LSDC Final Presentation

Group 03

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Outline

- Architecture
- Scheduler overview
- Evaluation
- Performance metrics
- Conclusion

Architecture

- Cmdline Java program
  - all Scheduler-Scenario combinations
  - configurable by build file
    - Nr cloudpartners, PMs
- MachineManager
  - Handling of PMs, VMs
- Scheduler
  - Assign applications to VMs
  - Delay applications
  - Migration
  - Federation

Scheduler

- Scheduler A
  - 1 VM per application
- Scheduler B
  - Resize VMs
  - Migration
- Scheduler C
  - No Resizing
- All Schedulers
  - Federation

Scheduler C (detail)

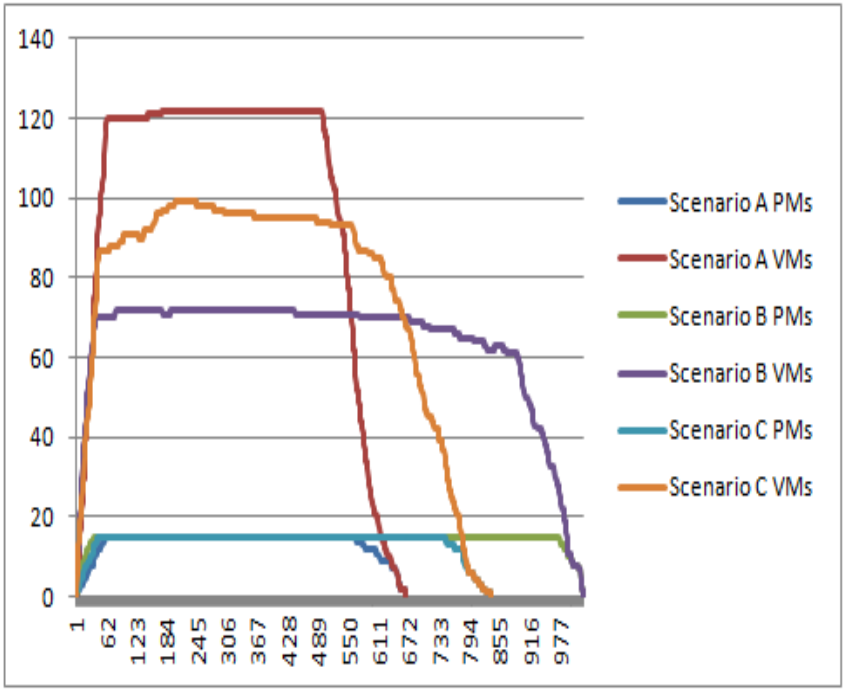
- Resource allocation
  - Multiple apps per VM
  - 1 VM per PM
  - No resize -> reserve max space
  - Migration

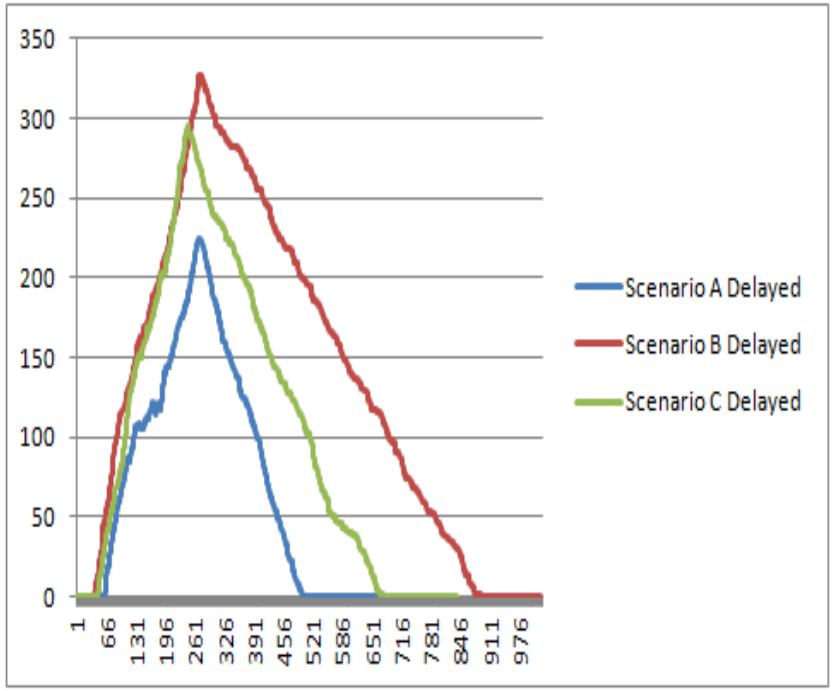
- Advantages
  - Resize operations costly in real world
  - Maximum utilization
  - Minimization of PMs

