have more room loosing as less as possible perf to put a correct IGP in their APUs.

Bulldozer has quite a lot of cores for 80% of performance of regular cores and something like 35%(can't remember the figure but it was quite good) room gained.

1 Share ...

slower_you_slut · 7 yr. ago

1 Share •••

[deleted] · 7 yr. ago

I don't get how Bulldozer was so bad though... like how was it a downgrade.

I've had second thoughts about grabbing an 8350 on the cheap for an Emby encoding server.

1 Share •••

slower_you_slut · 7 yr. ago · *edited 7 yr. ago*

3x30803x30701x3060TI1x3060 if u downvote bcuz im miner ura cunt

I had the FX 8350 at 5 Ghz, it was decent but thats about it.

The difference is like day and night between haswell and FX in some games. But I kinda miss the superior multitasking of fx though.

1 Share •••

[deleted] · 7 yr. ago

Wait, AMD's IPC actually regressed at some point? Dafuq? That Zen spike though is amazing. Jim Keller is a legend.

17 Share •••

reallynotnick · 7 yr. ago

Intel 12600K | Sapphire Vega 56

IPC went down but multithreading went up with more cores.

31 Share •••

sadtaco- OP · 7 yr. ago

1600X, Pro4 mATX, Vega 56, 32Gb 2800 CL16

And then Zen is like

> Por que no los dos

15 Share •••

[deleted] · 7 yr. ago

Which didnt help them at all at the time.

2 Share •••

PHEEEEEEEEENOMMMMMM MASTER RACEEEEEEEEEE

41 Share •••

Saladino_93 · 7 yr. ago
Ryzen 7 5800x3d | RX6800xt nitro+

what kind of Phenom is it you own? never heard about a 1600t

11 Share •••

deirox · 7 yr. ago

I'm guessing it's unlocked. Mine also changed name when I unlocked the extra cores.

9 Share •••

Phayzon · 7 yr. ago
GP102-350

I had an X3 720 that changed it's name to X4 20 when unlocked.

2 Share •••

Arctousi · 7 yr. ago
AMD R5 2600|MSI B450 Gaming Pro Carbon|16 GB 3200 Ram| GTX 1080

Hey same here, I overclocked mine to 3.5 GHz while the fourth core was unlocked. Great little core for the money.

1 Share •••

Phayzon · 7 yr. ago
GP102-350

I couldn't quite get 3.5 out of mine, maybe if I had a better board. Had a solid 3.4 GHz though!

1 Share •••

Arctousi · 7 yr. ago
AMD R5 2600|MSI B450 Gaming Pro Carbon|16 GB 3200 Ram| GTX 1080

Still quite impressive, it's a wonder how much untapped potential that 2.8 GHz triple core had.

1 Share •••

1 more reply

toasters_are_great · 7 yr. ago

4 Share ...

Comment removed by moderator · 7 yr. ago

chuy409 · 7 yr. ago
i7 5820k @4.5ghz/ Phenom II X6 1600t @4.1ghz / GTX 1080Ti FE

unlocked 960t.

2 Share ...

Jack_BE · 7 yr. ago

1055T !

1 Share ...

[deleted] · 7 yr. ago

Brethren

6 Share ...

WatersEdge07 · 7 yr. ago
R5 5600X/RTX 2060

Let us bask in its overly abundant warmth.

4 Share ...

kofapox · 7 yr. ago

Wait, so a phenom II x6 with some good overclock is better than a bulldozer?

14 Share ...

IlFlacco · 7 yr. ago
R7.5800X3D-Sapphire Pulse 5700xt- Gskill 32gb 3600cl17 dual-rank

Bd yes, vishera nope. An fx8350 is better.

14 Share ...

sadtaco- OP · 7 yr. ago · *edited 7 yr. ago*
1600X, Pro4 mATX, Vega 56, 32Gb 2800 CL16

No, because the x6 was 45nm and the FX 6100 was 32nm. They were roughly equal.

I'm saying if they just kept the same architecture but shrunk it to 32nm, with minor improvements, I firmly believe it would have been better.

&sa=X&ved=0ahUKEwi1jInzvZ3SAhUe0IMKHWpYAvIQ_AUICygE&biw=1536&bih=867#tbm=isch&q=phenom+x6+FX-6100+benchmarks&imgrc=wiKejl_CmSybQM: for example.

You get a bit of performance, not to mention lower power consumption, just from a manufacturing process shrink alone.

So they end up being roughly equal. Cinebench may be especially unfavorable to it.

2 Share •••

zakats · 7 yr. ago
ballin-on-a-budget, baby!

I posted this above but here's the links to a similar topic I posted a few months ago, in case you didn't see it. Good stuff there.

