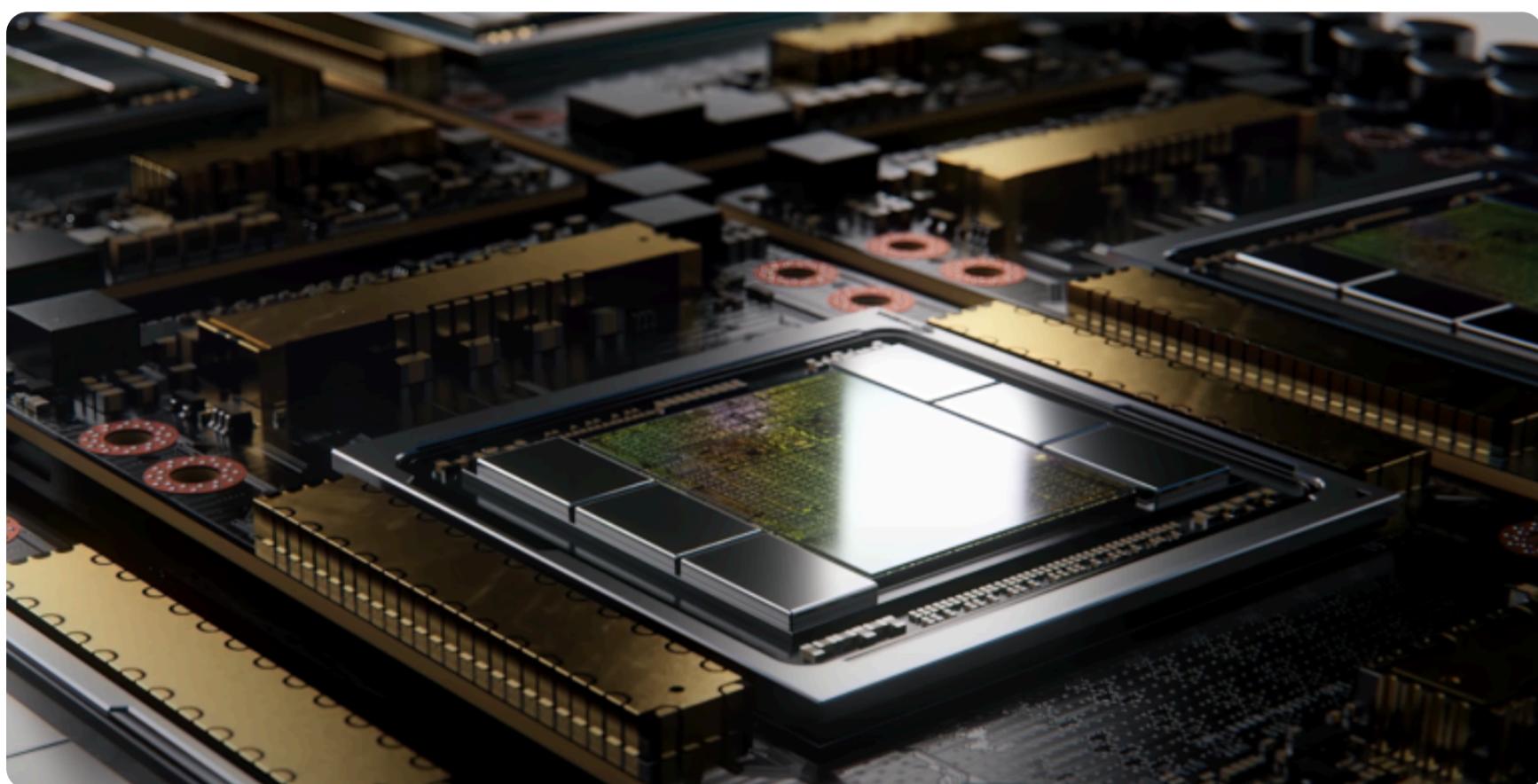


HARDWARE / LEAK

Gigabyte Server “Power Consumption” Roadmap Points To 600W CPUs & 700W GPUs By 2025

