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Energy efficiency & low carbon enabler green it framework for implementing green data centers

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The increasing demand for storage, networking and computation has driven the intensification for large multifaceted data centers that run many of today's Internet, financial, commercial and business applications. A data center comprises of many thousands of servers and can use as much energy as small city. Massive amount of computation power is required to drive and run these server farms resulting in many challenging like huge energy consumptions, emission of green house gases, effects of global warming and increasing cost of ownership. This framework helps to investigate challenges related to data centers, with a particular emphasis on how virtualization technology can be used to simplify the deployment of servers, improves resource utilization, improves the efficiency, and reduces the emission of greenhouse gases. The framework uses latest energy saving techniques like virtualization, cloud computing and green metrics to achieve green data centers. The proposed framework seamlessly divides data center components into measurable resource pools and workloads depending on different parameters like energy consumption ratio, utilization ratio, and applies green metrics like Power Usage Effectiveness to measure the performance of individual components and data center as whole so that benchmarking values can be set.

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