r/DataHoarder

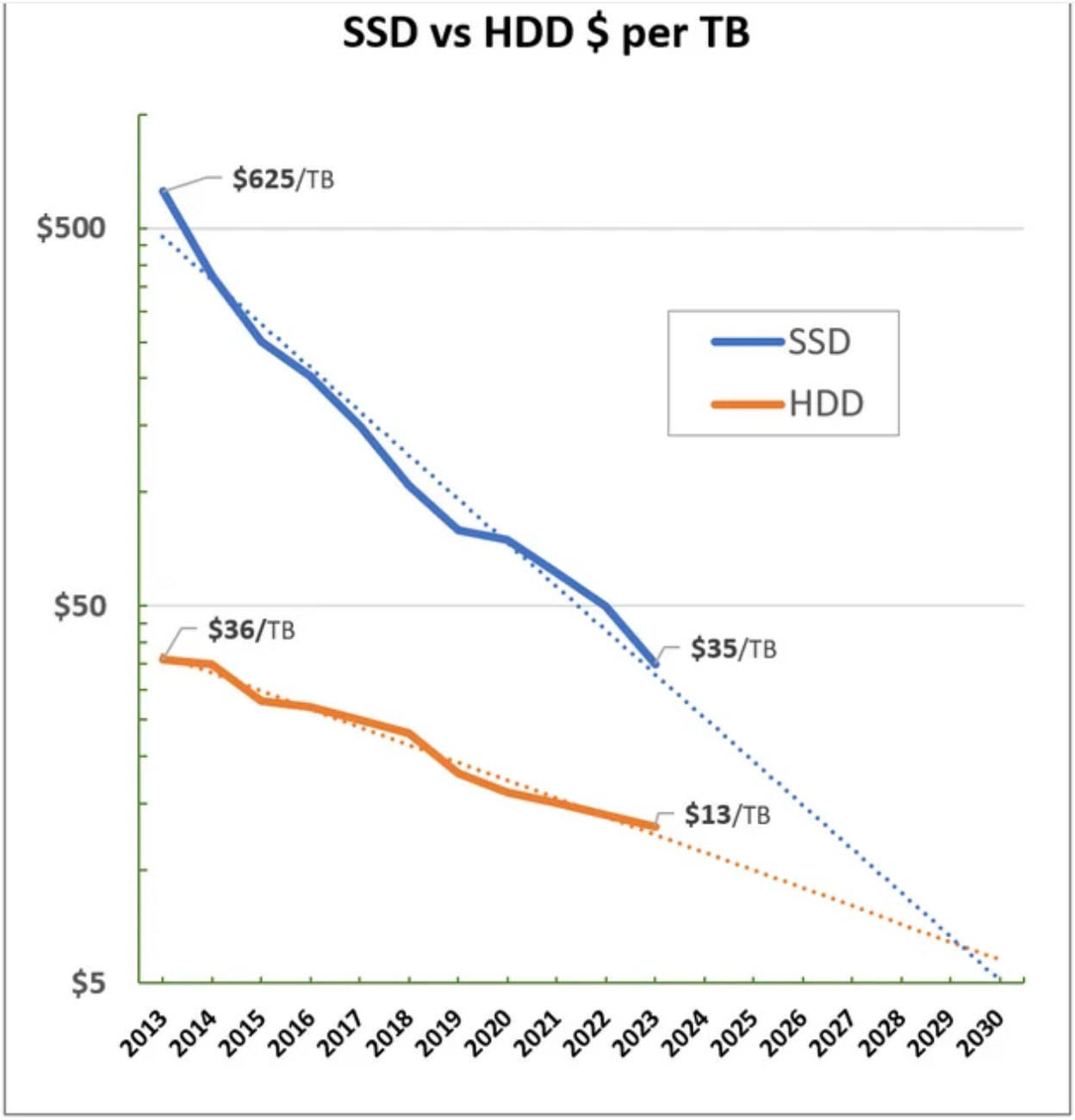
Posts Wiki

Posted by u/CokeZoro 4 months ago

722

As requested: An improved chart of SSD vs HDD historical and projected prices. SSD to reach price parity by 2030 if current trend continue.

