How to train your Jenkins? … to Use Your Resources

Effectively and Get More Value for Each Buck Spent on Resources

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#jenkinsconf

At eBay Inc. we take CI very seriously

Dude, you're the best.

But you broke the build.

Takipi.com

Background   - CI in PayPal

- One Ginormous Jenkins Instance, customized for PayPal

- 40,000 runnable jobs

- 12,000 builds are run each day

- Java, Node, Python, and C++ stacks, Fortify and Freestyle jobs too

- Unit test and deploy flows

- One Jenkins master with a pool of a hundred Jenkins slaves

- Specialized "Monster Machine" stages build 40,000,000 lines of code in

  a half hour

Background   - CI in eBay Marketplaces
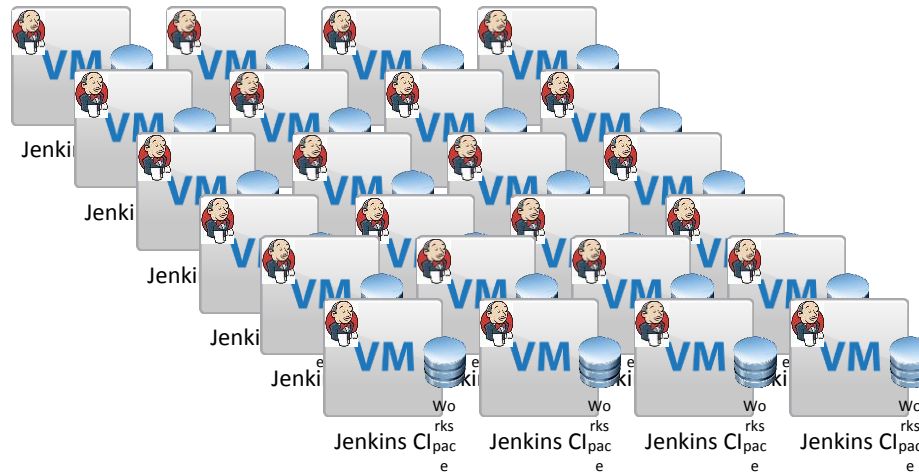
- Individual VMs running Jenkins for each Application

- 2500+ VMs in use

- Each Jenkins would have 2 executor on master to perform builds

Individual Jenkins VMs

Pros
Can add their own plug-ins
Can upgrade to various versions of Jenkins
Issues are isolated to one instance

