MD5 HASH CRACKING USING A MAPREDUCE

Hengjie Wang & Jordan Thoms

INTRODUCTION

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- Volunteer your Password

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- Benchmarks

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- Paradigm for **distributing work** on highly parallelizable problems with huge datasets **over a cluster of servers**.

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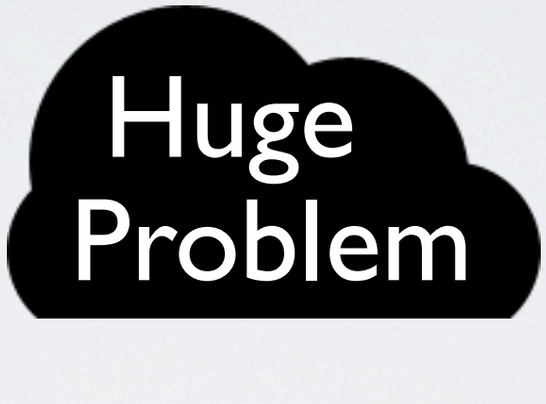

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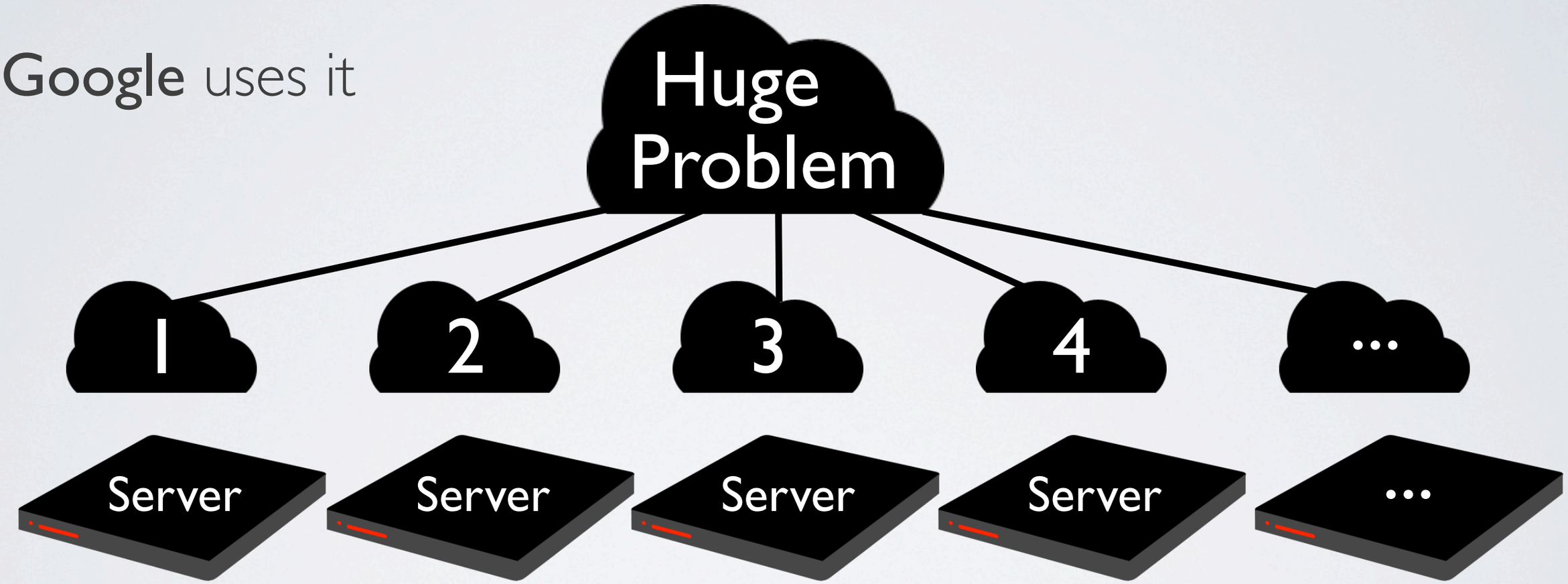