Discussion



Sort By: Best | Search comments

JapanFreak7 · 4 mo. ago
16.3TB

the dream

NAS full of SSD

293 Reply Share •••

humanclock · 4 mo. ago

NASSSD

Now Always Save Some Data

(it's late and the jokes are wearing thin)

70 Reply Share •••

lenzflare · 4 mo. ago

nasty

16 Reply Share •••

Freed_lab_rat · 4 mo. ago

Ms. Jackson if you're NASSSD

9 Reply Share •••

1 more reply

Opheltes · 4 mo. ago
5 PB (supercomputer guy)

So back in 2012-2015, I worked for a company that built storage systems for supercomputers. It was perfectly ordinary for us to ship two, three, four enclosures each of which had 84 HDDs.

I swear that one system probably paid all our salaries for a year.

26 Reply Share •••

Comment deleted by user · 4 mo. ago

glhughes · 4 mo. ago
80TB

These are SATA-3 SSDs in a RAID10 array. I've seen read throughput up to 6.2 GB/s and write up to 3.0 GB/s. At this level of bandwidth you need to think about how your PCI-E lanes are allocated.

https://i.imgur.com/lGIkSf7.png

3 Reply Share •••

linef4ult · 4 mo. ago
58TB Raw UnRaid

Was thinking last week if I won a modest sum on the lotto I'd buy a 2.5" x 24 and fill it with 4TB SSDs or bigger. Wouldn't be huge, SATA would be fine, but overall reactivity would be more than one home could ever need.

2 Reply Share •••

Caspid · 4 mo. ago

M.2 SSDs, preferably

3 Reply Share •••

Belgarion0 · 4 mo. ago

Why not U.2 so you can hotswap?

4 Reply Share •••

sekh60 · 4 mo. ago
Ceph 302 TiB Raw

U.3 is current, but already probably going to be passed out in favor of edsff drives. With current e1.s drives you can fit almost a PB of flash in 1U.

3 Reply Share •••

3 more replies

deathbat117 · 4 mo. ago

Gonna be useless after several rewrites

kachunkachunk · 4 mo. ago · *edited 4 mo. ago*

176TB

Yeah, home users aren't really writing that much. If you're in the enterprise space, you're not using consumer disks with low endurance. If you're using them for cache - well, don't, and get proper drives rated for that.

Endurance for 4TB consumer drives like the Crucial MX500 averages about ~0.3 Drive Writes Per Day (DWPD) for five years (the warranty period; could run longer, even). That's ~1.2TB per day, *per SSD*. If your NAS is comprised of four or eight bays, well, multiply that accordingly, though *sure* some of that may be eaten up with parity if that's your bag.

Still, if you had eight 4TB SSDs, that's about 9.6TB/day. Most folks aren't sustaining those amounts of writes for long periods of time, let alone days or years at a time. It's more likely to be heavy during initial loading of data, but then it moves to predominantly read-oriented workloads afterwards. You'd have to basically write a third of the NAS every day, from thereon. In more relative terms, though, that's "only" 111MB/s host writes for 24 hours to meet 8x4TB drives' DWPD rating. So, with consumer gear, you're indeed wanting to get to a more read-oriented workload before terribly long.

If endurance is a concern, you can always go with medium endurance SSDs rated at 1 DWPD (or better). Then you have to rewrite the *whole NAS* multiple times a day, for five years (~370MB/s host writes, permanently). Most folks won't even have the network bandwidth to pull it off, so it'd have to be a local workload that's just unnecessarily hammering the disks for no intelligent reason.

In my case, I have eight 8TB 3DWPD disks in a NAS - it'd require ~16Gbps of network writes or a constant 2.2GB/s write workload for five years to meet DWPD ratings. These things are going to outlast the useful capacity of the disks, if not the NAS itself, most likely. I do run VMs and more write-intensive workloads, so 1-3 is about right for my needs. Higher endurance is possible.

56 Reply Share ···

wokkieman · 4 mo. ago

As long as that problem exists it's all about not overwriting to many times. Incremental backups? Media Library which doesnt update with every new quality release? Linux version XYZ etc

When used as a shared drive, make good backups and be prepared to loose (+ restore) the shared drive

13 Reply Share ···

Aren't we up to several dozen rewrites at this point?

12 Reply Share •••

reercalium2 · 4 mo. ago

100TB

Down to

1 Reply Share •••

2 more replies

[deleted] · 4 mo. ago

Yep. And worse than the sometimes advertised 300 Rewrites is that SSDs also lose performance quickly. With insufficient overprovisioning (which is usually the case with the average Joe who keeps filling his disks until kingdom comes), the question of data loss is not if but when.

