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TRIPLING COMPUTE POWER WHILE CUTTING COSTS

BACKGROUND

For decades, continual CPU performance improvements made frequent server refreshes in data centres commonplace. The slowdown of Moore's Law, however, means CPU-intensive, transaction-based workloads have seen less incremental efficiency improvements in recent years, yet the current industry practice is still to refresh hardware every 3-5 years.

A fintech company recognised this market inefficiency and looked for alternatives. Moving its operations entirely to the cloud was not viable due to prohibitive hosting costs and data regulation reasons. Instead, they opted for a hybrid solution via an internal cloud; to do this, their server estate required optimisation.

HOW DID WE HELP?

In a proof of concept, we conducted an assessment and gave two sets of hardware recommendations: one optimised for energy savings and the other for cost.

For Energy:

- DL365 G10 with AMD Epyc 7542 CPU and 1TB Ram

For Total Cost of Ownership:

- BL460C G8 with Intel Xeon E5-2695v2 CPU and 384GB Ram

The customer then ran real-life tests to validate these figures. Using representative trading strategies with fixed datasets, they measured the completion time for both options. The results from these internal tests were in line with our recommendations. Although the energy-saving solution was 22% faster and 37% more energy efficient, the cost-saving alternative delivered 3.5-times the CPU performance and 4-times RAM performance for the same cost, once adjusting Threads and RAM to the budget.

A key benefit of the energy-saving solution is that it would require fewer servers to complete the workloads, but this would make the up-front cost more than twice as high. A knock-on impact of this is increased scope 3 emissions from the embodied carbon in the new hardware.

WHAT WAS THE IMPACT?

On the back of these findings, the customer followed the cost-saving recommendation. They used refurbished hardware to do so, which additionally reduced the scope 3 emissions further. The end result saw their available compute power triple with only a 20% increase in energy consumption and no increase in space requirements. As a result, their estate was almost 2.5x more efficient per server.

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