Re-making the Movie-making Machine

Presented by Tim Lorenz

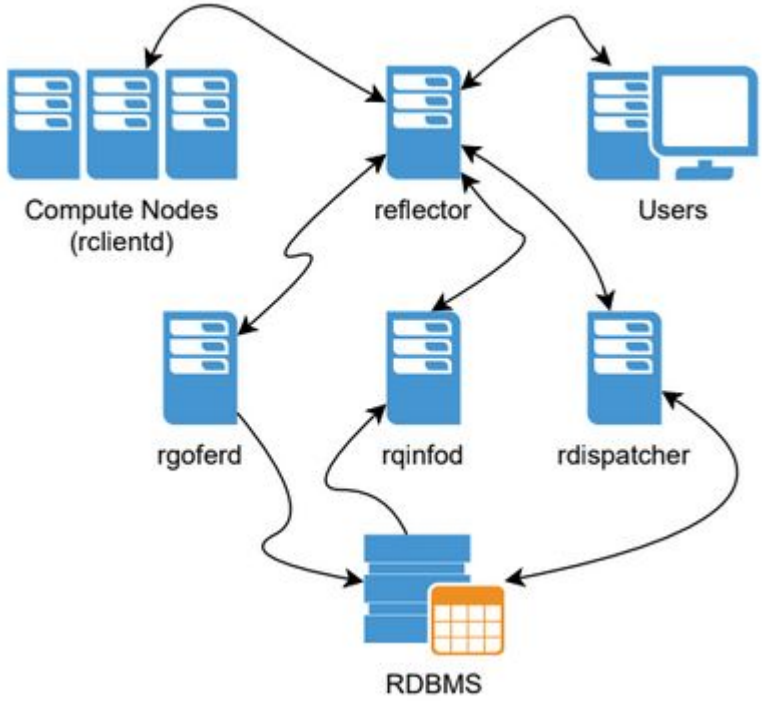
INDUSTRIAL
LIGHT & MAGIC

Contributions

- Improvements to scheduling methods (at ILM) to handle modern VFX workloads
- Simulation of past workloads

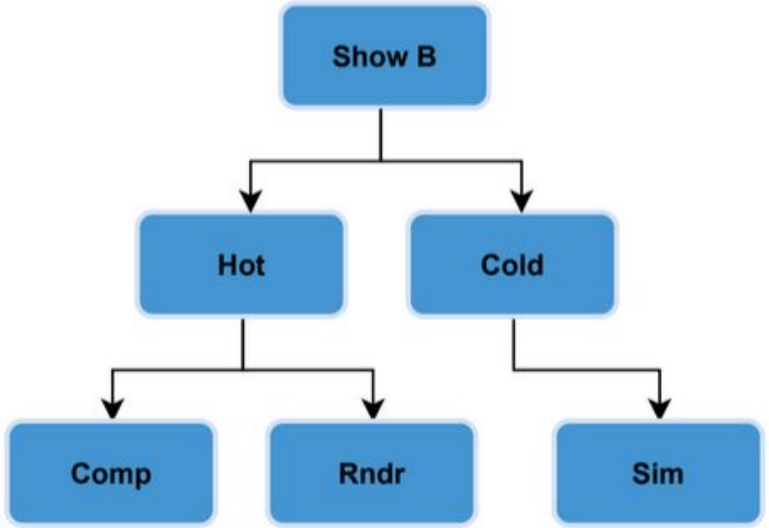
Architecture

- rgoferd recieves a submission
- rqinfod catches queries
- rdispatcher allocates resources



Architecture

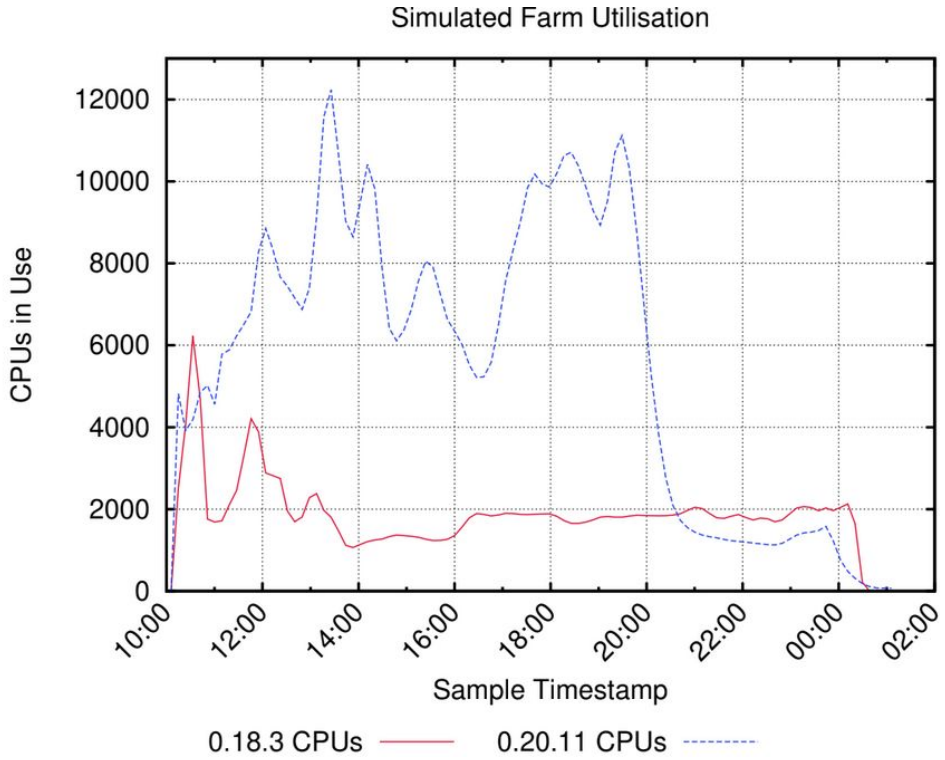
- Each show is assigned pools of resources
- A show's resources become open to others to use if they under-utilize them



Improvements made:

- Non-static number of pools
- Work stealing
- Reduce serialization
- Use integers instead of strings as identifiers
- Waste reduction
- Replacement of the original memory allocator `tcmalloc` with `mimalloc`

Results


Simulated Farm Utilisation
CPUs in Use
12000
10000
8000
6000
4000
2000
0
10:00
12:00
14:00
16:00
18:00
20:00
22:00
00:00
02:00
Sample Timestamp
0.18.3 CPUs
0.20.11 CPUs

Thank you!

Questions?