Adopting Cloud-Based Techniques to Reduce Energy Consumption: Toward a Greener Cloud

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Abstract : The cloud computing industry has set new goals for better service delivery and deployment, so anyone can access services such as computation, application, and storage anytime. Cloud computing promises new possibilities for approaching sustainable solutions to deploy and advance their services in this distributed environment. This work explores energy-efficient approaches and how cloud-based architecture can reduce energy consumption levels amongst enterprises leveraging cloud computing services. Adopting cloud-based networking, database, and server machines provide a comprehensive means of achieving the potential gains in energy efficiency that cloud computing offers. In energy-efficient cloud computing, virtualization is one aspect that can integrate several technologies to achieve consolidation and better resource utilization. Moreover, the Green Cloud Architecture for cloud data centers is discussed in terms of cost, performance, and energy consumption, and appropriate solutions for various application areas are provided.