

Architecture Challenges in Cloud Computing

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IndicThreads.com Conference On
Upcoming Technology



2010: Cloud Computing

Introduction -

Prabodh Navare

Solution Architect - Manufacturing

About SAS -

Leader in Business Analytics

\$2.3 billion revenues

SAS R&D Pune

Magarpatta



Cloud apps vs. In-premise apps

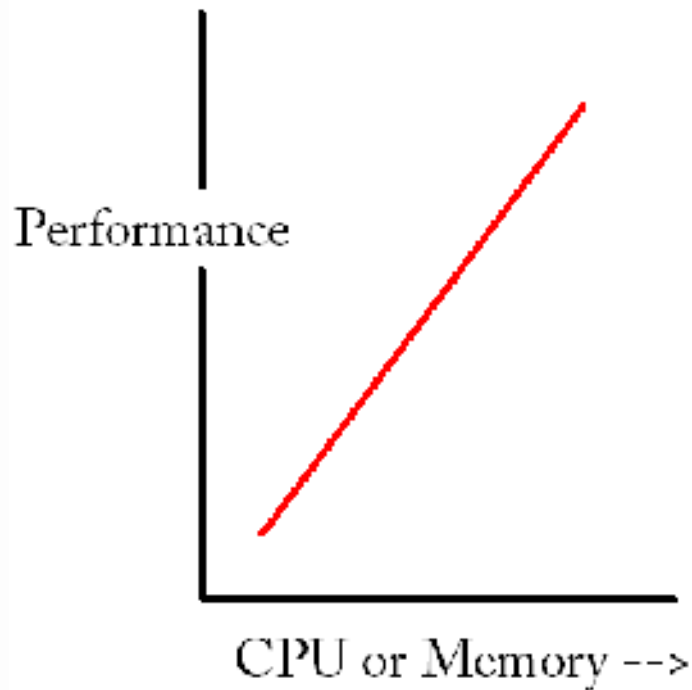
- Exceptional cost saving.
- Exceptional fast deployment.
- High performance is an expectation.



#1 Design for **Auto-Scaling**



Linear Scaling



- Elastic design
- Parallelization of tasks
- In-memory execution
- Caching



In an average computer, it takes the CPU approximately 200ns (nanoseconds) to access RAM compared to 12,000,000ns to access the hard drive.

This is equivalent to what's normally a 3 1/2 minute task taking 4 1/2 months to complete!



#2

Design for High Performance



Lamp Stack

(Linux, Apache, MySQL and PHP)



Lamp Stack (Current)

(Linux, Apache, MySQL and PHP)

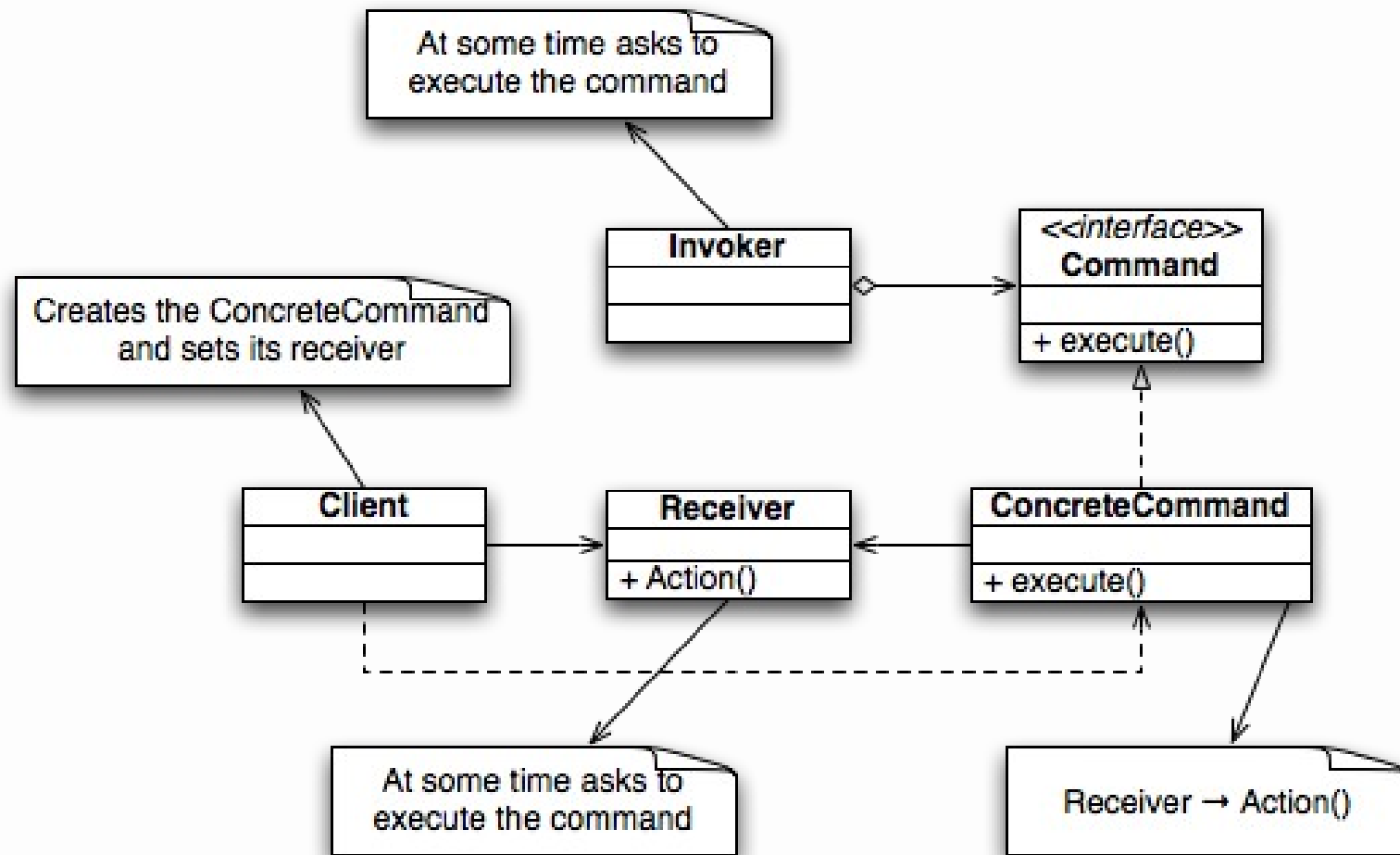
- Memcache
- Hadoop



#3 Design for **Failover**



Command Pattern for Failover



Next...

Is customer Lock-in good or bad?



#4 Design for Data Portability



Standards

- Dataportability.org



- ISO/TS 8000-110:2008



#5
Design for
Pay-as-you-go



Costing of my Service ?

Amount of shared memory used, tech support levels, CPU cycles, hard disk space, bandwidth used, electricity, the ROI for the customer etc...



Pay-as-you-go

- Support a billing system with stats of user pattern.
- Design different flavors of service.



Architecture Challenges!!

#1 Design for Auto-scaling

#2 Design for High performance

#3 Coding for failure

#4 Design for Data portability

#5 Design for Pay-as-you-go



Thank you!