Evaluation

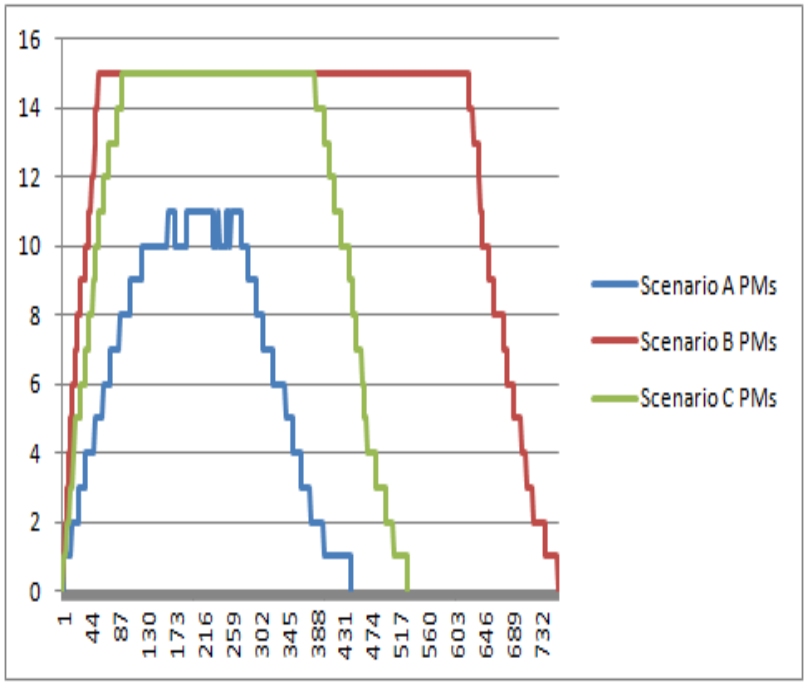
- Testdata
  - 500 Applications
  - Duration from 85 to 175 (normal distributed)
  - Multiple applications per timestamp
  - Scenarios A-C

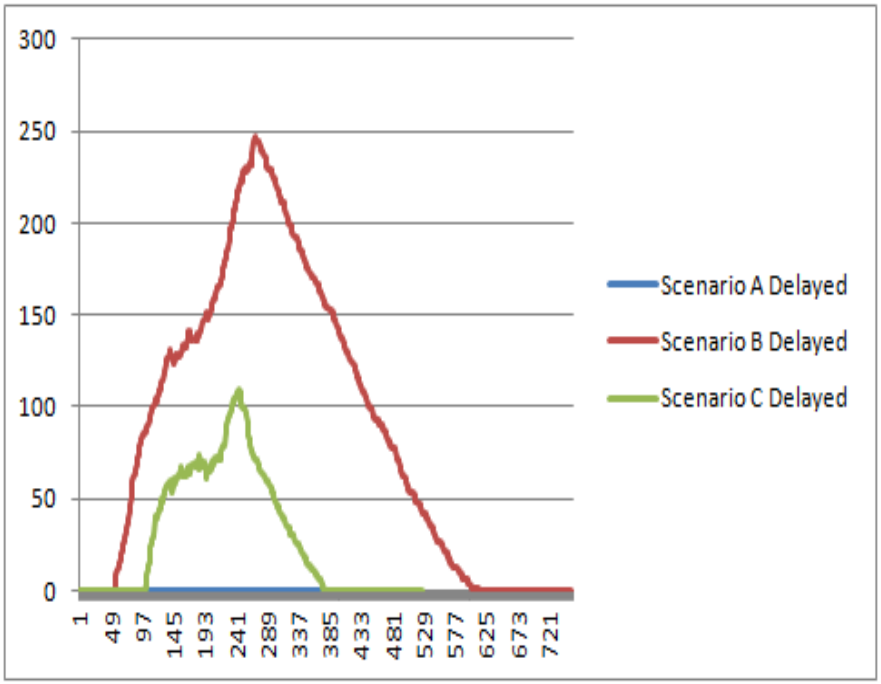
Performance (Scheduler A)



