How Nasuni Enables Organizations to Reduce Their Carbon Footprint and Meet ESG Initiatives

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Table of Contents

Introduction

In today's world, organizations increasingly recognize the importance of sustainability in their operations. ESG (Environmental, Social, Governance) initiatives have gained prominence as companies strive to reduce their environmental impact and improve social responsibility. One area where significant progress can be made is through data center consolidation and migration to cloud-based services. This paper explores how moving to Nasuni and its innovative hybrid cloud storage model will help organizations meet their ESG initiatives and reduce or eliminate the carbon footprint of their on-premises data centers.

Data Center Consolidation and Migration to Cloud Services

The traditional approach to data center management involves building extensive, on-premises facilities that require significant investment in hardware, software, and personnel. These data centers consume substantial energy for cooling, power distribution, and other infrastructure requirements. The growing demand for digital services has increased the number and size of data centers, contributing to higher carbon emissions.

Moving data centers to the cloud can help organizations reduce their environmental impact by consolidating multiple on-premises facilities into a single, virtualized infrastructure. Cloud computing provides energy-efficient infrastructure that is more economical, scalable, and cost-efficient than traditional on-premises systems. By consolidating data in the cloud, organizations can significantly reduce their energy usage and physical waste associated with hardware upgrades. Moreover, cloud providers like AWS, Microsoft Azure, and Google Cloud have made substantial commitments to renewable energy, further enhancing the sustainability of cloud computing.

The Nasuni Use of Object Storage in the Cloud

The Nasuni architecture uses cloud-based object storage, enabling organizations to efficiently store and manage their data. Object storage uses a flat address space with no hierarchical structure, which simplifies data management and reduces the need for complex indexing mechanisms. This approach eliminates the need for traditional file systems, which can be resource-intensive and difficult to scale.

Nasuni provides a patented unified file system (UniFS™) that enables organizations to manage their data within a single namespace, greatly simplifying IT operations and administration. This frees organizations from the inherent limitations of traditional NAS and other file storage solutions. Growth is uninhibited, freeing organizations to organize data as it best suits the business. This consolidation eliminates the need for multiple copies of content, further reducing the file footprint in the cloud.

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Major Cloud Provider Highlights

AWS

AWS provides an energy-efficient infrastructure that is 3.6 times more efficient than the median of U.S. enterprise data centers. By migrating to AWS, organizations can lower their workload carbon footprints by nearly 80% compared to on-premises data centers. Furthermore, AWS aims to operate with 100% renewable energy by 2025.

Microsoft Azure

Microsoft Azure offers tools that enable organizations to accurately report the carbon emissions associated with their cloud usage and take action to reduce their carbon footprint. Azure's data centers are up to 83% more carbon efficient than traditional ones. Microsoft has also committed to being carbon-negative by 2030.

Google Cloud

Google Cloud has demonstrated its commitment to sustainability by aiming for net-zero emissions across its operations and value chain by 2030. Google's data centers are twice as energy efficient as typical enterprise data centers. Moreover, Google Cloud provides tools that help organizations track and control carbon emissions.

The Nasuni File Data Platform supports all major cloud providers. Whichever providers you use, Nasuni helps you realize the benefits of cloud storage to consolidate previously disparate file systems while drastically reducing your on-premises footprint.

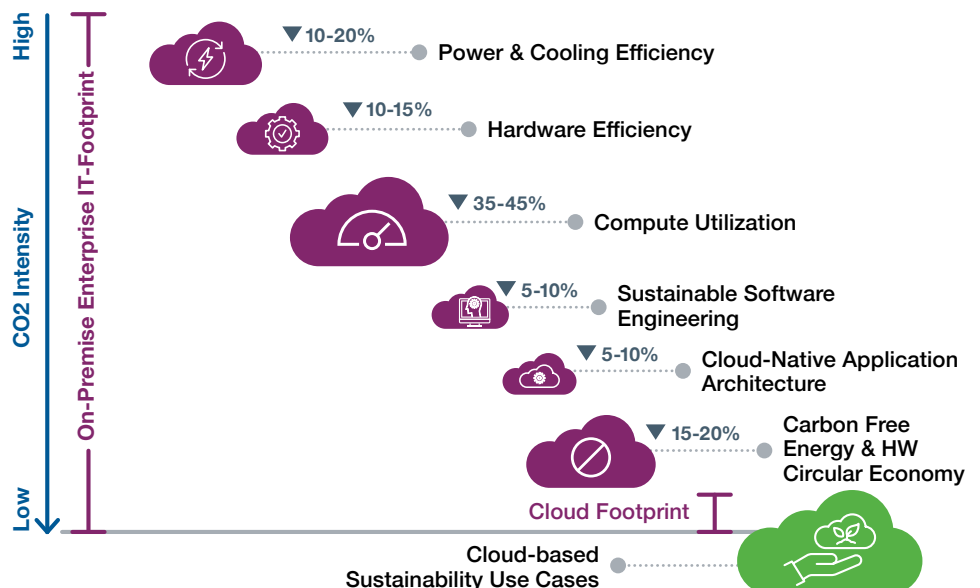## The Benefits of Moving to the Cloud for File Data Storage with Nasuni

Moving to Nasuni for your file data storage offers several benefits that can help organizations meet ESG initiatives and reduce or even eliminate the carbon footprint of their on-premises data centers. Migrating data storage to Nasuni provides several advantages. It allows for convenient file sharing and collaboration, enhances security, and offers unlimited storage capacity. Besides the sustainability gains, using Nasuni results in significant cost savings. Nasuni customers often realize 50% or more annual cost savings over their previous on-premises architectures.

