

零压力Java组件部署

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95% of ATM machines world wide 🛡️



R.I.P.

50+ Teams

400+ Java Projects



Site-wide platform upgrade **within an hour**

Kernel → Agent → Category About



部署方式: 1 -> 3 -> 3 -> 3 (每次三台) 错误处理: 中断后续发布 发布控制: 自动(0秒) 冒烟测试服务: 关闭 类别: Phoenix-Kernel 版本: 0.4.1-blackhole

7285: Tuangou-Tracking-Sub-Web-SI-Qq	successful
7286: Tuangou-Tracking-Web	successful
7287: Tuangou-Wap	successful
7288: Tuangou-Web	successful
summary	
10.1.7.14	SUCCESSFUL
10.1.7.17	SUCCESSFUL
10.1.7.21	SUCCESSFUL
10.1.8.149	SUCCESSFUL
10.1.8.24	SUCCESSFUL
10.1.7.199	SUCCESSFUL
10.1.4.146	SUCCESSFUL
10.1.4.147	SUCCESSFUL
10.1.8.74	SUCCESSFUL
10.1.8.29	SUCCESSFUL
10.1.8.79	SUCCESSFUL
10.1.7.134	SUCCESSFUL
10.1.7.122	SUCCESSFUL
7289: Tuangou-Web-Job	successful
7290: Tuangou-Web-Movie	successful
7292: Usercard-Server	successful
7293: Usercard-Web	successful