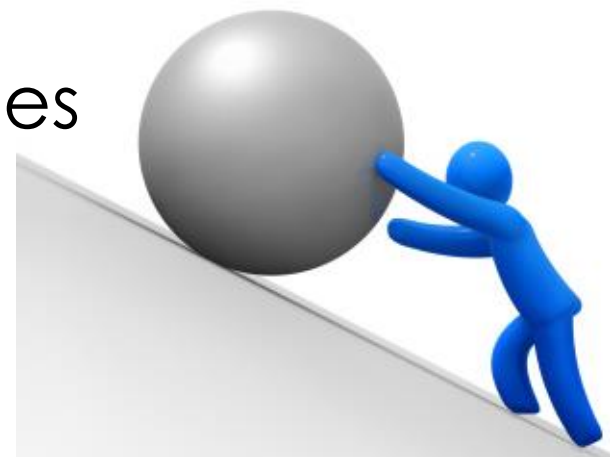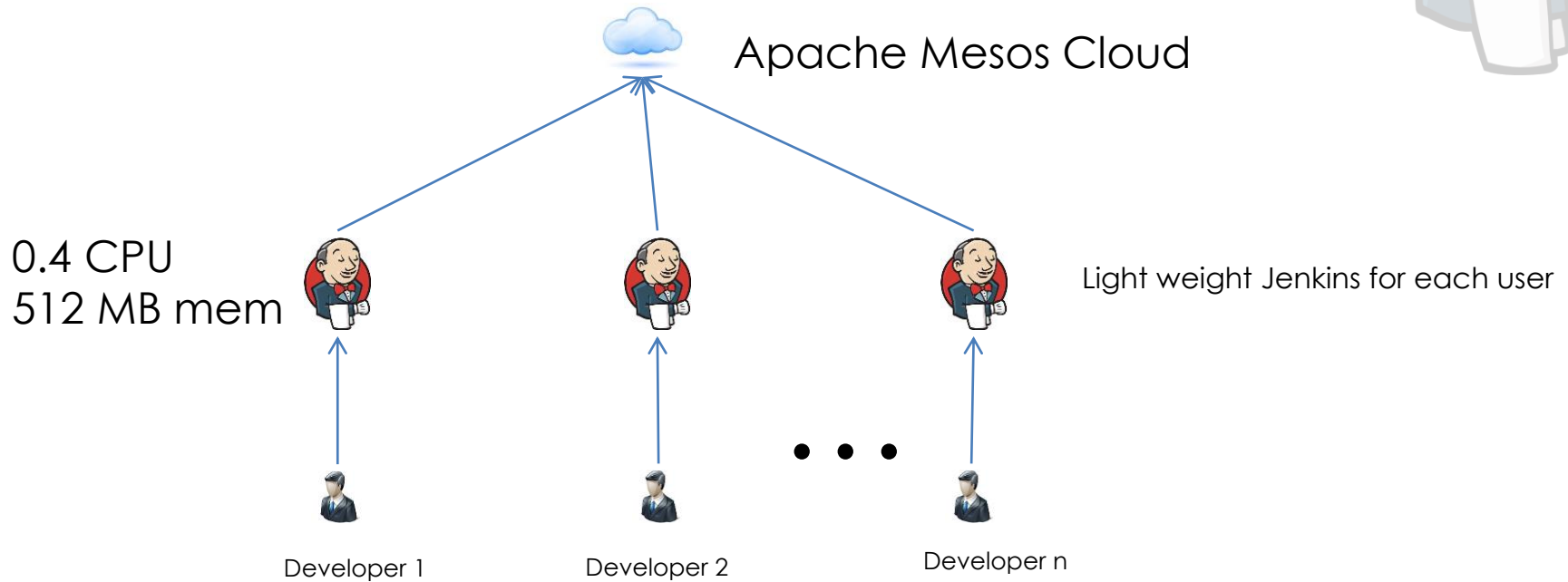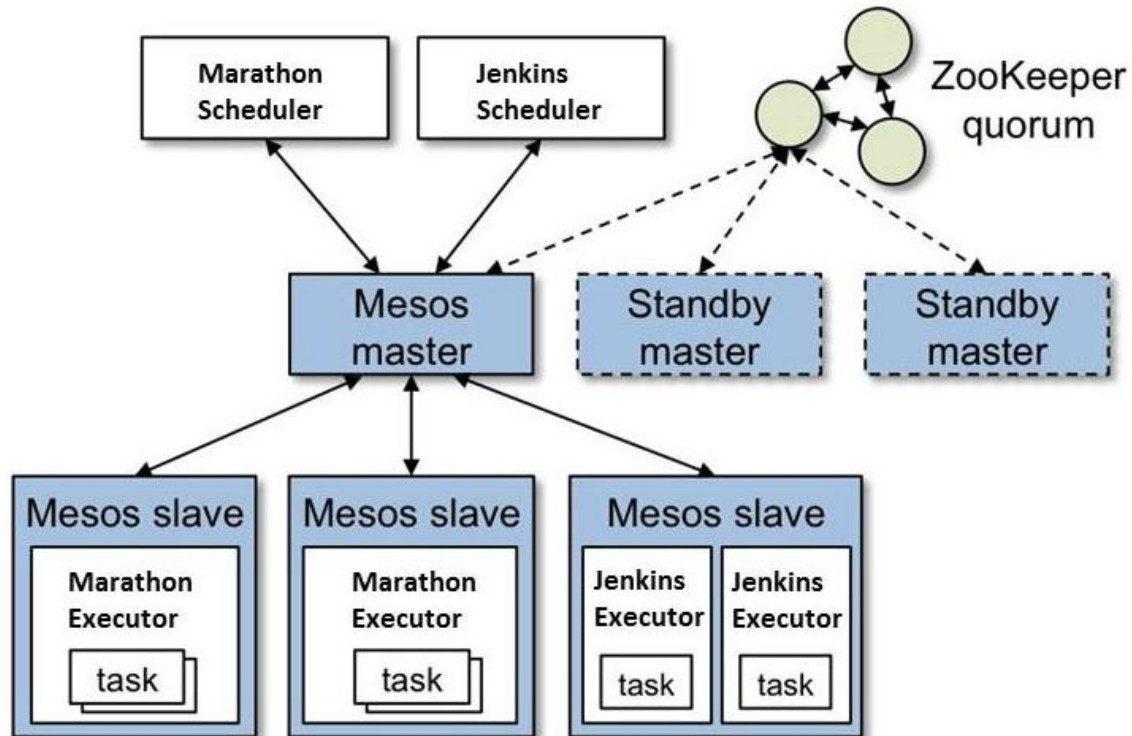| Cons |
|---|
| Poor resource utilization - < 10% |
| Cost of maintaining 2500+ VMs – Millions of $ every year |
| Provisioning VMs takes several minutes |
| Individual instances have local storage of limited size |
| CI's can disappear, losing all data and build history |

