

Can the Green Cloud Help Build a Sustainable Future?

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As technology evolves, businesses explore new horizons to leverage cloud computing in order to acquire more statistics and figures to stay ahead of the curve. Undoubtedly, cloud computing is one of the technological advances that has offered enough room for expanding many industries embarking on a digital transformation journey.

With a compound annual growth rate of 4.8%, the cloud application software market will reach \$168.6 billion U.S. dollars by 2025. However, the list is quite extensive when discussing the environmental benefits of relying on the cloud, since the primary motive to rely on the cloud is to boost business operations and security.

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Yes, the green cloud is yet another buzzword that portrays the potential environmental benefits of cloud services offered to society. Green cloud portrays the approaches and practices of leveraging technological advances like cloud computing and other IT resources sustainable for environmental benefits by reducing the carbon footprint.

Let's dig deeper into the aspects of the green cloud and how businesses can put their best foot forward in adopting these practices to shape the future of a sustainable global IT landscape.

So, how does the green cloud work? Various cloud service

providers are inching towards incorporating multiple strategies to attain greener and sustainable cloud data centers. These efforts are majorly targeted to achieve efficiency improvements in the following areas:

Energy management

One of the essential aspects of green cloud computing is renewable energy to power its data centers across the globe. However, powering the entire data center through renewable energy isn't possible yet, but most of the time, at least 50% of the energy source is solar or wind.

Apart from this, energy is stored within the battery banks and utilized during the days when enough energy can't be produced in real-time. This helps decrease the carbon footprint significantly as more and more renewable energy is consumed in operating and maintaining massive data centers.

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Cloud facility

Leveraging renewable energy sources isn't just a goal for green cloud computing; adequate energy efficiency measures are also significant.

The cloud service providers emphasize locating data centers on the ocean floor, underground or in cold climatic conditions. The providers can save resources and energy by cooling down the servers. Furthermore, many cloud service providers are also working on utilizing the excess heat generated within the data centers in numerous ways.

Additionally, the service providers can also incorporate innovative technologies to monitor and optimize the overall energy consumption and use valuable insights to modify the

floor layout for maximum air circulation.

Smart infrastructure

Many cloud providers are now working on optimizing and deploying hardware and software infrastructure that consumes less energy and eventually minimizes the carbon footprint.

Deploying hardware that minimizes power consumption, including dynamic voltage and frequency scaling (DVFS), helps ensure optimized use and allotment of resources for maximized power saving.

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Workflow management

Cloud providers may utilize multiple strategies for optimizing workflows at different levels, including modifying applications, shifting workloads, and optimizing storage that further helps in reducing energy consumption.

Moreover, valuable data insights can also be used to design an optimized workflow that saves time, energy and resources.

Impact of green cloud on the environment

- **Minimized carbon footprint:** One of the biggest challenges that the world faces today is the high carbon footprint. With the green cloud computing concept, businesses can eventually contribute to minimizing carbon footprints and ensure they build a sustainable future.
- **Low power consumption:** When we discuss leveraging the

green cloud computing processes, we save on resources and massive amounts of power that otherwise would get squandered.

- **Lower costs:** Cloud providers can minimize their expenditure on maintaining data centers by leveraging ways to optimize cooling costs and reduce the total number of resources. This helps in saving a good amount of money in the long run.
- **Fast updates:** When we talk about hardware and software updates for the data center, providers can ensure that they can quickly implement changes related to data center optimization and save precious time.

The concept of green cloud computing isn't a luxury anymore; it's swiftly becoming an absolute necessity for a sustainable future for our upcoming generations.

Cloud providers should understand the endless possibilities and advantages of incorporating innovative green cloud computing that helps them save time, energy and resources – and eventually helps establish the foundation stone for a greener future.

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