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(57) Abstract :

The present invention relates to a device (101) for dynamic allocation of virtual machines (104) in data centers (100), comprising an embedded microcontroller (103), workload predictor module (105), sensor module (106), hypervisor interface module (107), and decision engine (108). The device dynamically analyzes real-time server metrics and predicts workload patterns to autonomously execute VM migrations. This ensures optimal resource utilization, minimizes thermal overload, reduces energy consumption, and maintains service quality across heterogeneous virtualization platforms without manual intervention.

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