1 Reply Share •••

1 more reply

StabilityFetish · 4 mo. ago

Not for unraid lol

-2 Reply Share •••

WhittledWhale · 4 mo. ago

SSDs work fine in unraid now. Stop perpetuating old, outdated information.

20 Reply Share •••

Comment deleted by user · 4 mo. ago

CokeZoro OP · 4 mo. ago

A few things I found interesting:

- In 2013, SSD were 17x more expensive than HDD per TB. That ratio is now ~3x.
- The $/TB of SSD today = the $/TB of HDD 10 years ago.
- Since 2013, HDD became x3 cheaper per TB, while SSD became 18x.

92 Reply Share •••

Just some extra data:

In mid 2011 - before the floods - Samsung 2TB HDDs were on offer at $69.99.

https://hardforum.com/threads/warm-samsung-f4-2tb-69-99-free-ship-newegg.1626776/#post-1037586461

In fact 2TB could be had as low as 58.99 with discount codes

https://forums.redflagdeals.com/newegg-11-off-any-order-over-55-a-1074795/7/?rfd_sk=s#p13400438

So $30/TB in 2011 for new bare disks

Then the floods hit and things went crazy.

24 Reply Share •••

0xd00d · 4 mo. ago

I got 3 of these Samsung 2TB back in the day since they were such a good deal, and they are still going strong! I had one more 2TB Hitachi I got at the time to round it out to 4 drives, but that one's started throwing errors.

6 Reply Share •••

1 more reply

Comment deleted by user · 4 mo. ago

jakuri69 · 4 mo. ago

Nope, not true.

In 2013, 1TB Crucial M500 SSD was 600$ (source: https://www.anandtech.com/show/7173/samsung-ssd-840-evo-review-120gb-250gb-500gb-750gb-1tb-models-tested), while a 4TB WD Red HDD was 210$ (source: https://techreport.com/review/wds-red-4tb-hard-drive-reviewed/). That's 11.4x price difference, not 17x.

You're cherrypicking SSD/HDD sizes to fit your narrative that SSDs were 17x more expensive in the past.

-1 Reply Share •••

TryallAllombria · 4 mo. ago

Wait, SSD are now 1TB for 35$?! WHERE ?

pigeon768 · 4 mo. ago

1TB for $43, 2TB for $76: ($38/TB) https://www.amazon.com/Crucial-PCIe-NAND-NVMe-3500MB/dp/B0B25LZGGW/

58 Reply Share •••

TryallAllombria · 4 mo. ago

that's awesome :o I bought my 1TB M.2 SSD more than 100$ last time I built my PC. I might be able to upgrade some laptops of my relatives that struggle with 250GB SSD.

23 Reply Share •••

EsotericJahanism_ · 4 mo. ago

Gen 3 and Sata have gotten dirt cheap hell even some HMB lower end gen 4 drives are only like $40 for 1 TB like the Kingston Nv2

3 Reply Share •••

8 more replies

ClearSign6606 · 4 mo. ago

Also 960GB for 36

https://www.amazon.com/Lexar-NQ100-960GB-Internal-LNQ100X960G-RNNNU/dp/B09329T7FL/

SSDs were a few dollars cheaper in the last few months due to oversupply. There was quite a few deals around $35/TB. They're going up now as vendors cut production but no doubt we will see some $35/TB deals again on Black Friday.

2 Reply Share •••

knox902 · 4 mo. ago

$43usd x 1.38 = $59.34cad

Checks Amazon.ca, $74.97.

I love paying more for the exact same thing.

2 Reply Share •••

kmouratidis · 4 mo. ago

I killed a two-headed ZFSSA, twice

21458064

- https://www.digitec.ch/en/s1/product/samsung-870-qvo-8000-gb-25-ssd-13388185

But I'll assume these models are cheaper in other countries, maybe in US / CN / TW / KR?

5 Reply Share •••

halotechnology · 4 mo. ago

Don't worry there are going expensive soon this crash is about to end

3 Reply Share •••

sparkyhodgo · 4 mo. ago

jammsession · 4 mo. ago

> SSD to reach price parity by 2030 if the current trend continue.

But it probably won't continue.

New techniques like HAMR Gen 2 will further drop the price for HDDs.

While for SSDs Samsung just recently announced to increase prices by 20%.