pending doing warning cancelled success failed

```
[2014-04-01 10:01:42] [INFO] Deploy URL: http://10.1.7.14:3473/phoenix/agent/deploy?op=deploy&deployId=7288&domain=tuangou-web&version=0.4.1-blackhole&warType=phoenix-agent&gitUrl=ssh://git@192.168.7.7/arch/phoenix-agent.git
[2014-04-01 10:01:42] [INFO] Deploying phoenix kernel[0.4.1-blackhole] to host[10.1.7.14] for deploy(7288) of domain(tuangou-web) ...
[2014-04-01 10:01:42] ACCEPTED
[2014-04-01 10:01:42] [INFO] Getting status from host[10.1.7.14] for deploy(7288) ...
[04-01 10:01:42] [INFO] [workflow.Engine] current step START
[04-01 10:01:42] [INFO] [workflow.Engine] step success

[04-01 10:01:42] [INFO] [workflow.Engine] current step INIT
[04-01 10:01:42] [INFO] [upgrade.DefaultAgentUpgradeStepProvider] start upgrading agent to version 0.4.1-blackhole
[04-01 10:01:43] [INFO] PID is 3555
[04-01 10:01:43] [INFO] CMD is /data/webapps/phoenix/phoenix-agent/classes/script/self_upgrade.sh --func=init
[04-01 10:01:43] [INFO] [workflow.Engine] step success

[04-01 10:01:43] [INFO] [workflow.Engine] current step GIT_PULL
[04-01 10:01:43] [INFO] [upgrade.DefaultAgentUpgradeStepProvider] start upgrading agent to version 0.4.1-blackhole

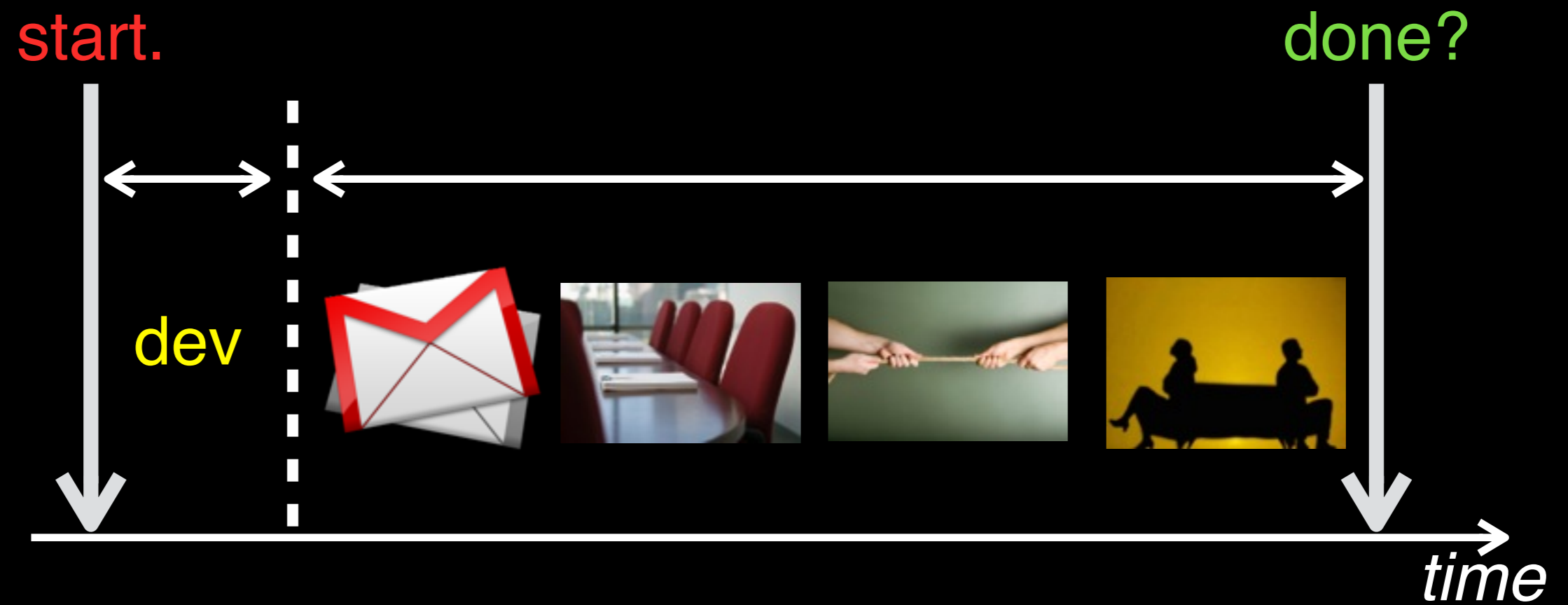
[04-01 10:01:43] [INFO] PID is 3579
[04-01 10:01:43] [INFO] CMD is /tmp//phoenix-agent-self-upgrade.sh.1396317702955 --agent_git_url=ssh://git@192.168.7.7/arch/phoenix-agent.git --agent_version=0.4.1-blackhole --
tx_log_file=/data/applogs/phoenix/transaction/7288/tx.log --agent_doc_base=/data/webapps/phoenix/phoenix-agent/ --agent_git_host=192.168.7.7 --func=gitpull --tmp_script_file=/tmp//phoenix-agent-self-upgrade.sh.1396317702955 --agent_class=com.dianping.phoenix.agent.PhoenixAgent --agent_dryrun_class=com.dianping.phoenix.agent.PhoenixAgentDryRun --dry_run_port=3475 --parent_pid=19567 --lib_path=/usr/local/tomcat/lib