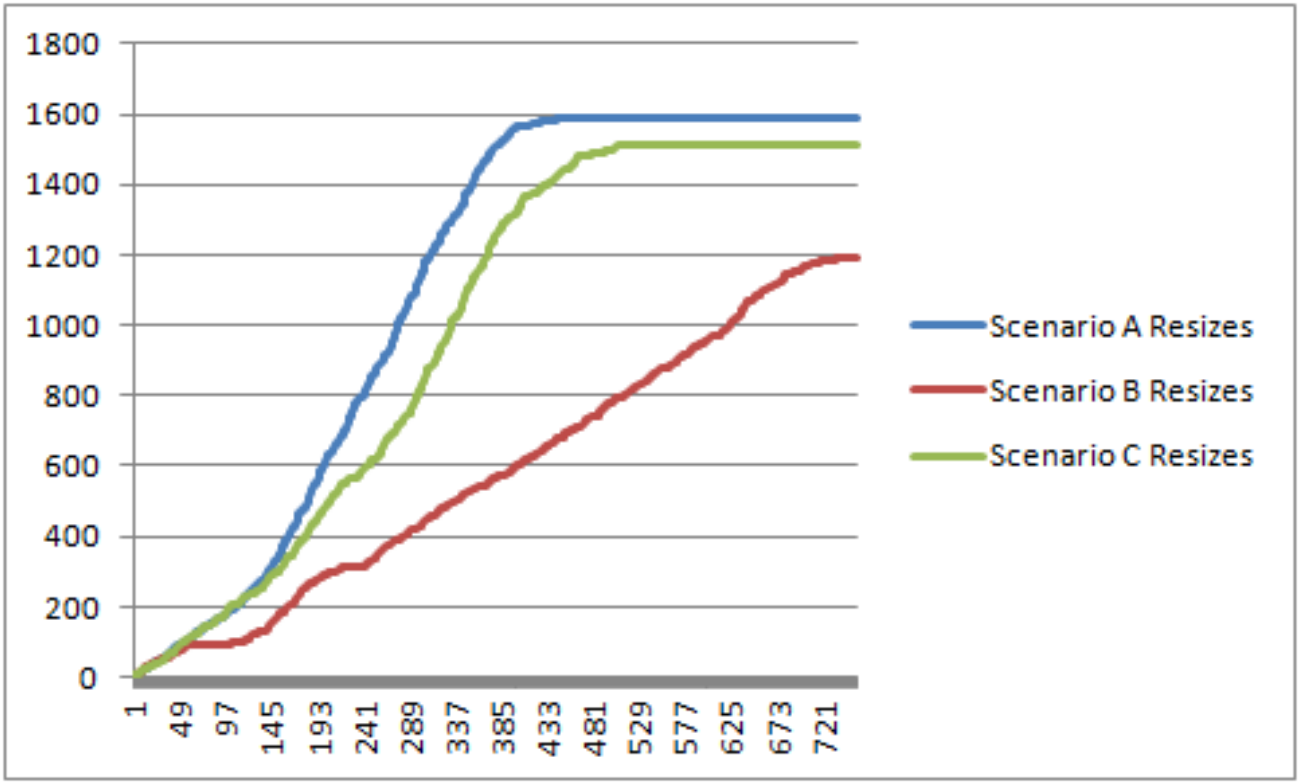


Performance (Scheduler B)