Hassan Mujtaba • May 15, 2023 at 12:00pm EDT • Copy Shortlink

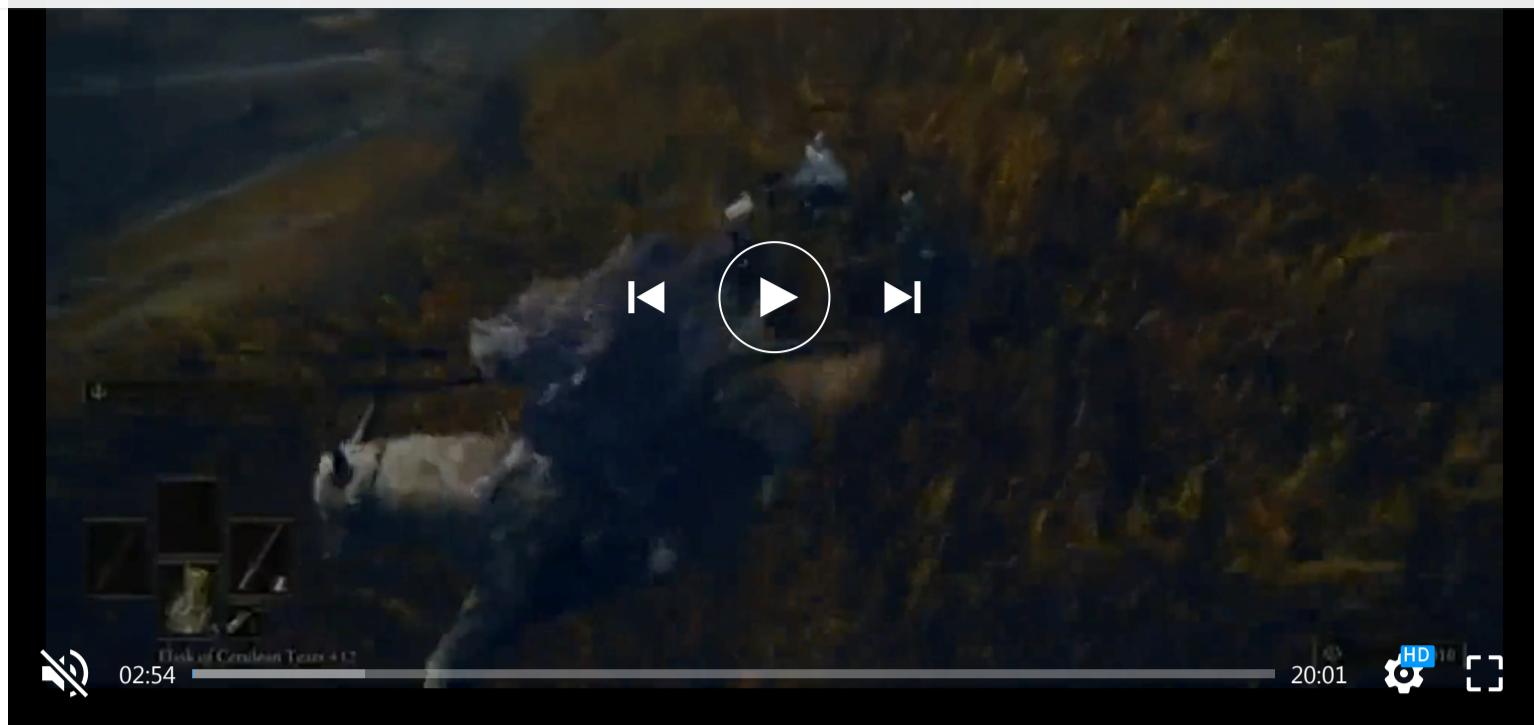
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A leaked roadmap from Gigabyte's server division, Giga Computing, has revealed the power consumption trajectory of next-gen CPUs & GPUs.

Next-Gen Server CPUs & GPUs Could Consume Up To 1000W Power By 2025

We have seen that as technology advances, chips become more powerful and also consume more power. While the current generation of CPUs and GPUs are some of the most efficient designs we have ever seen, we have also seen a surge in overall power consumption as demand for higher & faster computational power grows.



