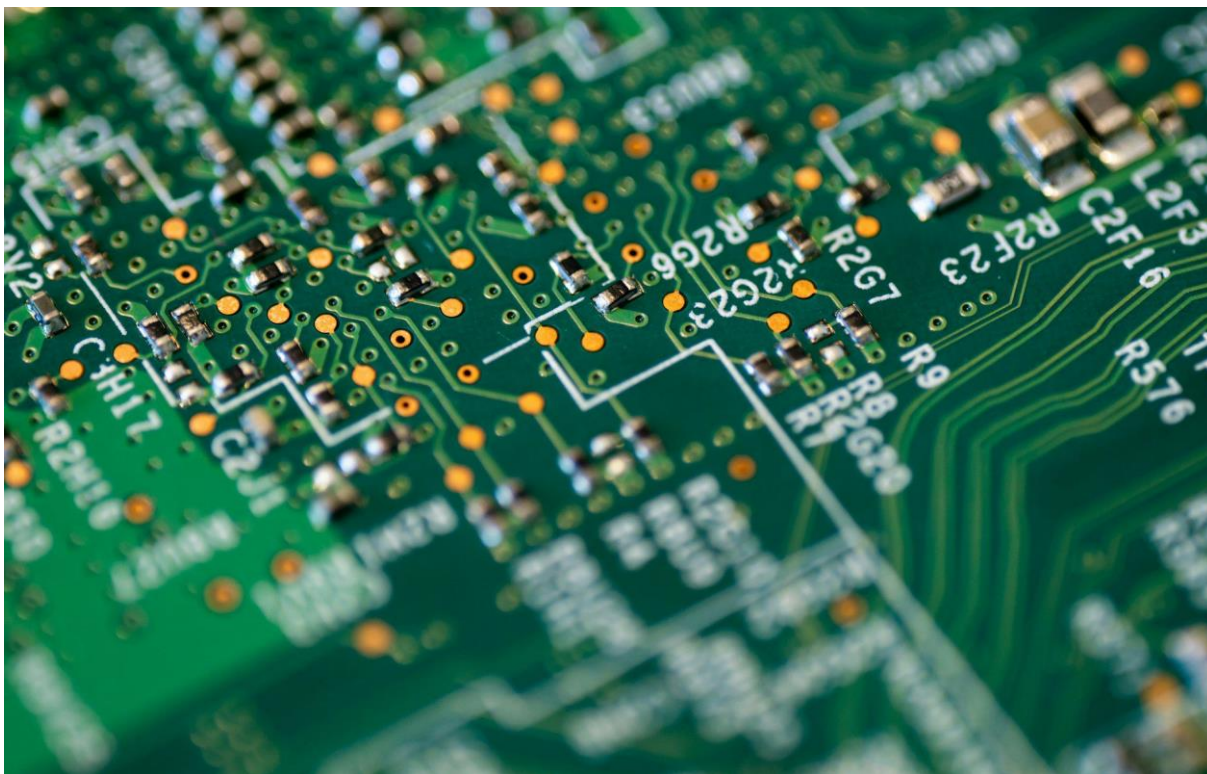




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Just Do IT: getting a grip on energy efficiency in the IT landscape

In the world of information technology, it's all about speed, computing power, and innovation. But as AI and high-performance computing process ever-increasing amounts of data, so do data centers' energy needs. The challenge? Doing more with less. And that starts with insight. Nike's slogan, "Just Do It," is a powerful call to action in this context: take proactive steps to improve energy efficiency.

AI: the promise and the challenge

AI is a driving force behind countless innovations, but training and running AI models is energy-intensive. GPUs and CPUs in data centers guzzle power and without efficient control, consumption skyrockets. To keep AI widely accessible and sustainable, a smart approach to energy management is necessary.

To measure is to know

Many organizations look at the Power Usage Effectiveness (PUE) of a data center, but this only tells part of the story. It's time to take it a step further:

- **Hardware-level monitoring:** CPUs and GPUs include built-in sensors that measure real-time power consumption and load. By making smart use of this data, overcapacity can be prevented.
- **Optimization of power management settings:** Experiments such as the LEAP pilot show that correctly tuned server settings can result in energy savings of up to 40%.
- **Dynamic workload balancing:** AI models and other compute-intensive workloads can be distributed more efficiently across servers, reducing peak consumption and making the most of hardware.

Markets benefiting from energy efficiency

The impact of energy-efficient IT solutions is noticeable in several sectors:

- **Data centers:** From hyperscale to colocation, all types of data centers can benefit from efficient cooling and energy management strategies.
- **Cloud Service Providers:** Cloud solution providers can cut costs and improve their sustainability through better energy management.
- **AI & High-Performance Computing:** Companies and research institutions that process large amounts of data benefit from energy-efficient hardware and smart workload allocation.
- **Government and Regulation:** Government agencies and policymakers can drive efficiency through regulations and guidelines for sustainable energy management in the IT sector.
- **Industry & Manufacturing:** Smart energy management in plant and industrial process IT infrastructures reduces operational costs and CO2 emissions.

Smart management: the next step

Energy efficiency starts with insight and ends with action. Platforms such as Zirrow.nl offer real-time monitoring solutions that allow data centers and IT users to get an instant grip on their consumption. Automation and intelligent control can reduce energy waste without compromising on performance, and reduce investments in hardware and software through better deployment.

Innovative Energy Efficiency Strategies

In addition to monitoring and optimization, advanced techniques are available that can significantly improve energy efficiency in data centers:

1. **Implementation of Power Management:** Activating the eco mode on servers can lead to immediate 10% energy savings, without sacrificing performance.
2. **Direct Liquid Cooling:** Innovative direct liquid cooling systems can reduce cooling energy consumption by 90% over traditional air cooling.

3. **Use of Energy-Efficient Hardware:** Selecting energy-efficient components and techniques such as Energy-Efficient Ethernet (EEE) contributes to lower consumption.
4. **Extending the technical lifespan:** by using the hardware more efficiently, the technical lifespan can be extended, which saves the environment and the wallet.

From monitoring to regulation

There is a lot of talk about making IT more sustainable, but real progress requires cooperation. The Corporate Sustainability Reporting Directive (CSRD) requires companies to report more transparently on their energy consumption. This will also be relevant for companies that do not have to report, because they are asked by their customers about energy consumption in their chain. This offers an excellent opportunity for the sector to make joint agreements and to structurally optimise energy consumption.

Conclusie: Just Do IT

The tools and data are already there. It's time to use them. By smart monitoring, optimization and collaboration, we can reduce the energy consumption of data centers without limiting the growth of AI and IT. Energy efficiency is not a trend, but a necessity – and the first step is simple: Just Do IT!

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