A die shrink + optimizations/modernizations to the Phenom 2 line would have played better for AMD than Piledriver to be sure.

3 Share •••

sadtaco- OP · 7 yr. ago
1600X, Pro4 mATX, Vega 56, 32Gb 2800 CL16

Yeah, like someone else notes there, AMD did continue K10 to 32nm with APUs, but they lacked L3 cache and so on, so not totally compareable. They were also just 4 cores. But still considering that, they performed better.

Not to mention that Bulldozer was heavily delayed, while a die shrink of K10 could have come faster.

They also could have done things like up K10 from 3 instructions per cycle to 4 like done in Bulldozer, I believe, while keeping the extra AGU/ALU. I'm definitely not a hardware expert, though!

Like that poster notes, if there was a Phenom III, then Zen might have been Phenom IV as Zen looks a lot like what Phenom IV probably would have looked like. I mean even to the untrained eye, looking at die shots, they look similar.

There was tons of tech developed for Bulldozer, Steamroller, Piledriver, etc, which is now in Zen. Things for monitoring voltage, each, adjusting for efficiency, and so on, but those would have been developed for "Phenom III" anyway.

2 Share •••

zakats · 7 yr. ago
ballin-on-a-budget, baby!

behind in IPC, that'd be perfectly viable for quite a while as long as they'd gotten power and thermals under control- my 965 BE doubled as a space heater.

3 Share •••

NintendoManiac64 · 7 yr. ago
Radeon 4670 512MB + 2c/2t desktop Haswell @ 4.6GHz 1.291v

This video may be of interest regarding a theoretical Phenom II x8:

https://www.youtube.com/watch?v=ppvOUAVrHfQ

2 Share •••

Cubelia · 7 yr. ago
R5 3600|X570S APAX+MSI RX574 GX |ThinkPad E585

BTW this is where all the magic starts,also the definition of modern "performance"- Core 2 Duo X6800's stock R15 performance.

http://i.imgur.com/T11Q5Te.png

5 Share •••

east_arora · 7 yr. ago
Vega + Ryzen

At this rate, ZEN+++ is going to be insane.

14 Share •••

lolfail9001 · 7 yr. ago

https://xkcd.com/605/

68 Share •••

xkcd_transcriber · 7 yr. ago

Image

Mobile

Title: Extrapolating

Title-text: By the third trimester, there will be hundreds of babies inside you.

Comic Explanation

xkcd.com | xkcd sub | Problems/Bugs? | Statistics | Stop Replying | Delete

25 Share •••

carbonat38 · 7 yr. ago
3700x|1060 Jetstream 6gb|32gb

always thought that sandy bridge was a huge jump

3 Share •••

sadtaco- OP · 7 yr. ago
1600X, Pro4 mATX, Vega 56, 32Gb 2800 CL16

It was because of lower cost in addition to a higher than normal IPC increase.

A Q9450 was like $320. Then the i5-2500k comes out and it's like $230.

A 10% increased IPC and 30% reduced cost together was what was big.

It's similar to what we're seeing now with Ryzen, getting 90-95% the same IPC for 40-65% cheaper.

7 Share •••

reallynotnick · 7 yr. ago
Intel 12600K | Sapphire Vega 56

Also Sandy Bridge came with a huge clock speed boost.

2 Share •••

KungFuHamster · 7 yr. ago
3900X/32GB/9TB/RTX3060 + 40TB NAS

I'm still using my i7 2600k and honestly, I've decided to upgrade as much (or more) for secondary features as pure CPU speed: M.2, USB 3.1, better SATA controller (fuck Marvell), better RAM support, etc.

2 Share •••

swilli87 · 7 yr. ago

Yep, I'm on a 2500K and same story. IPC still probably good enough for me but AMD is making 16 threads at such a good price almost impossible to say no to..

2 Share •••

Phayzon · 7 yr. ago

have an m.2 NVME drive and USB 3.1 and C.

With a 4.7GHz OC, basically nothing challenges this chip. I just want some new platform goodies!

1 Share •••

Phayzon · 7 yr. ago
GP102-350

It was mostly the stock clockspeed jump. IPC as you can see is similar, but the 2600 was a 3.4GHz (3.5-3.8GHz Turbo) chip, and the 920 was only a 2.67GHz (2.8-2.93GHz Turbo) chip. Nearly an entire gigahertz gain at the same price point.

2 Share •••

delshay0 · 7 yr. ago

That's a very sharp steep rise in performance.

3 Share •••

JimJamJamie · 7 yr. ago
Ryzen 7 3800X, 2x16 GB DDR4-3600, B550M AORUS PRO-P

Performance is Ryzen

9 Share •••

delshay0 · 7 yr. ago

I get it, very good, you get a up-vote.