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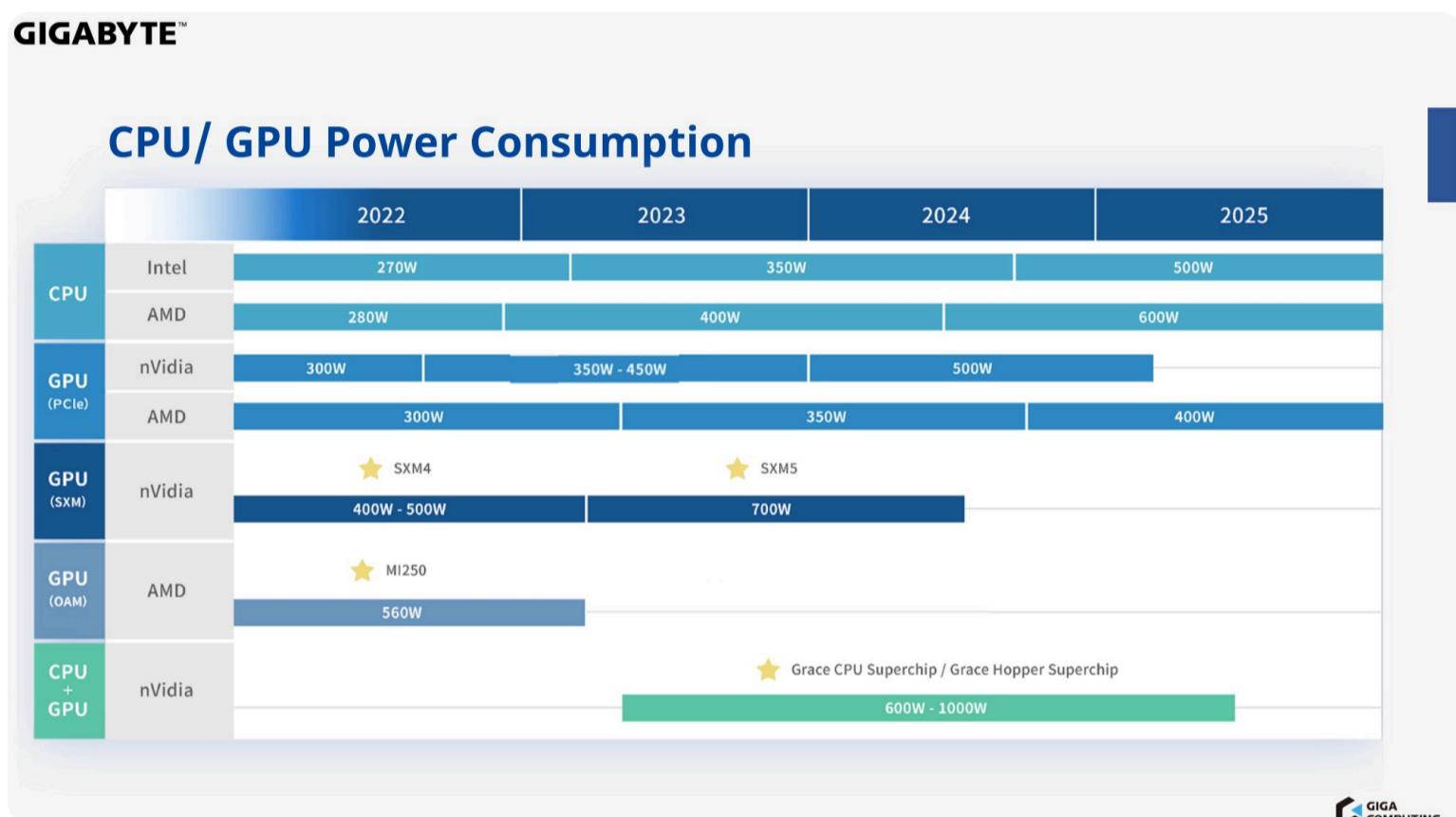
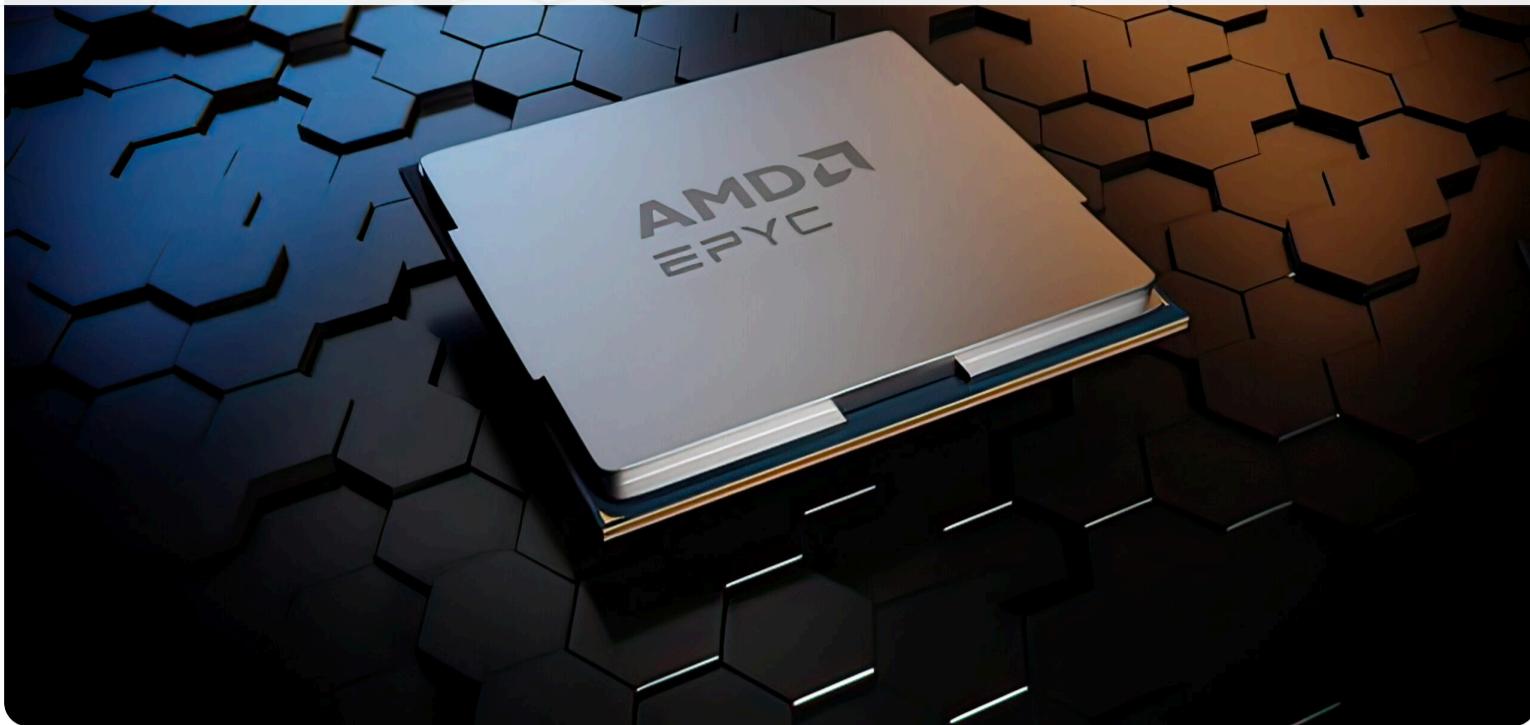


