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**POWER CONSUMPTION-AWARE VIRTUAL MACHINE PLACEMENT IN CLOUD DATA CENTER**

**Abstract:**

In this paper, we present a set of power-aware dynamic allocators for virtual machines (VMs) in cloud data centers (DCs) taking advantage of the software defined networking paradigm. Each VM request is characterized by four parameters: 1) CPU; 2) RAM; 3) disk; and 4) bandwidth. We design the allocators in order to accept as many VM requests as possible, taking into account the power consumption of the network devices. In this paper, we introduce ten different allocation strategies, and compare them with a baseline that consists of using the first available server (first fit). The allocators differ in terms of allocation policy (best fit/worst fit), allocation strategy (single/multi objective optimization), and joint/disjoint selection of IT and network resources. For both joint and disjoint approaches, we evaluate the behavior of all possible pairs policy-strategy, varying the load of the DC and the number of VMs to be allocated. Moreover, the experimental results highlight that joint approaches outperform disjoint ones.