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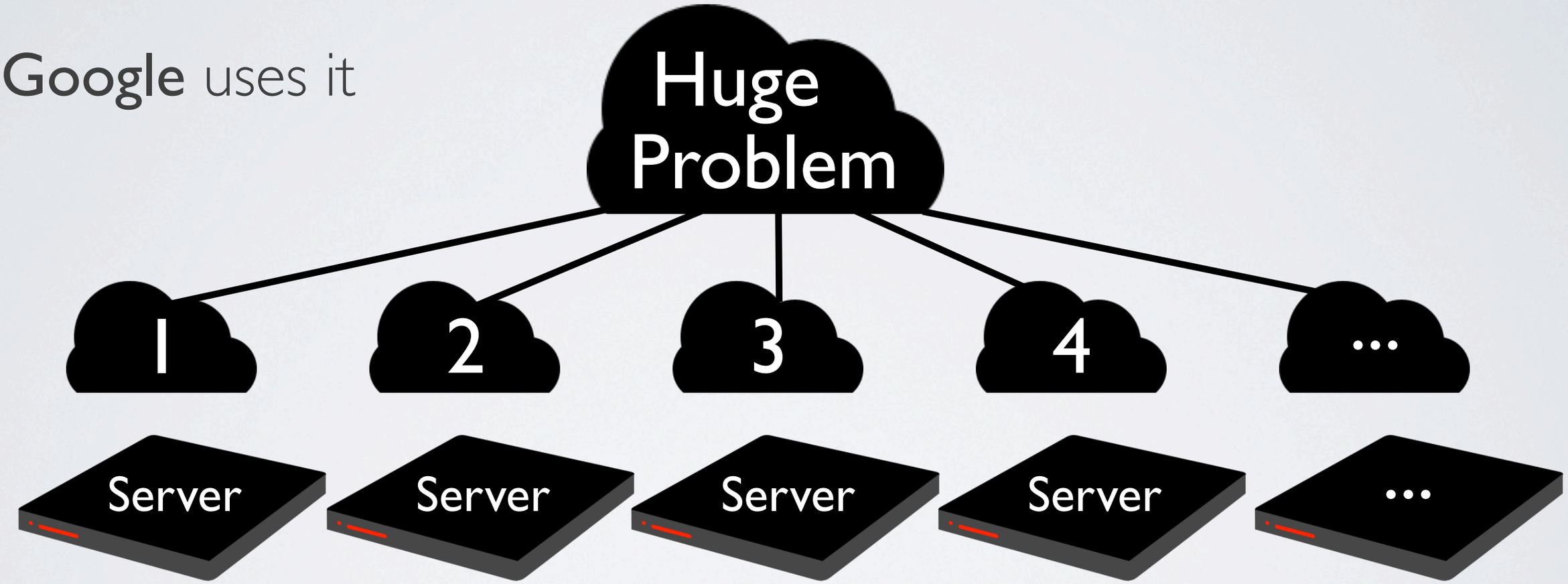

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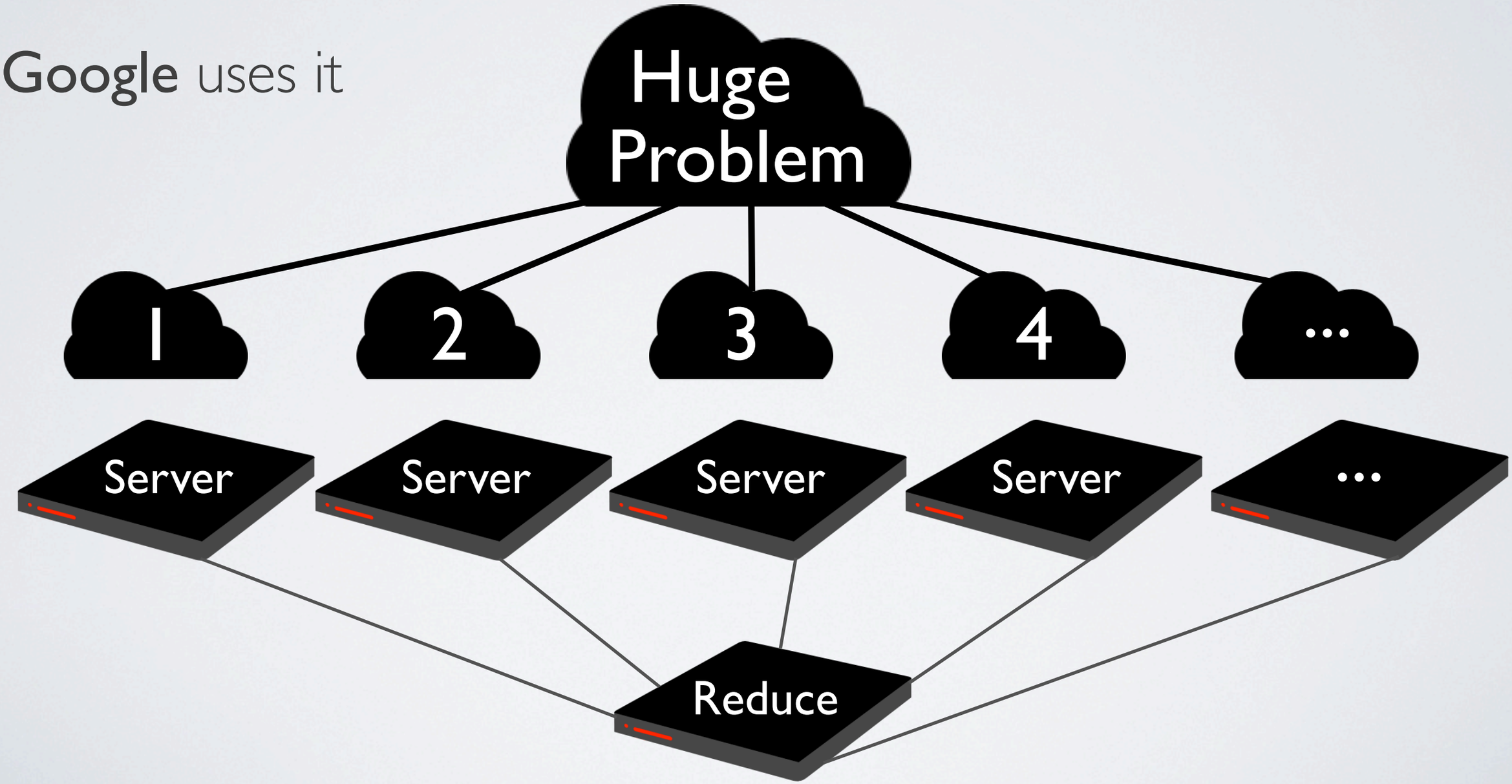

