

How long is the lifespan of an AI server



Overview

How long does an AI server live?

Hyperscaler depreciation, by the. Microsoft, Amazon, Alphabet, Meta and Oracle all stretched server useful lives toward.

Key Takeaways

AI servers typically have a physical lifespan of 1–3 years, though major tech companies often depreciate them over 5–6 years for accounting purposes. Physical Lifespan

The actual useful life of AI servers and GPUs is generally shorter than traditional servers due to high computational loads, thermal stress, and rapid technological obsolescence. Analysts estimate that GPUs running at 60–70% utilization for AI workloads survive 1–2 years on average, with a maximum of three years under heavy use . Technological advancements, such as Nvidia's newer chips offering 4–5x faster inference than older models, also drive early replacement, as older hardware becomes economically obsolete even if still functional .

Accounting and Depreciation Lifespan



Despite the shorter physical lifespan, hyperscalers like Microsoft, Amazon, Google, Meta, and Oracle often spread the depreciation of AI servers over 5–6 years. This longer accounting life reduces annual depreciation expenses and temporarily boosts reported profits, even though the hardware may need replacement sooner. For example, Amazon initially extended server lifespans to six years but later shortened a subset back to five years, citing the rapid pace of AI hardware turnover.

Implications

- Operational planning: Companies must anticipate frequent hardware refresh cycles to maintain AI performance.
- Financial reporting: The discrepancy between physical and accounting lifespans can create a temporary financial advantage but may mask true replacement costs.
- Cloud economics: Users paying for AI inference may not see cost reductions proportional to the extended accounting lifespan, as actual hardware replacement occurs sooner.

Summary

In practice, AI servers last 1–3 years physically, primarily due to wear and rapid obsolescence, while financial depreciation schedules extend to 5–6 years. This gap reflects both the intense demands of AI workloads and the accounting strategies of major tech companies. Organizations planning AI infrastructure should consider both the technical lifespan and the economic depreciation when budgeting and scheduling upgrades.

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