ACM SIGCOMM Workshop on Distributed Cloud Computing (DCC 2014)
Poster Session

Traffic-aware clustering and VM migration in distributed data center

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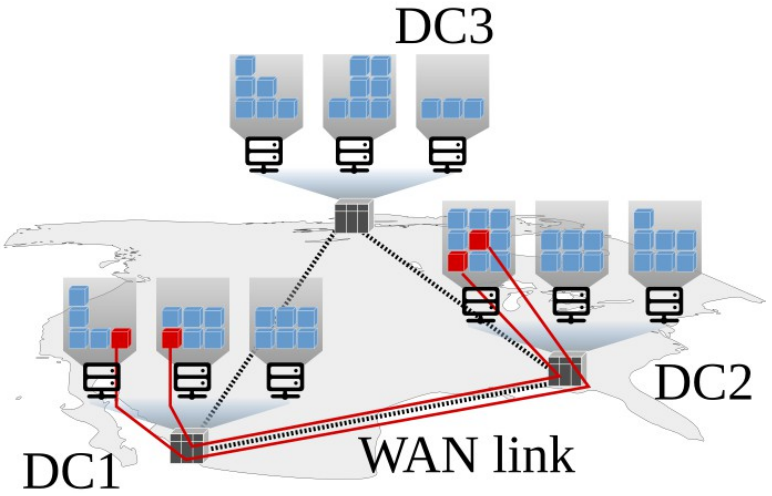
Motivations

1. Deployment of distributed data centers (DDCs) instead of single centralized DC [1];
2. Cloud computing tasks intrinsically highly dynamic;
   - WAN link connecting the two DCs could experience congestion;
3. Optimal complete VMs placement is NP-hard and resource expensive [2];



[1] V. Valancius, N. Laoutaris, L. Massouli´e, C. Diot, and P. Rodriguez, “Greening the internet with nano data centers,” in Proceedings of the 5th international conference on Emerging networking experiments and technologies, ser. CoNEXT ’09. ACM, 2009, pp. 37–48.
[2] K. Katayama and H. Narihisa, “Performance of simulated annealing-based heuristic for the unconstrained binary quadratic programming problem,” European Journal of Operational Research, vol. 134, no. 1,
pp. 103 – 119, 2001

VM cluster migration

- **Objectives** → reduce the WAN link utilization and to solve the link congestion during the cloud operation in a DDC scenario;
- **Idea** → heuristic algorithm that, analysing the traffic pattern among VMs, **finds a strong connected cluster and migrate its VMs to a DC to reduce the WAN link utilization** and to solve the congestion event;