3 Share •••

Massman- · 7 yr. ago

IPC is only one piece of the puzzle. To make a fair comparison in performance progression over time, you also have to take into account the operating frequency headroom.

Lately there's been too much obsession with the whole IPC thing, when in fact frequency matters as much as IPC.

3 Share •••

HatefulAbandon · 7 yr. ago
i7 6700 | GTX 980 ti SLI | 32 GB DDR4 | 165Hz 1440p G-Sync

Beatusnox · 7 yr. ago

Can you imagine how much differently this might have turned out of Intel hadnt outright rigged benchmarks during the P4 era?

The potential market share loss for them and thus gain for AMD could have given AMD the budget to have done proper research/marketing/influence to have their architecture favored.

4 Share •••

sadtaco- OP · 7 yr. ago

1600X, Pro4 mATX, Vega 56, 32Gb 2800 CL16

P4 "rigging benchmarks" didn't do them much good. Enthusiasts still knew that Thunderbird and Athlon 64 were better.

It was kickbacks to OEMs and their marketing that was effective.

12 Share •••

chennyalan · 7 yr. ago

AMD Ryzen 5 1600, RX 480, 16GB RAM

Enthusiasts are only a very small subset of potential CPU buyers.

4 Share •••

Kromaatikse · 7 yr. ago

Ryzen 5800X3D | Celsius S24 | B450 Tomahawk MAX | 6750XT

The rigged benchmarks and compiler were, of course, part of that marketing. Indirectly, but still.

1 Share •••

GreatTragedy · 7 yr. ago

I'd like to see this graph with inflation-adjusted average prices.

2 Share •••

drconopoima · 7 yr. ago

Linux AMD A8-7600

Was Steamroller over Piledriver so minor like that?

Comment removed by moderator · 7 yr. ago

_TheEndGame · 7 yr. ago

5800x3D + 3060 Ti.. .Ban AdoredTV

Fucking LOL at shitdozer. I can't believe I almost bought that shitstain of a CPU.

3 Share •••

[deleted] · 7 yr. ago

Amazing how the Bulldozer IPC went down. And holy shit, Conroe was amazing.

2 Share •••

Grim_Reaper_O7 · 7 yr. ago

A reason why I liked Intel for such a long time and still do. Until this years all cards are down on the table and have yet to flop.

2 Share •••

FloopyMuscles · 7 yr. ago

This could be what AMD needs as long as they stay cheaper by a good amount when compared to Intel. It may not beat Intel power wise, but being a bang for buck would definitely help.

1 Share •••

Weeman89 · 7 yr. ago

What CPU is 2016?

1 Share •••

sadtaco- OP · 7 yr. ago

1600X, Pro4 mATX, Vega 56, 32Gb 2800 CL16

Should be Excavator, which was based on Bulldozer.

2 Share •••

[deleted] · 7 yr. ago · *edited 7 yr. ago*

actually a representation of total gain while the line before that is twice as steep all cores considered.

I'm hoping for a Conroe like CPU from AMD. That E6300 with OC was insane value back then.

1 Share •••

Comment deleted by user · 7 yr. ago

BoosterBass · 7 yr. ago
unlearning...

Inject more Jim Keller into it so it can bounces another miles up lol

1 Share •••

YosarianiLives · 7 yr. ago
1100t 4 ghz, 3.2 ghz HTT/NB, 32 gb ddr3 2150 10-11-10-15 1t :)

The thing is the implication with this graph is that someone got a Athlon 64 and a first gen phenom to 4 Ghz and ran cinebench on it. That's gotta be on ln2.

1 Share •••

sadtaco- **OP** · 7 yr. ago
1600X, Pro4 mATX, Vega 56, 32Gb 2800 CL16

... the implication is that someone did 3rd grade math on their scores.

1 Share •••

YosarianiLives · 7 yr. ago
1100t 4 ghz, 3.2 ghz HTT/NB, 32 gb ddr3 2150 10-11-10-15 1t :)

In other words the graph doesn't really mean much? Arches don't scale linearly with clockspeed, especially once you start getting higher clockspeeds on those old arches.

1 Share •••

hack1ngbadass · 7 yr. ago
12600K 5Ghz| RX6800 TUF| 32GB TridentZ RGB

I'm not going to lie I did like my Nehalem CPU. It wasn't till lightning took it I lost it.

1 Share •••

WTF Kabylake have more IPC than Skylake at 4.0?

1 Share •••

sadtaco- OP · 7 yr. ago

1600X, Pro4 mATX, Vega 56, 32Gb 2800 CL16

Yes? About 3%. It's a slightly different architecture for optimization.

1 Share •••

TK3600 · 7 yr. ago

RTX 2060/ Ryzen 3600

I thought it pretty much had no architectural difference besides some small features.

1 Share •••

31 more replies