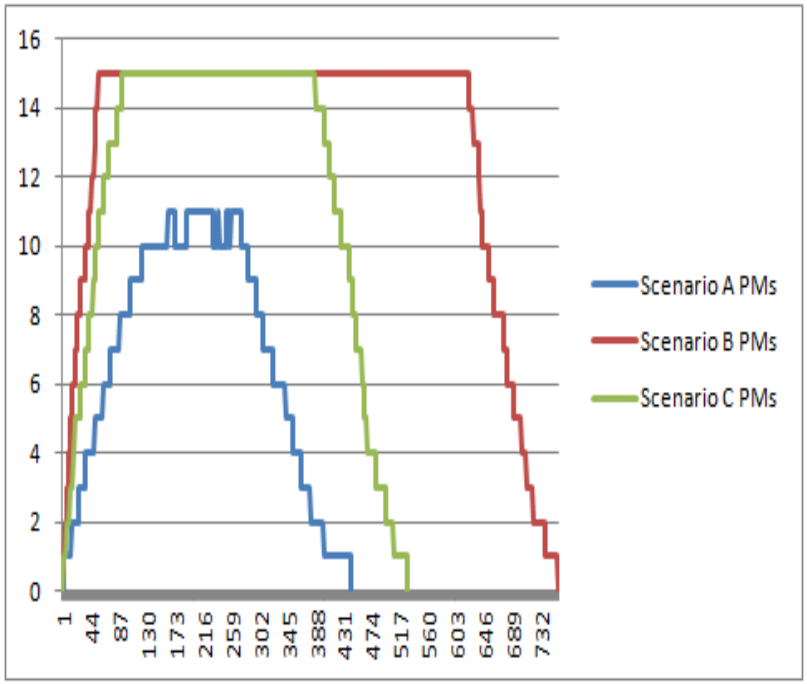


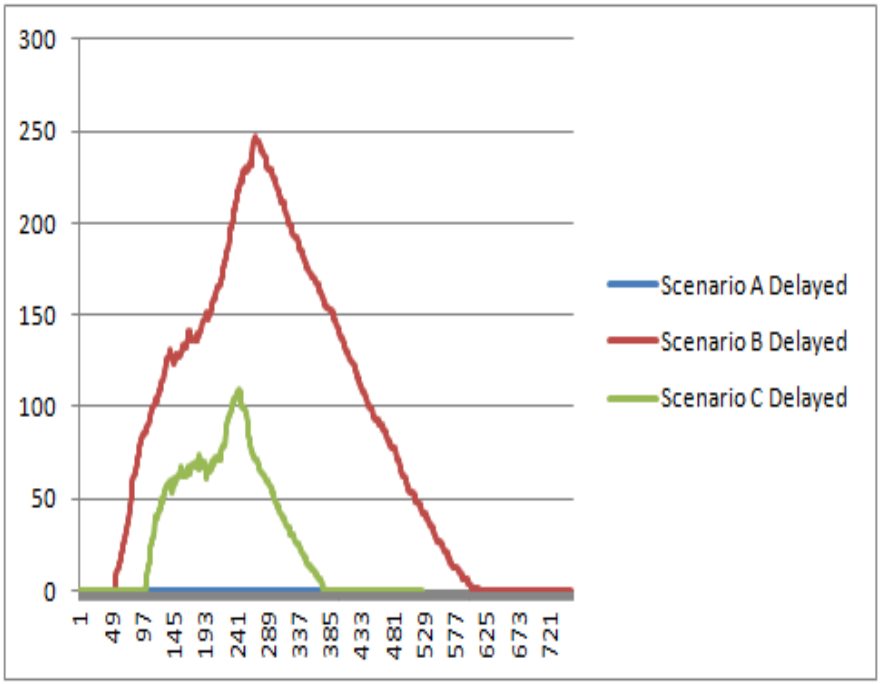


Performance (Scheduler B)