Also interesting would be a chart without QLC. I don't doubt that prices came down, but for high quality NAND it was not that extreme.

40 Reply Share •••

ClearSign6606 · 4 mo. ago

Since 2011 there has been multiple new technologies for HDD. SMR, Helium, TDMR.

They have enabled larger disks, but they don't drop the price significantly. Since 2011 we have gone from $30/TB to $13/TB. It's a steady slope, there are no sudden drops when new technology is introduced. 2.3x reduction in price/GB in 12 years.

So there is no reason to assume HAMR will suddenly change the price of HDDs

(Some claim $10/TB today but I think that refers to refurbished disks ? I am open to correction)

14 Reply Share •••

Good points. Without some new breakthrough tech for SSD, I don't think the trend will continue. QLC is already pushing the SSD's performance limits with sequential write speeds slower than HDD.

2 Reply Share •••

nikongmer · 4 mo. ago

confirmed +20% *consecutively* ***for the next 2 quarters***! so 40% by q2 and who knows after.

3 Reply Share •••

JPWRana · 4 mo. ago

Isn't the amount of layers for SSD drives increasing more and more? Shouldn't that mean cheaper SSDs in the future?

1 Reply Share •••

1 more reply

1 more reply

heart_under_blade · 4 mo. ago

right when my last warranty runs out

ye, perfect

but like i still need density, i only have so many bays

18 Reply Share •••

danieltien · 4 mo. ago

So according to the trendlines, SSDs should be free by about 2035. Woohoo!

225 Reply Share •••

Carnildo · 4 mo. ago

The graph's a log-linear scale, so it'll never hit zero.

97 Reply Share •••

danieltien · 4 mo. ago

26 Reply Share ···

GroundStateGecko · 4 mo. ago

Selling costs are per unit, this graph is per TB. So they'll just sell larger disks.

27 Reply Share ···

danieltien · 4 mo. ago

They'll keep increasing the density on magnetic hard drives, but there's a theoretical limit they're already bumping up against, and they're going to have to resort to exotic things like heating the platter with microwaves (they're doing this with lasers now) to increase areal density--which means cost/TB are going to start to plateau.

With NAND flash, we're seeing remarkable advances in density recently because they're stacking hundreds of layers onto a single chip. In some ways, we've moved backwards because there are serious disadvantages to QLC and TLC vs MLC NAND, but you make up for it because of the added density and by upping the caching. But even the engineers are seeing the limitations of 3D NAND already and are searching for new jumping off points. Granted there's a lot more runway and time left, but at some point too, what we conceive today as SSDs will end their run and we'll be looking at something quite different for storage.

19 Reply Share ···

n3rt46 · 4 mo. ago

Optane could have been an interesting replacement for NAND flash if they had marketed it differently. Far higher endurance and better latency. It's too bad it was too expensive to make for Intel/Micron to keep it around.

6 Reply Share ···

danieltien · 4 mo. ago

Optane was great--I even have one in my NAS as the boot device. Sucks when both neglectful parents are having crises of their own.

A while back, HP was saying memristors were the revolutionary way forward, but that kinda went nowhere. Maybe it'll come back when it's better baked.

5 Reply Share ···

1 more reply

Is-Not-El · 4 mo. ago

To The Moon! Wait, that was another scam, sorry 😂

23 Reply Share •••

Solkre · 4 mo. ago

That scam paid off my house lol.

-2 Reply Share •••

reercalium2 · 4 mo. ago
100TB

Nice. But not for the people who paid for your house.

5 Reply Share •••

wokkieman · 4 mo. ago

Comment deleted by user · 4 mo. ago

CarlosT8020 · 4 mo. ago

I remember buying my first SSD in 2012, it was a 128GB Kingston and I paid 120€, so around 1000€/TB. I imagine these price numbers are from the US? In Europe I think it's a bit more expensive...

16 Reply Share •••

Hamilton950B · 4 mo. ago
2TB

The very top of the green line on the Y axis is $1000/TB. If you extrapolate the solid blue line to the left I would believe it could be $1000/TB at the beginning of 2012.

3 Reply Share •••

orbitaldan · 4 mo. ago
4.3/13.6TB (3FT)

And at around $6-7/TB. Sweet!

9 Reply Share •••

I just need 8tbs to come down to 150 and I'll be so happy.

10 Reply Share •••

Dish_Melodic · 4 mo. ago

7.68TB is about $560 now. Kingston DC600. Enterprise grade. For consumer it may be a lot lesss.

