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Enterprise and Cloud Storage

Why is Green IT So Important and How Does Storage Help?

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Biography

Eric Herzog is the Chief Marketing Officer at Infinidat (https://www.infinidat.com). Prior to joining Infinidat, Herzog was Chief Marketing Office and Vice President of Global Storage Channels at IBM Storage Solutions.

His executive leadership experience also includes: CMO and Senior VP of Alliances for all-flash storage provider Violin Memory, and Senior Vice President of Product Management and Product Marketing for EMC's Enterprise & Mid-range Systems Division.

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Abstract

Minimizing energy consumption, lowering carbon emissions, and promoting sustainable disposal of technology products means that Green IT is an essential component of an enterprise IT strategy, because it prioritizes practices and technologies that target reducing the environmental impact of IT operations, whilst also saving on operational expenses. By adopting Green IT practices, enterprises can not only contribute to a more sustainable future but will also reduce their operational costs (OpEx). In this article, the author will illustrate how, by adopting enterprise storage solutions optimized for environmental efficiency, enterprises will get a head start on best practice.

Introduction

Interest among enterprises in Green IT has grown significantly in recent years, driven by environmental concerns, cost savings and regulatory pressures. This transition to Green IT is crucial because the environmental impact of data centres and IT infrastructure is huge and growing rapidly, especially given the interest in AI applications. At present, data centres worldwide consume 1-2% of overall power, but this percentage is projected to rise to 3-4% by the end of the decade, according to Goldman Sachs[1]. It emphasises the very urgent need for sustainable IT practices. It's especially important in tech-heavy industries like banking, finance and telecommunications.

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Recent research[2] conducted by IDC in 2024 indicates that increased power consumption by data centres was largely driven by the surge in AI workloads and edge computing. During the period, 2025 to 2028, electricity consumption is expected to more than double, with a CAGR of 19.5%, reaching 857 Terawatt hours (TWh) in 2028. In the AI data centre sector this rate is even higher, with energy consumption rates forecast to grow at a CAGR of 44.7%, reaching 146.2 TWh by 2027. The reason for this disparity this is very clear. On average, a ChatGPT query needs nearly ten times as much electricity to process as a Google search, according to research[1] published by Goldman Sachs. Plus, AI models often require constant training and fine-tuning, leading to prolonged periods of high energy consumption.

So, what should green conscious buyers be looking for when they invest in enterprise storage?

Storage arrays designed with sustainability in mind

One of the best ways that an enterprise can cut energy consumption within its storage infrastructure is to consolidate the number of arrays being used. If you are wondering how to identify what 'too many arrays' looks like, an enterprise usually finds itself ready for storage consolidation when it's experiencing storage array sprawl. This is an overloaded storage infrastructure caused by years of bringing in a different array for one or two workloads at a time, in a piecemeal fashion.

By consolidating, enterprises can benefit in three key ways:

- Access to the latest power-efficient hardware and software designed to minimize energy consumption.
- An opportunity to make ongoing energy savings through telemetry-based optimization. This provides real-time power and cooling consumption data, for continuous power usage monitoring and optimization.
- All-round reduced footprint, because consolidating multiple storage arrays into a single, more efficient platform cuts down on the floor space requirements too.

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For instance, a financial services company could replace over 288 floor tiles of legacy arrays with 61 floor tiles of advanced arrays optimized for energy efficiency, resulting in a reduction of over 4X in data centre floor space and 62% reduction in total power consumption.

Vendor commitment to operational decarbonization

Perhaps the simplest way that enterprise buyers can assure themselves they are making inroads with Green IT programmes is to opt for vendors that are taking this priority seriously inside their own organisations. There are three key ways vendors can be signalling to procurement heads that their storage solutions meet these requirements.

First, through integrated ESG (Environmental, Social and Governance) reporting. Vendors that are proactive in this space will be 'walking the talk', incorporating ESG principles into every aspect of their operations, from supply chain management to technology development.

Secondly, through a documented commitment to reducing Scope 3 Emissions. These are the indirect emissions within an enterprise's total carbon footprint that exist in the upstream and downstream value chain. Controlling Scope 3 emissions is particularly important, because they typically make up the largest portion of a company's carbon footprint, often accounting for more than 70% of total emissions. As a company, we are proud to have achieved a 41% reduction in total carbon footprint across our own value chain, encompassing Scope 3 emissions.

Lastly, through continuous investment in the development of power-efficient products. Infinidat continuously upgrades its product lines to deliver ongoing higher performance with the lowest possible energy consumption.

Compare competitors for storage energy efficiency

You might expect that all enterprise storage vendors would have similar environmental credentials, but the reality is very different. Some solutions are significantly more energy-efficient than others. Independent analysis shows that the 'greenest' arrays deliver 2.5 to 4.5 times better power efficiency (watts/TB) compared to other enterprise-class storage competitors.

Figure 1: Competitors' storage energy efficiency

Model	Peak Watts (Max)	Max. Raw TB (Useable TBu)	Watts/Raw TBu	Power Efficient Comparison
F4400	6,000	3,417	1.76	4.55X
PowerMax 2500	15,967	2,000	7.98	
F6400	9,800	6,915	1.42	2.58X
PowerMax 8500	16,470	4,500	3.66	
SSA F4416T	6,500	2,624	2.48	3.46X
PowerMax 8000	9,632	1,125	8.56	

Source: Infinidat

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Consider this comparison above of publicly available power and capacity information detailing the consumption rates of two leading enterprise storage vendors to illustrate the point. Take this analysis a step further to consider your own environment using the energy efficiency calculator. Estimate the savings to be made both in terms of OpEx and carbon footprint[3].

What next?

There are three very tangible benefits to be seen from using energy efficient storage solutions for Green IT:

1. **Lower OpEx** – because reduced power consumption translates directly into lower operational expenses.

2. **Reduced Greenhouse Gas (GHG) Emissions** – because by minimising energy use you can achieve a lower carbon footprint, supporting Green IT and environmental sustainability goals.

3. **Improved ROI/TCO** – because the combination of lower OpEx and increased efficiency results in a better return on investment and lower total cost of ownership.

Clearly, Green IT must become an essential component of every enterprise IT strategy. We cannot continue unchecked, on the current trajectory of power consumption. As the explosion of generative AI continues, enterprises will need to regain control of their energy usage and find ways to embrace this new technology without it causing negative consequences. Identify the right strategic technology partner, one with the right mix of products and an emphasis on cutting carbon emissions, and you can achieve this.

Reference

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3 https://www.infinidat.com/en/financial-benefits