Image Credits: HXL

Now the leaked roadmap from Giga Computing gives us an idea of what to expect from next-gen server-aimed CPUs and GPUs from the big three including AMD, Intel & NVIDIA. Starting with the CPU side of things, Intel is expected to retain TDPs of up to 350W till the mid of 2024 which includes families such as the [4th Gen Sapphire Rapids-SP](#) and [5th Gen Emerald Rapids-SP Xeon](#) chips.



In the second half of 2024, Intel is expected to release its [6th Gen Granite Rapids](#) & which should push the TDP to 500W, an increase of 43% versus the previous generation. The same is true for AMD who will be releasing the [Zen 5-based Turin chips](#) by 2H 2024 and consuming up to 600 Watts of power, an increase of 50% over the Zen 4-based Genoa chips.

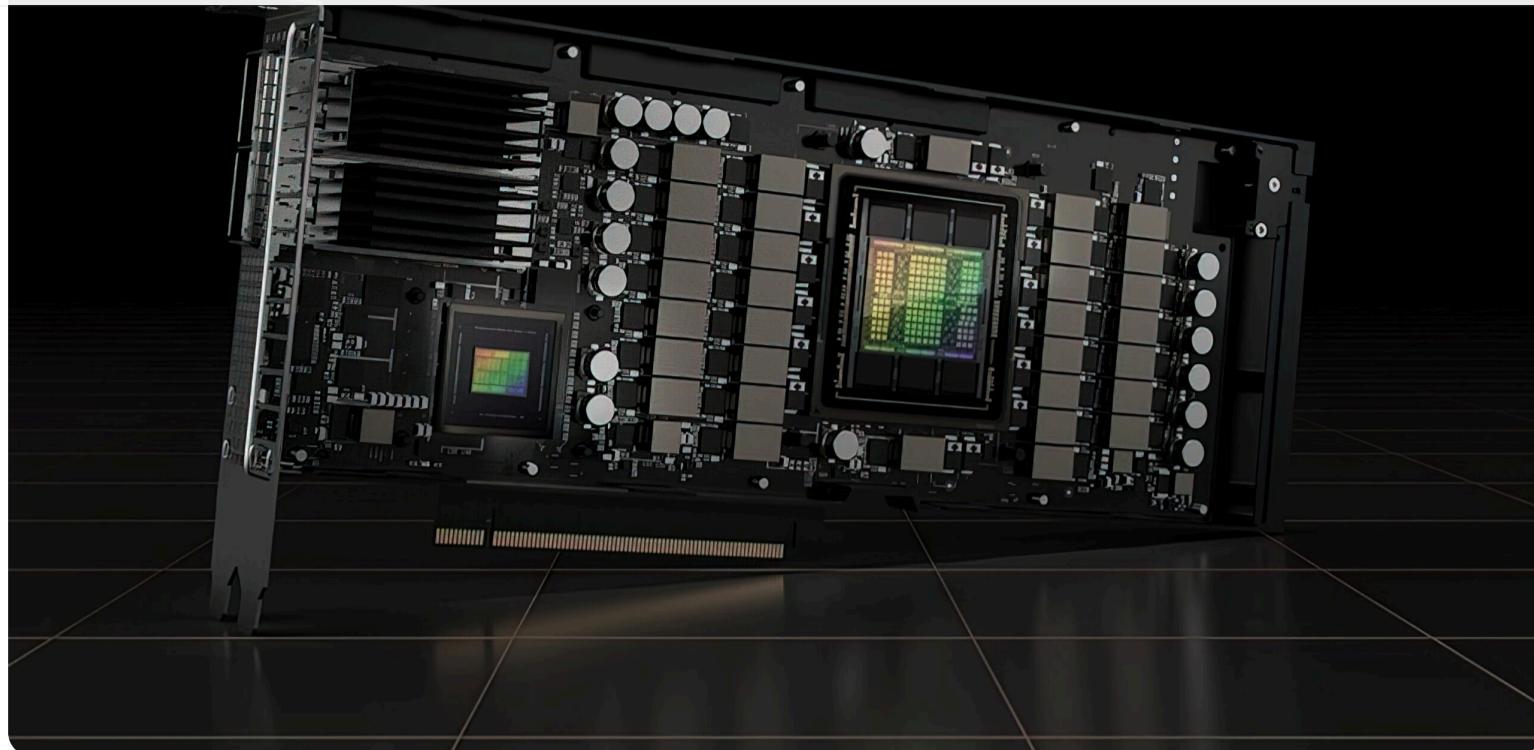
- › **Intel Granite Rapids Xeon CPUs** - Up To 500W (2H 2024)
- › **AMD EPYC Turin Server CPUs** - Up To 600W (2H 2024)

Next up, we have the GPUs, PCIe in particular, and in this segment, we have NVIDIA and AMD going up against each other. NVIDIA's 2024 GPUs are said to offer TDPs of up to 500W and it replaces the existing 350-450W H100 PCIe accelerators. It is likely that the 500W GPU would be utilizing the next-gen [Blackwell chip architecture](#) that battles against AMD's Instinct-class PCIe accelerators that are also going to feature up to 400W TDPs. NVIDIA has moved on to the [newer 12VHPWR standard](#) so it can easily deliver up to 600W of power to its next-gen PCIe solutions.

- › **NVIDIA Next-Gen PCIe "Blackwell"** - 500W (2H 2024)
- › **AMD Next-Gen Instinct "CDNA 4"** - 400W (2H 2024)

On the SXM front, only NVIDIA will have a singular 700W offering which already exists in the form of its H100 unit. The successor to this chip is not listed but it is likely to either retain or get closer to the 1KW range. For AMD, its OAM solution is listed up till the [MI250](#) which is rated at 560W and we know that starting with the [Instinct MI300 chips](#), AMD will be leveraging the standard SP5 socket for its multi-chiplet and multi-IP exascale APUs.

