

**Computer Systems Lab**  
**Project Proposal in Concurrent and Distributed Systems 236371**  
Winter 2016

## Multiple Physical Machine support for Ginseng

Description:

Ginseng[1] is the first market-driven cloud system that allocates memory efficiently to selfish cloud clients. Ginseng incentivizes selfish clients to bid their true value for the memory they need when they need it. Ginseng continuously collects client bids, finds an efficient memory allocation, and re-allocates physical memory to the clients that value it the most.

The current implementation is in Python over KVM, using libvirt. It currently assumes that the number of guest VMs on a physical host is constant.

In this project the student(s) will expand and improve Ginseng to support Live Migration, using free software as much as possible, and making adaptations to Ginseng to lose and receive VM guests on the fly.

Prerequisites:

Operating systems course (or equivalent knowledge). Python.

Advisors: Assaf Schuster, Orna Agmon Ben-Yehuda {assaf,ladypine} at cs.technon.ac.il

Number of students: 1 or 2 students.

References:

[1] "Ginseng: Market-Driven Memory Allocation", Orna Agmon Ben-Yehuda, Eyal Posener, Muli Ben-Yehuda, Assaf Schuster, Ahuva Mu'alem.

<http://www.cs.technion.ac.il/~ladypine/vee18-agmon-ben-yehuda.pdf>