



# TUNING WITH CHEAP DRINK AND POOR TOOLS

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# ABOUT ME

- Independent consultant ([www.morninglight.co.uk](http://www.morninglight.co.uk))
  - programmer, designer, team leader, teacher
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Java Performance Tuning  
Chania Crete  
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 **Kodewerk**  
Java™ Performance Services



# DISCLAIMER

The resemblance of any opinions, recommendations or comments made during this presentation to performance tuning advice is merely coincidental.



Why is my application slow?



What are we waiting for?

# Application



**something is  
missing**

## Application

Locks, external systems

## JVM/OS

Memory, Hardware  
management

## Hardware

CPU, Memory, Disk IO,  
Network

## Actors

Usage patterns

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# THINGS WE NEED

- Load testing harness
  - supporting data volumes
- Hardware
- Application
  - benchmark
- Monitoring tools

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# BENCHMARKING PROCESS

```
performance = application.baseline();
user.setHappy(performance.meets(requirements));
while ( ! user.isHappy() ) && (user.hasMoney()) {
    profilingResults = application.profile();
    application.fixUsing( profilingResults);
    while ( application.failsQA()
        application.debug();
    performance = application.baseline();
    user.setHappy(performance.meets(requirements));
}
```

# DOMINATING CONSUMER

- Which activities dominates how CPU is utilized
  - operating system
  - Java Virtual Machine
  - application
  - nothing dominates

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If my application is slow and CPU is 100%, what task is using the CPU?

If my application is slow and CPU is not 100%, what is keeping my task out of the CPU?

# THE BOX

- Now that we know what to do, let's go do it!

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# Demo

# SUMMARY

- A good mental model will take you a long way
- Evidence: it's not what you have, it's how you use it!