Interestingly, there's no mention of Intel's newest accelerators in the roadmap such as the Ponte Vecchio and Xeon GPU Max series. Intel did announce cannibalizing its [next-gen Rialto Bridge GPUs](#) and will now be launching [Falcon Shores](#) as its primary GPU for servers in 2025.



Last but not least, NVIDIA's [Grace CPU Superchip](#) and [Grace Hopper Superchip](#) are also mentioned and would feature anywhere from 600W to 1000W SKUs. The lineup is expected by the end of 2023 and 1H 2024. So as you can tell from the roadmap, there's no stopping power consumption from going up and we can expect the same from consumer-tier chips though as we saw with Ada GPUs, companies can offer insane amounts of power efficiency despite what early rumors have to say.

Are you ok with the increasing power consumption on next-gen CPUs/GPUs?

- Yes
- No

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DEAL OF THE DAY



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Hassan Mujtaba

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BLACKSAMA 

2 years ago

They are probably looking for victims for their exploding PSUs that nobody wants.

0

0

Reply 

J

jg 

2 years ago

Moore's law is dead so they will try and push progress by increasing power consumption.

2

0

Reply **Scheneighnay** 

2 years ago

That's been obvious already for a while, efficiency peaked a few years ago apart from in the console space

0

0

Reply **Dissident Aggressor, PhD** 

2 years ago

Problem with AMD GPUs is that they take a shit ton of power and still come up well short in performance.

AMD needs to stick to laptop APUs...

1

0

Reply **Sup?** 

2 years ago

Ok, the GPUs i understand, what's up with those CPUs tho

1

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Reply 

K

Kateshi Tikano 

2 years ago

Server cpus

1

0

Reply 

K

Kvx 

2 years ago edited

Silly amount of cores coupled with industrial cooling solution.

1

0

Reply **BATTLE 7** 

2 years ago

You gotta pay to play, I'm very ok with power increases 😊

0

2

Reply **tekina** 

2 years ago

Where's MI300 on the chart? No deal with Gigabyte?

0

0

Reply 

This comment was deleted.

F

FunkyMonkeyLife 

2 years ago

In Japan we recently had 30% hikes.

0 0 Reply ↗



Fried PB+Banana Sandwich 🍫🧃👤 ↗ Guest

2 years ago

Nope, because these 600w CPUs do the work of 4x 250 w CPUs from 2 years ago. So they are more efficient.

1 1 Reply ↗



Starving Huang 🍜🧃👤 ↗ Fried PB+Banana Sandwich

2 years ago

they dont

2 1 Reply ↗



Fried PB+Banana Sandwich 🍫🧃👤 ↗ Starving Huang

2 years ago

They do.

0 0 Reply ↗

L lolmao500 🍜🧃👤

2 years ago

Some guys in taiwan overclocked a CPU to 9ghz back in december. I wonder how much watts that was.

1 1 Reply ↗

L lolmao500 🍜🧃👤

2 years ago

Maybe its time to dump current designs and find something new. 3/2/1nm wont save us.

3 1 Reply ↗



Flo 🍫🧃🍪👤 ↗ lolmao500

2 years ago

something like magic

0 0 Reply ↗

F FunkyMonkeyLife 🍫🧃👤 ↗ Flo

2 years ago

Stacked cores clocked much lower but with more threads. If done correctly it should help to boost performance.

0 0 Reply ↗



Flo 🍫🧃🍪👤 ↗ FunkyMonkeyLife

2 years ago edited

but lower the frequency / lower single thread speed

0 0 Reply ↗

F FunkyMonkeyLife 🍫🧃👤 ↗ Flo

2 years ago

Tbh we are close to tapping out single thread anyway. Moving towards a highly threaded setup for high end programs can yield massive results such as servers and supercomputers. For consumers we may see stagnation until the new hardware is cheap enough and adopted across the board. To be honest. Moving away from X86 to a successor would be helpful. X86 is mega bloated and inefficient. The only reason we keep it is for legacy software and the cost and time to switch over.

0 0 Reply ↗



Fried PB+Banana Sandwich 🍫🧃👤 ↗ FunkyMonkeyLife

2 years ago

We've been hearing this same trash since nehalem came out. It is fake.