New CI Architecture - Challenges

- Put a smile on Dev-Ops

- Optimal utilization of resources

- Preserve user experience

- High availability

- Self healing infrastructure

Light weight Jenkins

Apache Mesos Cloud

0.4 CPU
512 MB mem

Light weight Jenkins for each user

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Developer 1   Developer 2   Developer n
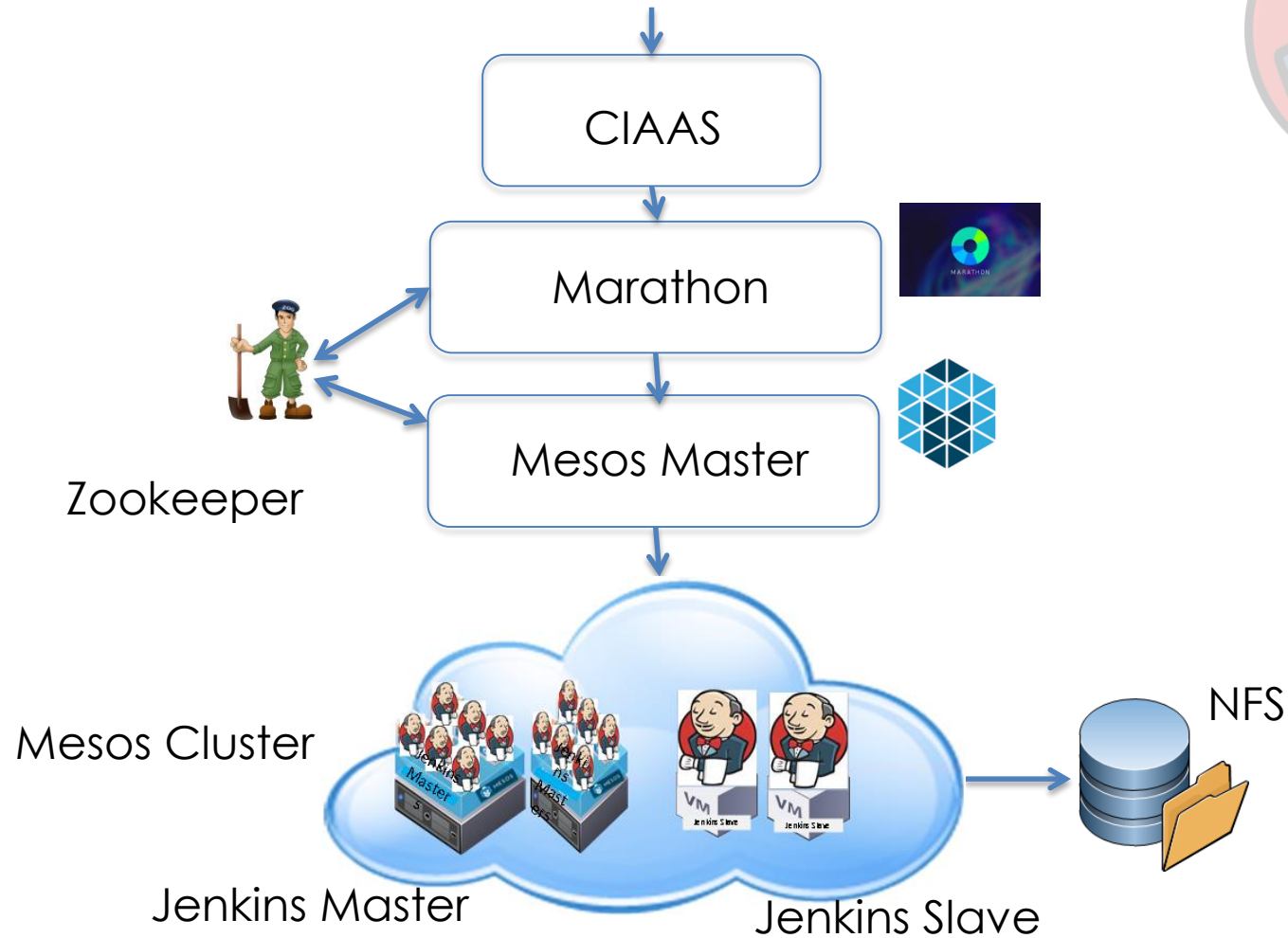
Mesos Architecture

Build slaves - Jenkins Mesos Plugin

- Jenkins Mesos plugin community is very active

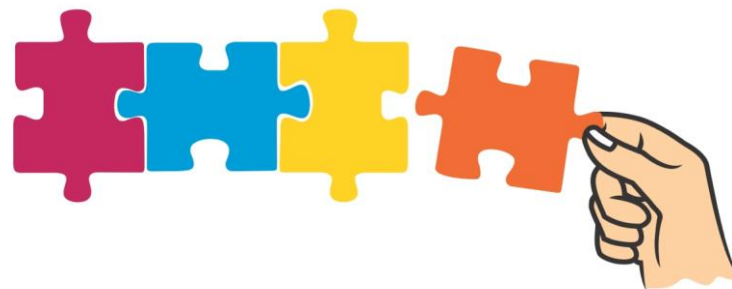- We have contributed enhancements/patches to the plugin

CI Application life cycle

Request for CI

CIAAS

Marathon

Zookeeper

Mesos Master

Mesos Cluster

Jenkins Master

Jenkins Slave

NFS

Jenkins Mesos Plugin - our Contributions

- Custom workspace
- Multiple flavors of slaves
- Access to workspace
- Enable Maven jobs
- Disconnect of slaves after idle timeout

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