2 Reply Share •••

opi098514 · 4 mo. ago

Consumer grade is still looking around 300 bucks

3 Reply Share •••

damocles_paw · 4 mo. ago

That might never happen, due to inflation.

3 Reply Share •••

InMooseWeTrust · 3 mo. ago
100TB LTO-6

If 8TB goes down to under $200 I'll buy one for my PS4.

1 Reply Share •••

seeriktus · 4 mo. ago
24TB :)

So convergence in 2029, we have just over 5 years until SSDs are cheaper.

8 Reply Share •••

tes_kitty · 4 mo. ago

Assuming that there are no physical limitations for Flash making themselves known in the meantime.

14 Reply Share •••

Comment deleted by user · 4 mo. ago

WikiBox · 4 mo. ago
Need more

IndyMLVC · 4 mo. ago

We won't need more than 4k

6 Reply Share •••

savvymcsavvington · 4 mo. ago

Do you know where you are?! Datahoarder, bring on 8K!

9 Reply Share •••

IndyMLVC · 4 mo. ago

There's no reason for it. There's not much data you can mine from film beyond 4k

4 Reply Share •••

savvymcsavvington · 4 mo. ago

Probably depends a bit on your setup, how big is your tv/projector etc

5 Reply Share •••

IndyMLVC · 4 mo. ago

There's a finite amount of detail on film. That's just fact

0 Reply Share •••

savvymcsavvington · 4 mo. ago

Totally depends how it was recorded, not everything is filmed on actual film these days

0 Reply Share •••

IndyMLVC · 4 mo. ago

I'm fully aware. But who cares about film circa 2023? The quality is shit and everything is finished at 4k

-2 Reply Share •••

InMooseWeTrust · 3 mo. ago

100TB LTO-6

3 Reply Share ...

1 more reply

mynewaccount5 · 4 mo. ago

11TB

Hope 4k TV shows become more common.

1 Reply Share ...

simurg3 · 4 mo. ago

It will happen faster. In 2 years we will see hard drive manufacturers not being able reduce prices as they start to loose volume. cold storage is the primary scenario for disks. Even if something magical happens and a new technology doubles the platter density, I/O bottleneck is still there.

3 Reply Share ...

dwkindig · 4 mo. ago

I thought I was hot shit when I could afford a 64GB Samsung SSD in 2008.

4 Reply Share ...

BadePapaa · 4 mo. ago

This Data Is Misleading to some extent

13 Reply Share ...

Comment deleted by user · 4 mo. ago

Dusan117 · 4 mo. ago

I dont think it would fall at this rate. That ssd slope could decrease and might never touch hhd prices at all

4 Reply Share ...

Skeeter1020 · 4 mo. ago

They will plateau at some point. Otherwise SSDs will be free by 2035, and in the 2040s we will be paid for buying them.

CokeZoro OP · 4 mo. ago · *edited 4 mo. ago*

There have been a few comments similar to yours. I thought they were just making a little joke. But it seems they genuinely don't understand logarithmic graphs. How could someone be such a nerd that they are a member of this sub, and yet have such poor data literacy!!

5 Reply Share •••

beijingspacetech · 4 mo. ago

Nitpicking other's charts is the epitome of data literacy lol, and that's not sarcasm.

I'll explain a bit. Charts both reduce the complexity of data as well as add information. For example, I don't think either of the comments you mention realize that the plot's Y0 was actually $5 and not 0. It was a choice you or the library (or excel?) made and has an impact on the people glancing at the chart. Your trend lines extended to the X=2030 to prove your point, and this was information that you added to the data. It's good, that addition of your opinion or forecast is what makes the post interesting.

Anyways, each choice made for readability, presentation, simplicity etc all have consequences and data monkeys love to gripe about them. Just check r/dataisbeautiful the comments are 99% complaints.

3 Reply Share •••

CokeZoro OP · 4 mo. ago

You, of course, would be aware that it is mathematically impossible to have a 0-value on the y-axis in a logarithmic chart such as this.

2 Reply Share •••

beijingspacetech · 4 mo. ago

I get what you are saying, it's mathematically not one of the values that was in your dataset (which is good!), but that being said, you could have had much smaller numbers approaching 0.