90% Hardware Reduction

83% CO2 Reduction

75% Energy Efficiency
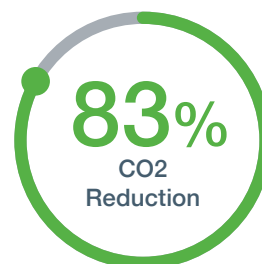
- **Reduced Infrastructure Footprint and Costs:** Using Nasuni to store and manage data in the cloud allows organizations to eliminate on-premises file servers and backup/recovery infrastructure, reducing the energy consumption and carbon emissions associated with maintaining physical hardware. Organizations can reduce their on-premises file and backup/recovery hardware by as much as 90%.

- **Improved Security:** Nasuni brings ransomware detection directly within the file storage architecture. With infinite, immutable snapshots, continuous file versioning, and fast recovery, Nasuni eliminates the need for a separate backup and recovery solution for your file-share environment. This improves data resilience and reduces your data center footprint and resource usage.

- **Reduced TCO:** By centralizing your file shares with Nasuni, you can reduce your total cost of ownership (TCO) by achieving better storage utilization and avoiding over-provisioning file share capacity. The work associated with hardware procurement, setup, and maintenance is also eliminated.

- **C02/Greenhouse gas reduction:** When comparing carbon emissions associated with cloud storage with equivalents in a traditional enterprise data center and accounting for using renewable energy sources, carbon emissions can be 79-83% lower, as measured in kgCO2e (kilograms of carbon dioxide equivalent).

- **Governance:** Nasuni's security features, such as ransomware protection/detection/recovery and immutable file versioning, can form a large part of a company's responsible data governance strategy. Nasuni Access Anywhere provides secure, auditable external file sharing that eliminates file duplication and "Shadow IT" file sharing that can increase risk exposure.

- **Energy Efficiency:** Cloud providers have made significant strides in energy efficiency. On-premises data centers consume significant energy for cooling, power distribution, and other infrastructure requirements. Organizations can reduce their energy consumption by 75% or more by migrating to cloud services.

The graphic to the right indicates the incremental levels of carbon reduction that can be achieved **— the greater the ambition, the greater the reduction in carbon emissions.**

SOURCE: Accenture,
The green behind the cloud

High
CO2 Intensity
On-Premise Enterprise IT-Footprint

▼ 10-20% Power & Cooling Efficiency

▼ 10-15% Hardware Efficiency

▼ 35-45% Compute Utilization

▼ 5-10% Sustainable Software Engineering

▼ 5-10% Cloud-Native Application Architecture

▼ 15-20% Carbon Free Energy & HW Circular Economy

Cloud Footprint

Low

Cloud-based Sustainability Use Cases

Conclusion

Moving your on-premises file data to the cloud with Nasuni will help your organization meet its ESG initiatives, dramatically reduce costs, and reduce the carbon footprint of its current on-premises data centers. The Nasuni File Data Platform offers unmatched scalability, built-in security, and local-like performance while eliminating the need for extensive, on-premises facilities. By migrating to Nasuni, organizations can reduce their energy consumption, carbon footprint, and storage costs while improving resilience and scalability.

Additional Resources

- Cloud Computing Sustainability & The Green Cloud | Accenture. https://www.accenture.com/us-en/insights/strategy/green-behind-cloud.

- What Does the Nasuni File Data Platform Actually do? https://www.nasuni.com/blog/what-does-the-nasuni-file-data-platform-actually-do.

- Cloud Can Help Build a More Sustainable Future | Deloitte US. https://www2.deloitte.com/us/en/blog/deloitte-on-cloud-blog/2022/cloud-can-help-build-a-more-sustainable-future.html.

- Cloud storage vs. on-premises servers: 9 things to keep in mind. https://www.microsoft.com/en-us/microsoft-365/business-insights-ideas/resources/cloud-storage-vs-on-premises-servers.

- Microsoft Azure Sustainability - Microsoft Sustainability. https://www.microsoft.com/en-us/sustainability/azure.

- Sustainability | Google Cloud. https://cloud.google.com/sustainability.

- Sustainability in the Cloud - Amazon Sustainability. https://sustainability.aboutamazon.com/environment/the-cloud.

- Microsoft Cloud Carbon Study: https://www.microsoft.com/en-us/download/details.aspx?id=56950.

- ESG Research Insights Paper Analyzing the Outcomes Organizations. https://pages.awscloud.com/rs/112-TZM-766/images/ESG%20AWS%20Cloud%20Migration%20Best%20Practices%20Study%20Final%20Aug2019.pdf.

- Ecometrica: https://ecometrica.com/assets/GHGs-CO2-CO2e-and-Carbon-What-Do-These-Mean-v2.1.pdf.

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