

AKAMAS

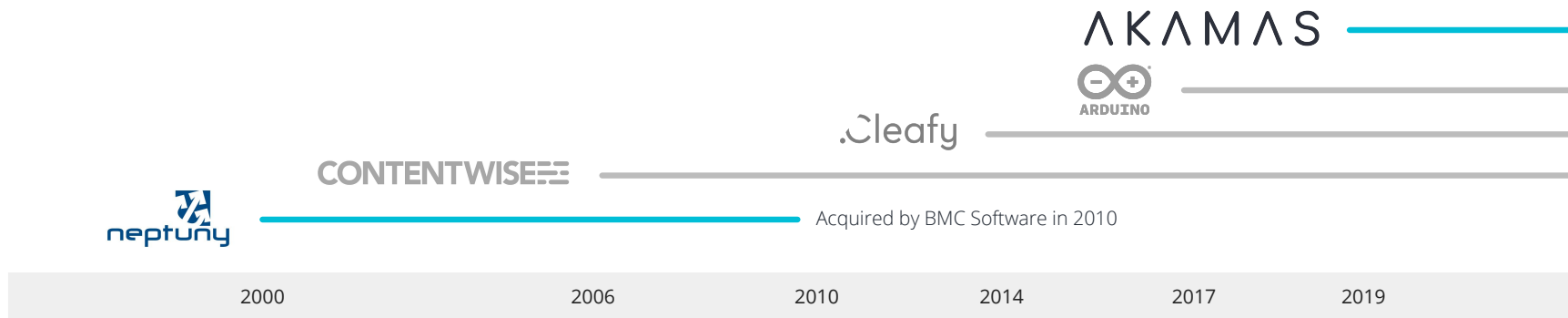
Performance Tuning

Understanding parameters impact

Stefano Cereda, industrial PhD fellow
February 24 2021



Akamas is a Moviri Company



moviri



Founded at Politecnico Milano in 2000 by top experts in performance optimization.



200+
Employees

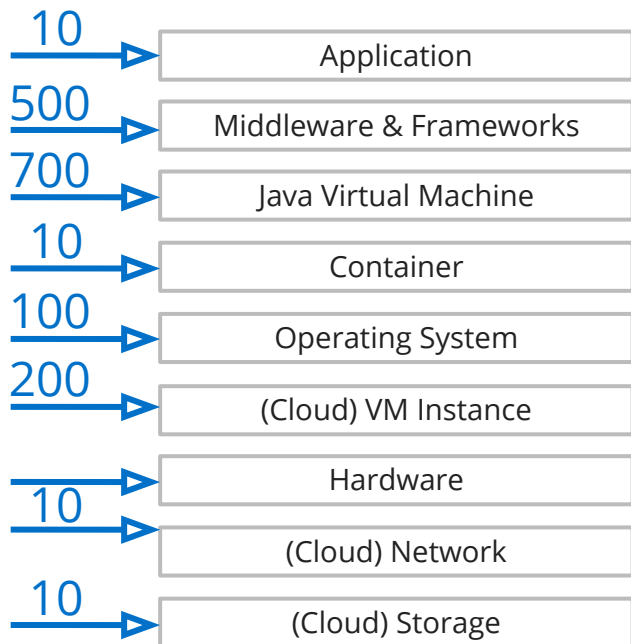


280+
Enterprise
Customers



30+
Countries

Hyper-configuration Beyond Human Scale

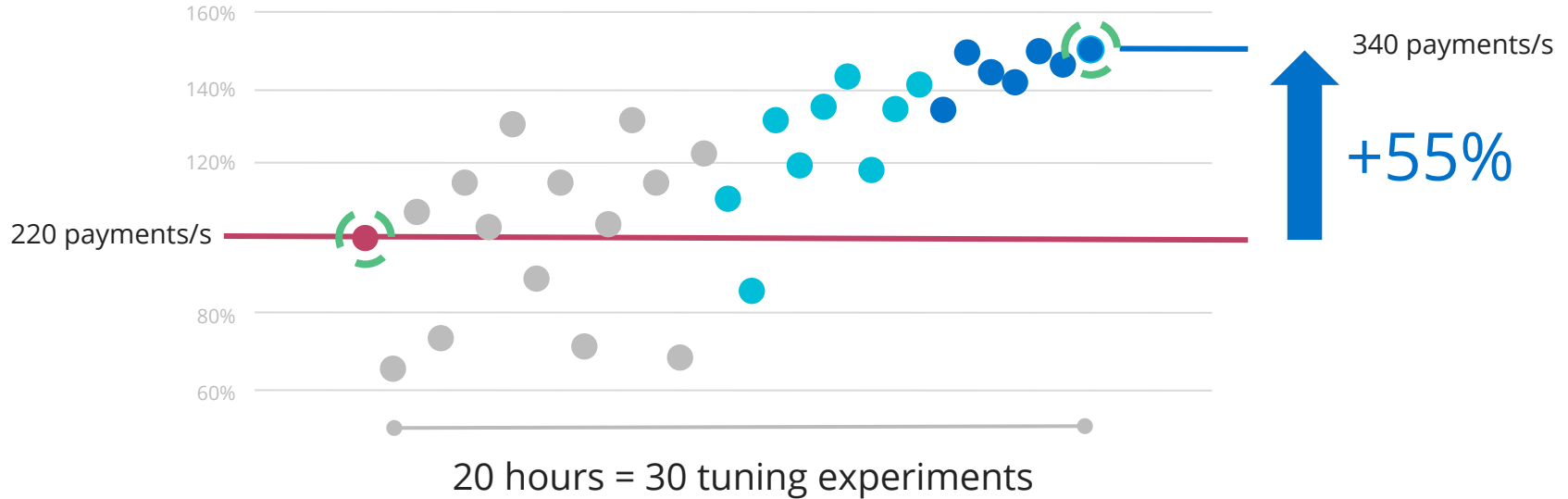


Looking for the optimal settings?

The search space is HUGE and evaluating a configuration is both expensive and time-consuming!

Why Should we Bother?

Goal: maximise payments per second by tuning application, middleware and OS configurations



Today's Problem

- Search space is huge!
- Random sampling is surprisingly efficient.
- We cannot provide as output: “change the following 1000 parameters”.

We need to find the smallest subset of parameters that gives the maximum performance improvement.

Dataset

- Find the dataset here: https://github.com/stefanocereda/polimi_ingioco
- CSV file: 91 rows, 38 columns , tuning MongoDB and Linux
- Each line represents an experiment
- First column is the experiment_id
- Second column is the target performance metric (throughput, to be maximized)
- Other 36 columns contain the applied parameters (some are categoricals)
- First line is the baseline, throughput is 2247 ops/sec
- Max throughput is 9991 ops/sec (4.4x speedup)

Now it's your time

- Find the dataset here: https://github.com/stefanocereda/polimi_ingioco
- An example solution is available
- You can send you solution with a pull-request (even in the next days)
- I will upload a (possible) solution
- stefano.cereda@akamas.io