Plotting libraries for readability and to avoid showing 0.00001 or 10^-99 will allow you to show y=0. Plotting libraries are very good at helping with rounding and generalization to help present data for quick consumption. Here are some of the python matplotlib log scale axis examples: https://matplotlib.org/stable/users/explain/axes/axes_scales.html

As you see in matplotlib, a number of the log scale plots show 0 on the Y axis. You can even have negative numbers.

1 more reply

Skeeter1020 · 4 mo. ago

How can someone be oblivious to sarcasm.

-1 Reply Share •••

DataExpunged365 · 4 mo. ago

“Sarcasm” sure buddy.

1 Reply Share •••

Skeeter1020 · 4 mo. ago

So you think I genuinely believe SSDs will become free? Lol

0 Reply Share •••

DataExpunged365 · 4 mo. ago

I just think you were ignorant and trying to ridicule OP, but when you were shown otherwise, tried playing it off.

1 Reply Share •••

2 more replies

Constellation16 · 4 mo. ago · *edited 4 mo. ago*

It certainly depends how the scaling of the two technologies will continue, eg higher layer counts and bits per cells vs HAMR and BPM, but I don't see hard drive being that relevant anymore in the datacenter space in the mid 2030s. It already is pretty much only relevant there anymore, while flash is used in every device and therefor has much higher volume and incentive for R&D. SSDs also doesn't have to hit price parity for the total cost of ownership to be better. They have better IOPS, better density, immune to vibrations, better efficiency and no constant idle power usage.

2 Reply Share •••

mark-haus · 4 mo. ago

Honestly, I hate hard drives. They need much larger PSUs to deal with the spin up current. They're big and apart from turn key NAS like QNAP or Sinology it's really hard to make small and well put together NASes where you can install your own OS. That's not the case for SSDs. It's super easy to make a small and neat NAS using mini pcs or 1L PCs.

jakuri69 · 4 mo. ago

Again, a meaningless chart since you didn't even explain your methodology of determining the price/TB.

2 Reply Share •••

Xerain0x009999 · 4 mo. ago

Even if the price per tb equalizes, won't the total cost of ownership of hdd still be lower over a long enough period of time because they can last 2-3x as long?

5 Reply Share •••

ben7337 · 4 mo. ago

HDDs don't necessarily last longer, and SSD that's storing data and not writing over stuff constantly can last a very long time in theory. Also HDDs draw more power from what I understand, or will in the long run, so that needs to be accounted for too.

20 Reply Share •••

Xerain0x009999 · 4 mo. ago

Thanks, those are the kinds of things I was wondering about.

7 Reply Share •••

1 more reply

tes_kitty · 4 mo. ago

> SSD that's storing data and not writing over stuff constantly can last a very long time in theory.

In reality there is read disturbance and the problem with storing 4 Bit (16 voltage levels) in a cell with QLC flash.

7 Reply Share •••

ben7337 · 4 mo. ago

Any info on this? I can't seem to find any data on how much of an issue it is, or how it would impact long term storage on an SSD.

2 Reply Share •••

Googling for 'read disturbance ssd' will get you a load of links.

And QLC should be obvious. The margin in which a voltage level can be properly detected gets smaller the more bits you cram into a single cell. And the insulation around the floating gate in a flash cell is not perfect and gets less so with every erase/write cycle. So over time the level in the cell will decrease and the cell (the whole block really) needs to be erased and rewritten. The controller will have to run tests on all cells periodically and rewrite those that get close to a point where the data changes.

But if you read up on it, you'll find that QLC has less write cycles than SLC, MLC and TLC flash.

I don't trust SSDs for archival storage yet.

4 Reply Share •••

ben7337 · 4 mo. ago

Logically what you say makes sense but while I see the concept on Google I can't find any info about prevalence of the issue making claims like, qlc ssds can't store data more than 1 year, 5 years, 10 years, etc. before it becomes an issue.

2 Reply Share •••

tes_kitty · 4 mo. ago

I read an article months ago about it, but can't find it again.

So maybe they can get that under control, but since QLC is still rather new, I let others take the risk.

But something that is known, an unpowered SSD will retain data longer at lower temperatures. So if you need to store an SSD unpowered and want the data to be there when you take it out of storage, keep it in a cool, dry place.

2 Reply Share •••

captain_awesomesauce · 4 mo. ago

If we're going to talk long term the power savings need to be included too. And as others said, SSDS will last as long as hdd when powered on. Powered off at high temps is bad for ssd.

