



A Review of Green Environment Cloud Computing

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ABSTRACT

Green computing is a way of doing computing that helps the environment by minimizing the amount of energy needed by a computer, server, or device, using recyclable or biodegradable materials, and producing less trash when making products. Computer usage is increasing quickly, which increases the amount of carbon dioxide in the environment. Green technology methods can help in constructing a secure environment for us to live in. Because of the rising popularity of green technologies, green cloud computing is a well-known broad subject and a popular field for research. tremendous computing and data storage needs. A supreme and astounding method for virtualizing servers and data centers and making them energy-efficient has been developed by cloud computing. In order to take use of various IT resources, virtualizing servers and data centers and making them energy efficient is now possible thanks to cloud computing. IT resources use a lot of electricity and energy, which causes an energy crisis and a change in the climate of the earth. Green cloud computing is therefore required since it may produce solutions that not only make IT resources energy efficient but also lower operational costs. Green IT is recognized as a crucial step in the IT industry's attempt to address environmental issues.

Keywords: Asthma, particle matter, heavy metals, environmental pollution, and power plants.

1. Introduction

Renting computing power, storage, or other resources from a distant data center is referred to as cloud computing. In contrast, green computing describes devices that are energy-efficient and run on renewable energy. A metaphorical combination of two well-known phrases, "green cloud computing" indicates that this form of computing is both energy and environmentally friendly. The use of green cloud computing. The technique of enabling more energy-efficient computing environments is described [2]. On-site data centers are an alternative to cloud computing, which consume a lot more energy. Cloud computing has been embraced due to its many benefits over conventional computer techniques. Technology that reduces the environmental impact of information technology has been developed in response to a growing interest in "green" computing. Although the ability of cloud computing to increase efficiency may improve the safety and health of the environment, the widespread use of cloud computing technology may present problems: the changing conditions during the production revolution are analogous to the constantly evolving technology, which is advantageous to the economy. Cloud computing's advancement has caused a change in the method of providing IT services. As a result of a network of mid-level industrial units offering information technology as a service, the idea of XAAS is currently widely used. Centers for data. An important component of the increase in global energy consumption is attributed to the information and communication technology (ICT) sector. By reducing the use of hazardous substances and increasing energy efficiency, green cloud computing intends to promote the recycling or biodegradation of outdated products and industrial waste. Although the ability of cloud computing to increase efficiency may improve the safety and health of the environment, the widespread use of cloud computing technology may present problems: the changing conditions during the production revolution are analogous to the constantly evolving technology, which is advantageous to the economy. Cloud computing's advancement has caused a change in the method of providing IT services. As a result of a network of mid-level industrial units offering information technology as a service, the idea of XAAS is currently widely used.

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2. Study Design:

Although the ability of cloud computing to increase efficiency may improve the safety and health of the environment, the widespread use of cloud computing technology may present problems: the changing conditions during the production revolution are analogous to the constantly evolving technology, which is advantageous to the economy. Cloud computing's advancement has caused a change in the method of providing IT services. As a result of a network of mid-level industrial units offering information technology as a service, the idea of XaaS is currently widely used enters for data. An important component of the increase in global energy consumption is attributed to the information and communication technology (ICT) sector. By reducing the use of hazardous substances and increasing energy efficiency, green cloud computing intends to promote the recycling or biodegradation of outdated products and industrial waste.

3. Inclusion and exclusion criteria:

that makes this possible: Ensures that resources are used, increasing the system's efficiency effectively. The system is simple to use and offers precise tracking of resource allocation. Moving virtual computers across different physical sites decreases downtime. The distribution of server load is even [4]. DVFS, or dynamic voltage frequency scaling incorporating frequency scaling (a method that uses dynamic voltage management), DVFS reduces data center energy utilization and frequency) with power management increases the use of resources. As a result, utilizing green cloud computing allows lowering the carbon footprint. Organizing Workloads: The scheduling of workload to servers makes use of concepts from queueing theory. As stated by a hey split the workload from other servers and the running costs of the server. By selecting the server that has the

4. Methods:

Energy conservation lowers the price of goods and resources. Green computing lowers waste in two ways: by reusing equipment and by using less power. It might reduce the danger posed by the chemicals found in laptops, which can cause cancer and other health problems. Problem: Green computing may be quite expensive if many PCs were bought. This needs to change immediately so that more people can utilize the new technology[5]. The use of less environmentally friendly processing methods will result in a large increase in carbon dioxide emissions. Emissions rise as a result of the decrease in the use of fossil fuels in power plants, transportation, and manufacturing sectors. Because it requires less energy to create, use, and organize

5. Environmental sample:

The most environmentally friendly computers could be significantly underpowered and unable to complete the functions that customers need from them. Some folks could need extremely power-hungry machines to handle their tasks. When buying a green PC, many customers with powerful PCs must also cope with this issue.

6. Results:

Even the greenest computers could be severely underpowered and unable to do the tasks that customers want of them. Some people may require machines that consume a lot of electricity to complete their tasks. Many consumers with powerful PCs must also deal with this difficulty when purchasing a green PC.

The job designated to the first-in-line execution slot is scheduled for execution first and the resources needed for it are allocated as soon as possible. Following the completion of that task, the subsequent procedure is carried out.

Round-robin: The task will be carried out until the time slice or quantum expires, at which point it will be added to a queue and continue execution from there. The task will start executing once it reaches the front end once more [6]. Swarm optimization: This provides creative, all-encompassing answers for consolidating energy-conscious virtual machines. Through effective work distribution, these strategies enable the strain from heavily used equipment to be moved to sparingly used ones, minimizing operational costs. One particular strategy in this group is ant colony optimization, however swarm optimization is more robust and very efficient. Artificial bee colony optimization, particle swarm optimization, differential evolution, and numerous other methods fall under this category[8]. Swarm optimization: This offers innovative, all-encompassing solutions for consolidating virtual machines that are energy-conscious. These techniques enable the strain from frequently used equipment to be transferred to less often used ones, reducing operational expenses. Ant colony optimization is one specific tactic in this group, but swarm optimization is more durable and effective. This area includes a wide range of techniques, including artificial bee colony optimization, particle swarm optimization, differential evolution, and many others.

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