Large-scale Systems
Performability

Open M.Sc. Projects (with)

- Kaveh Razavi
- Alexandru Uta
- Ana-Maria Oprescu (UvA)

Thilo Kielmann
Large-scale Systems Performability

- Large-scale systems:
  - hundreds or thousands of nodes
  - geographically distributed
  - “everything cloud”

- Performability:
  - performance, fault-tolerance, cost, energy
  - trading these properties in system design
We eat our own dog food!

www.conpaas.eu runs ConPaaS.
Kaveh Razavi (VM image caching)
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- Detecting the End of VM Boot
  - Observe the I/O traffic and decide when we can “close” the VMI cache

- VM State Compression
  - Compress/deduplicate VM state; boot from a snapshot instead of a raw image
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Alexandru Uta (many task computing)
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- Kernel-Space In-Memory Distributed File System
  - Have a scratch FS using kernel modules rather than user-space FUSE

- A Cost-Aware Scheduler for Many-Task Computing on Clouds
  - Optimize number of storage nodes (I/O throughput vs. cost of cloud VMs)
Cost-aware scheduling of many tasks on clouds

- Trade-off between speed of a cloud VM vs. its hourly cost

Project topics:
- Scheduling with heterogeneous VM instances
- Scheduling within nested virtualization
External Companies

- PS-Tech, Amsterdam, www.ps-tech.com
  - virtual reality, 3D-tracking, medical imaging

- stickystudios, Utrecht, www.stickystudios.com
  - game development, OpenGL, shaders