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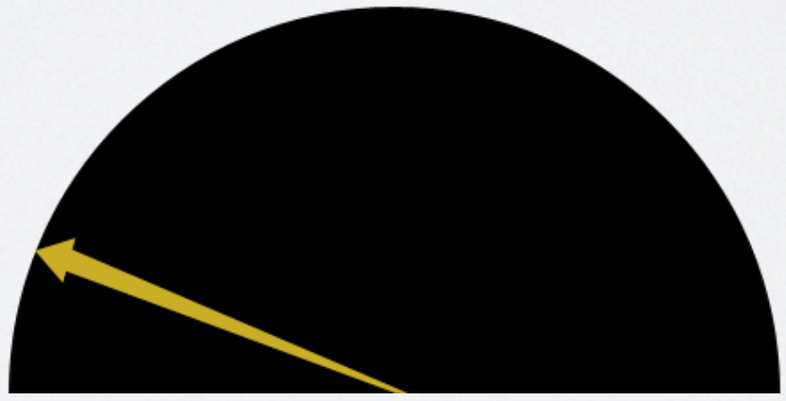

Slow single node performance

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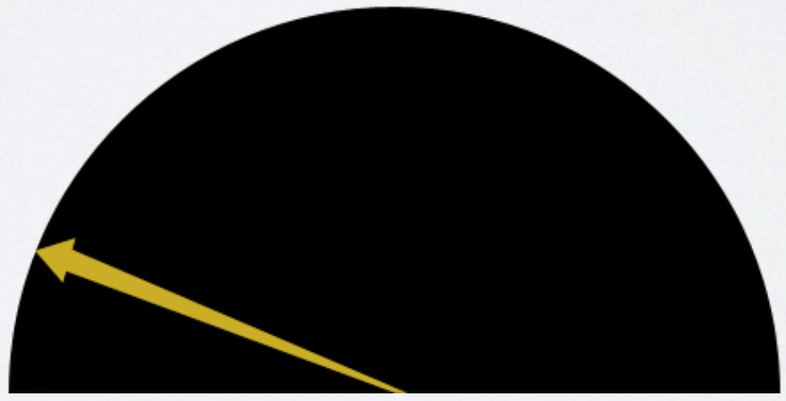


Slow single node performance

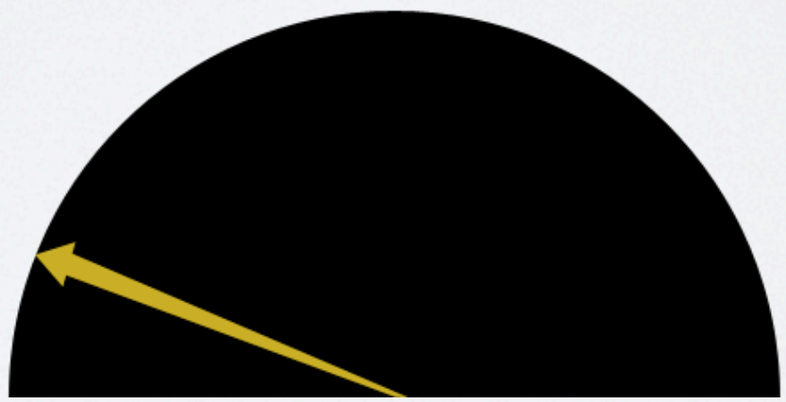
Actual	Expected
?	100

Unpredictable no. of workers

TECHNICAL ISSUES

- Previous used **Google App Engine** (and it sucked)
  - **Uneven** problem mapping
  - **Slow** single worker node performance
  - **Unpredictable** number of worker nodes

Uneven problem mapping



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SOLUTION

- Apache **Hadoop**
- Similar to **Google App Engine**
- Complete control of our own **servers**

APACHE HADOOP

- Similar to Google App Engine
- Distributed File System
- Map Reduce Engine built on top of file system
- Highly available and scalable
  (e.g. Facebook uses it to store 21 petabytes of data)

SERVERS

- Deploy servers
  - JUJU
    - Deploy thousands of servers easily
- Using Amazon Web Service's EC2 server instances