We keep x86 because x86 is a very flexible arch. It's also a tiny component of the core. It is not inefficient at what it was designed for, that is complex operation, AKA modern computing.

We've seen the largest per core improvements in the last 5 years since the core 2 era. Ironic you claim stagnation now.

0 0 Reply ↗



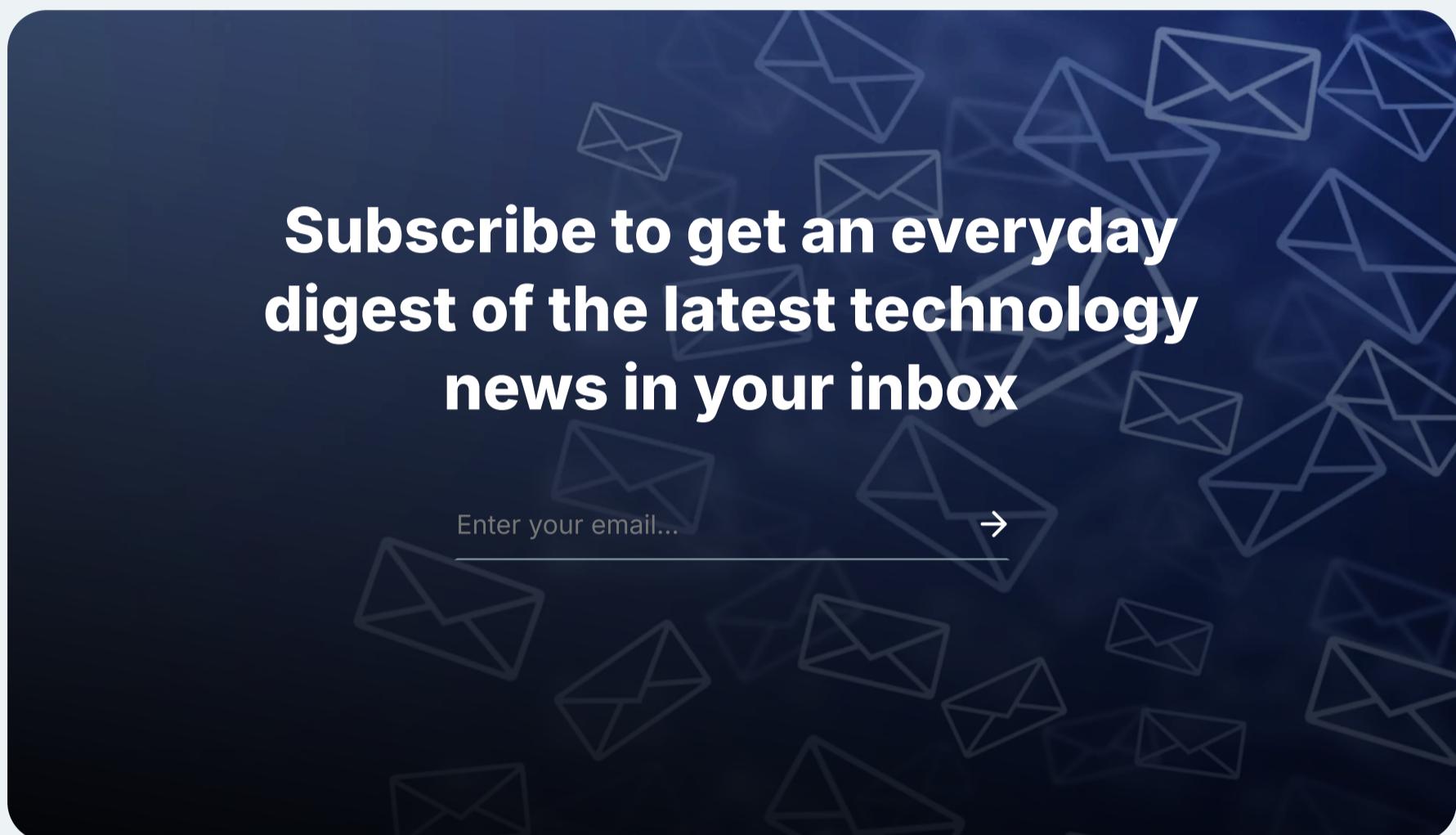
Dave Bristel

👤

Europistan. 

2 years ago

Intel is already there! Good job, gigatards.

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