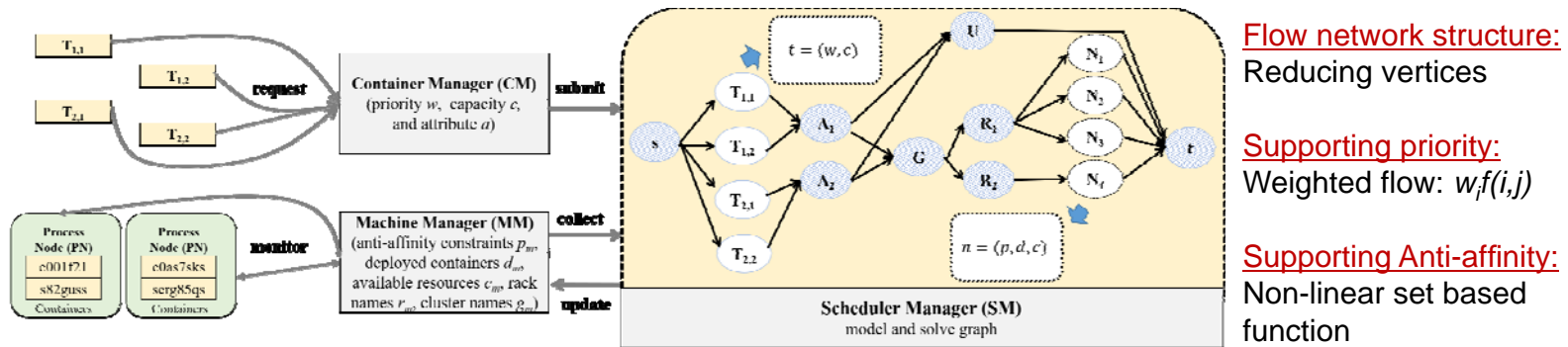# Aladdin: Optimized Maximum Flow Management for Shared Production Clusters (IPDPS 2019)

Heng Wu, Wenbo Zhang, Yuanjia Xu, Hao Xiang,
Tao Huang, Haiyang Ding, Zhen Zhang

Contact: Yuanjia xu, xuyuanjia2017@otcaix.iscas.ac.cn, 13474460179

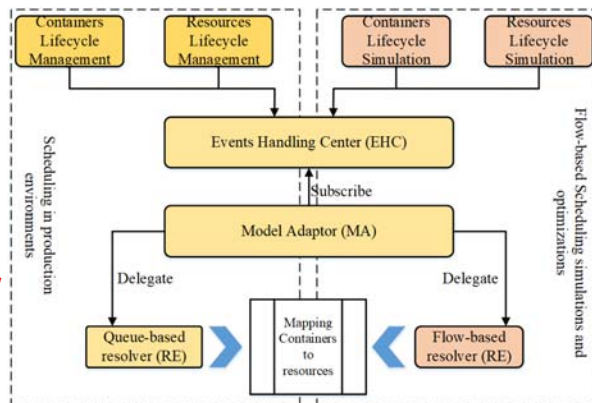## A flow based solution in Alibaba production cluster trace

Flow network structure:
Reducing vertices

Supporting priority:
Weighted flow: $w_i f(i,j)$

Supporting Anti-affinity:
Non-linear set based function
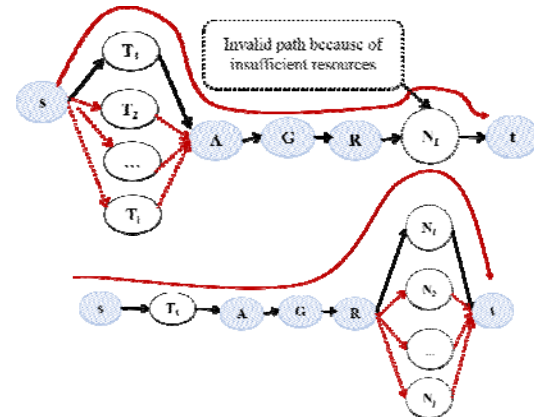
Key technologies in Aladdin

Key problems:

How to support scheduling in both production and simulation without complex adaption modifications?

How to extend the typical flow theory to express scheduling constraints with practical resolving complexity?
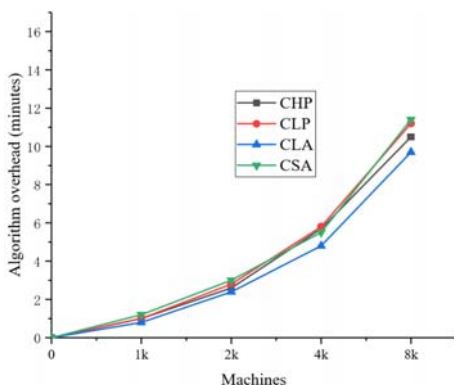

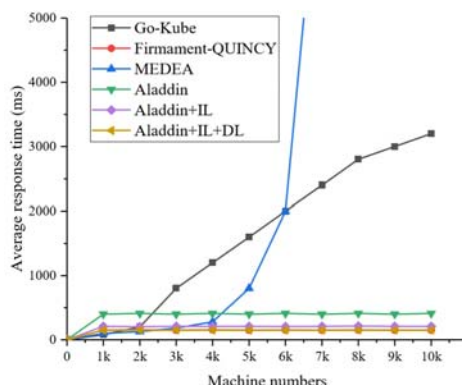❖ A seamless intergration of production and simulation.

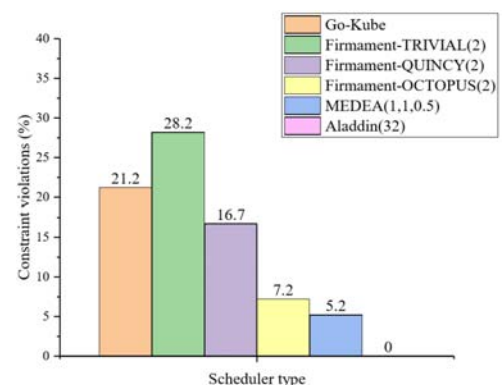❖ Isomorphism and depth limiting can reduce searching space.

Experimental results

❖ Promised scalability in production

❖ Comparable scheduling latency.

❖ High placement quality.