4 Reply Share •••

All of my HDD have problem within the first or two years of use. My old cheap ass ssd never had any issues.

Actually, it seems my ssd and nvme is going to outlast my hdd. The only exception is HGST/Hitachi

2 Reply Share •••

CokeZoro OP · 4 mo. ago

This article may interest you.

-2 Reply Share •••

firedrakes · 4 mo. ago

156 tb raw

that based on a bad data set.

bb research . not actual research is done.

other then a fail list...

what work loads, consumer drives, batch manf ,etc.

wait on batch amount is done... nothing else done with research..

Terrible data points from them

-1 Reply Share •••

pirajacinto · 4 mo. ago

If these trends continue.....**AYEEEEEEE!!**

2 Reply Share •••

BastetFurry · 4 mo. ago

Unless you need to buy a "non-standard" format, like a M.2 2230. Ask me how i know...

2 Reply Share •••

DataExpunged365 · 4 mo. ago

2 Reply Share ···

jY5zD13HbVTYz · 4 mo. ago

Upgrading memory in Steamdecks is a common use.

1 Reply Share ···

BastetFurry · 4 mo. ago

I use my Steamdeck as my battlestation running Ubuntu and my fiancee got me said 2 TB disk. He said that as this is my main rig, an upgrade is more than OK, even if the per GB price is double than normal for that form factor.

1 Reply Share ···

DataExpunged365 · 4 mo. ago

That's awesome dude. Hope ssds keep going down in price so you could have more storage.

5 Reply Share ···

1 more reply

cobaltorange · 2 mo. ago

How do you know?

1 Reply Share ···

1 more reply

boredbondi · 4 mo. ago

78TB RAW

The formatting of this chart is impeccable. So rarely do I see this.

2 Reply Share ···

CokeZoro OP · 4 mo. ago

You're making me blush.

3 Reply Share ···

sanderhuisman · 4 mo. ago

Well, I for one, hate the ticks! What is the tick just below 500? 450? Weird as hell ticks...

Comment deleted by user · 4 mo. ago

OkayGravity · 4 mo. ago

The blue line should be exponential and then linearize.

3 Reply Share •••

captain_awesomesauce · 4 mo. ago

Y axis is log already so a linear line is exponential data

9 Reply Share •••

OkayGravity · 4 mo. ago

Wow. I missed that

4 Reply Share •••

opi098514 · 4 mo. ago

Nice. Hard drives will be free soon.

1 Reply Share •••

TaxOwlbear · 4 mo. ago

I'll wait until 2040 when retailers pay me to take their drives.

1 Reply Share •••

Hot-Touch7207 · 4 mo. ago

Damn dude that scale doesn't represent how crazy the ssd catchup is

1 Reply Share •••

yabucek · 4 mo. ago

Where are you guys finding these 35/TB units? Around me they're still about 100 per TB, maybe down to like ~70 for the really cheap ones.

I will get up and run to the store that'll sell me 16TB of SSD storage for my NAS under 600$. And it's dark & raining outside.

Comment deleted by user · 4 mo. ago

rudeer_poke · 4 mo. ago

not true on so many levels.

firstly, the price drop will never be linear. NAND manufacturers are actively working on decreasing production to push up prices and also new manufacturing processes are getting increasingly more expensive, natural resources like high-quality silicon getting more and more scarce.

secondly, those HDD prices are plain wrong. chepeast in 2023 is around 20/TB (SMR Barracude compute), with better drives going up to 30 €/TB.

0 Reply Share ···

1 more reply

Comment removed by moderator · 4 mo. ago

McFistPunch · 4 mo. ago

I don't know why this is done with a linear fit cuz these kind of curves will probably level out at some point with diminishing return

0 Reply Share ···

CokeZoro OP · 4 mo. ago

Yes, which is why its an exponential. This is a logarithmic graph.

1 Reply Share ···

1 more reply

werthobakew · 4 mo. ago

Good example of bad data visualization. There was no need to use a log scale for the y-axis.

0 Reply Share ···

CokeZoro OP · 4 mo. ago

lol.

woolharbor · 4 mo. ago

SSD to reach $0 by 2031 if current trend continue. Nice.

That's how it works, right?

-2 Reply Share •••

CokeZoro OP · 4 mo. ago

It would be slightly less than $5/TB in 2031, if the current trend continues.

1 Reply Share •••

Dish_Melodic · 4 mo. ago

If this were true, Short HDD stock such as STX, WDC - you will make plenty of money.