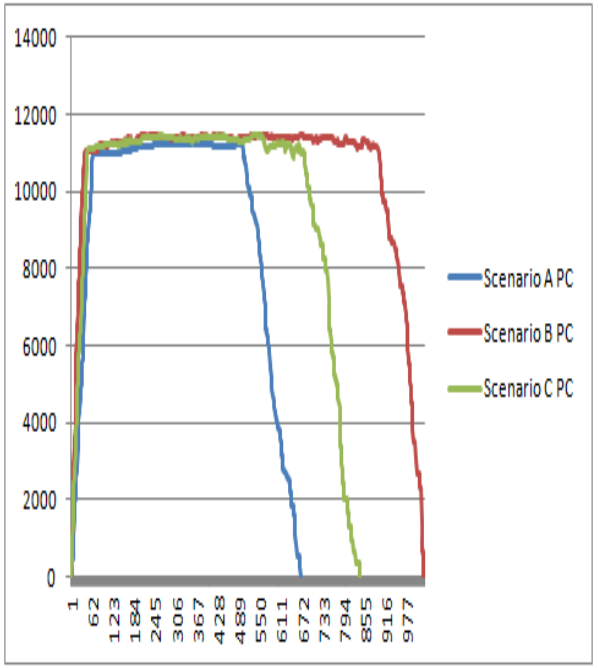
Performance (Scheduler C)



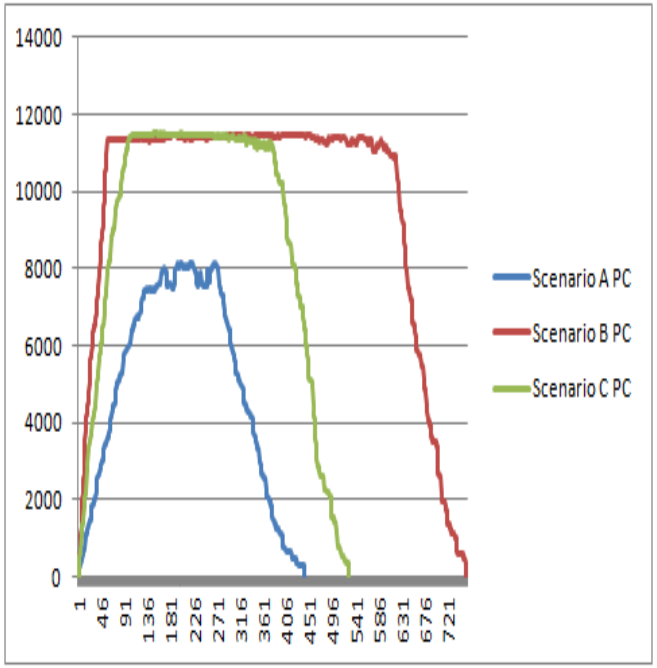


Energy Consumption

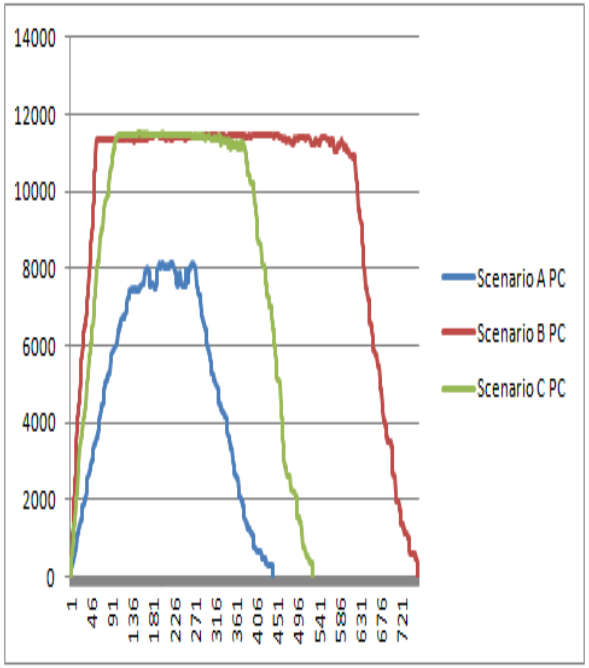
Scheduler A



Scheduler B



Scheduler C



Conclusion

- Intelligent scheduling saves energy
- Migration is the key
- Additional savings in resize operations