-1 Reply Share •••

CokeZoro OP · 4 mo. ago

I wouldn't bet against these companies. They have managed to stay on top of one of the most ruthless sectors of the technology industry for a reason. Maybe they fold, but maybe they lead the next big storage revolution.

2 Reply Share •••

Comment deleted by user · 4 mo. ago

Antar3s86 · 4 mo. ago

Nice! Could you also share the slopes of the lines?

1 Reply Share •••

neveler310 · 4 mo. ago

It's taking long enough

1 Reply Share •••

TheFumingatzor · 4 mo. ago

1 Reply Share ...

Primary_Olive_5444 · 4 mo. ago · *edited 3 mo. ago*

If anyone has logical/economical insights into Seagate strategic roadmap please share that.Seagate is the one of the big players in the HDD space. I'm sure the trend of declining NAND SSD is on their managements's radar.But unlike Western Digital which acquired Sandisk (doing a spinoff in 2024) and tried to merge with Kioxia compete with SK Hynix/Samsung/Micron. It has stayed heavily focused on just HDD sales to hyperscaler.

In the cloud/hyperscaler business what are the areas apart from cold storage would HDD be more suited over SSD?

1 Reply Share ...

1 more reply

budoucnost · 4 mo. ago

A 1TB ssd used to cose $625 just 10 years ago?!?!?

1 Reply Share ...

CokeZoro **OP** · 4 mo. ago

Actually you'd be looking at around $1k for a 1TB SSD in 2013. The most affordable $/TB SSDs in 2013 were 128GB / 256GB, which is where that $625/TB figure comes from.

2 Reply Share ...

1 more reply

Phreakiture · 4 mo. ago
25 TB Linux MD RAID 5

This is cool.

I would like to see one more line on the chart, which is the ratio of SSD to HDD. I'd been internalizing it as ~6 for a long-ass time, but it looks like it's closer to 3 now.

1 Reply Share ...

marty575 · 4 mo. ago

glorious

1 Reply Share

1 more reply

GroundbreakingFall6 · 4 mo. ago

Let's goooooo

1 Reply Share

Minimum-Minute-4824 · 4 mo. ago

Even when Ssds are better by.even when ssds are better per terabyte, slower ssds will still be a better value.

1 Reply Share

Captain_Starkiller · 4 mo. ago

Question to fellow hoarders: Will you really trust SSDs to hold your data vs mechanical drives?

1 Reply Share

jianh1989 · 4 mo. ago

This is tough to predict. Another round of pandemic caused by that stupid country (whether deliberate or accidental) and you can bin this chart.

1 Reply Share

electricmaster23 · 4 mo. ago

I've done a bit of research. If SSDs become cheaper, what advantages would SSD have over HDD, if any? According to my research, SSDs are smaller, faster, last longer, and more reliable, so price per byte really seems to be the only thing going for them. Feel free to correct me, as I don't claim to be an expert on this.

1 Reply Share

Gradius2 · 4 mo. ago

654354365476435 · 4 mo. ago

Double the size only twice from 8 to 32 and keep current prices like (32 would cost as much as 8 now) and I will replace every single drive I have.

Its not that far fetch, ssd double in size in regular intervals but jump to 16tb is overdue for sure

1 Reply Share ···

JoostVisser · 4 mo. ago

Don't SSD's last significantly longer as well? On average how many hard drives will have been replaced before the first SSD fails? Gotta take that into account too

1 Reply Share ···

TorrentplsZOMG · 4 mo. ago

It's crazy how much prices have gone down over the years!

1 Reply Share ···

coolraul07 · 4 mo. ago

Love the graphs but methinks it might converge even sooner. Think about it. For your "average" use case, if the SSD-HDD $/TB ratio was only 2x-3x, wouldn't it temp you to just bite the bullet and get the SSD? As that thought propagates throughout the user base, the increased SSD demand could cause a downward shift on the SSD $ curve.

1 Reply Share ···

lezboyd · 4 mo. ago

2030! Damn, that's far!

1 Reply Share ···

Adorable_Peanut6334 · 3 mo. ago

so, is it better to wait for next year (2024) to upgrading nvme storage then ?

katedances · 2 mo. ago

I'd love a $280 8TB SSD. Does that really exist? If so, link?

1 **Reply** **Share** •••

4 more replies

Comment deleted by user · 1 mo. ago