[04-01 10:01:44] [INFO] sync git repo at ssh://git@192.168.7.7/arch/phoenix-agent.git tag 0.4.1-blackhole to /data/webapps/phoenix/phoenix_agent_war_tmp/
[04-01 10:01:44] [INFO] found existing repo, fetching update
HEAD is now at 99b3671 blackhole 1.1.7
From ssh://192.168.7.7/arch/phoenix-agent
* branch master -> FETCH_HEAD
* [new tag] 0.4.1-blackhole -> 0.4.1-blackhole
* [new tag] 0.4.1-blackhole-ppe -> 0.4.1-blackhole-ppe
* [new tag] 0.4.2-blackhole2 -> 0.4.2-blackhole2
Previous HEAD position was 99b3671... blackhole 1.1.7
HEAD is now at a82e150... with blackhole 1.1.8
[04-01 10:02:03] [INFO] repo synced from git
[04-01 10:02:03] [INFO] [workflow.Engine] step success

[04-01 10:02:03] [INFO] [workflow.Engine] current step DRYRUN_AGENT
[04-01 10:02:03] [INFO] [upgrade.DefaultAgentUpgradeStepProvider] start upgrading agent to version 0.4.1-blackhole

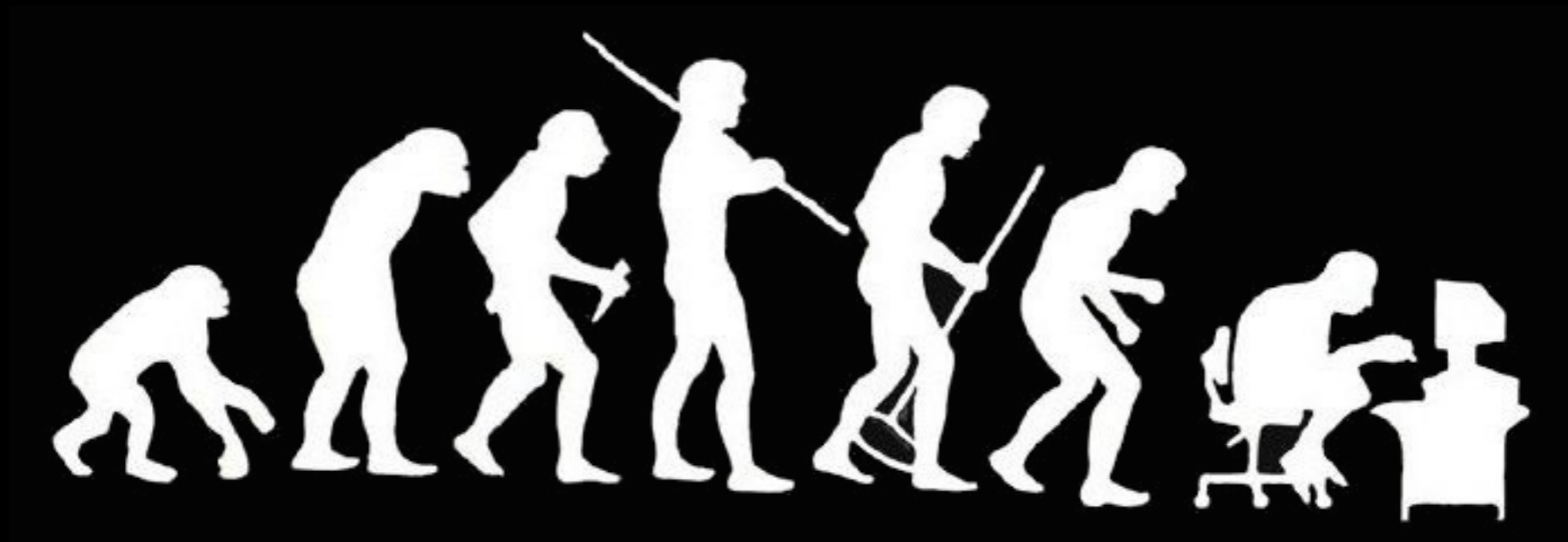
[04-01 10:02:03] [INFO] PID is 4350
[04-01 10:02:03] [INFO] CMD is /tmp//phoenix-agent-self-upgrade.sh.1396317702955 --agent_git_url=ssh://git@192.168.7.7/arch/phoenix-agent.git --agent_version=0.4.1-blackhole --
tx_log_file=/data/applogs/phoenix/transaction/7288/tx.log --agent_doc_base=/data/webapps/phoenix/phoenix-agent/ --agent_git_host=192.168.7.7 --func=dryrun --tmp_script_file=/tmp//phoenix-agent-self-upgrade.sh.1396317702955 --agent_class=com.dianping.phoenix.agent.PhoenixAgent --agent_dryrun_class=com.dianping.phoenix.agent.PhoenixAgentDryRun --dry_run_port=3475 --parent_pid=19567 --lib_path=/usr/local/tomcat/lib
Starting phoenix agent com.dianping.phoenix.agent.PhoenixAgentDryRun 3475 /data/webapps/phoenix/phoenix_agent_war_tmp
```

Tuangou-Web

Once

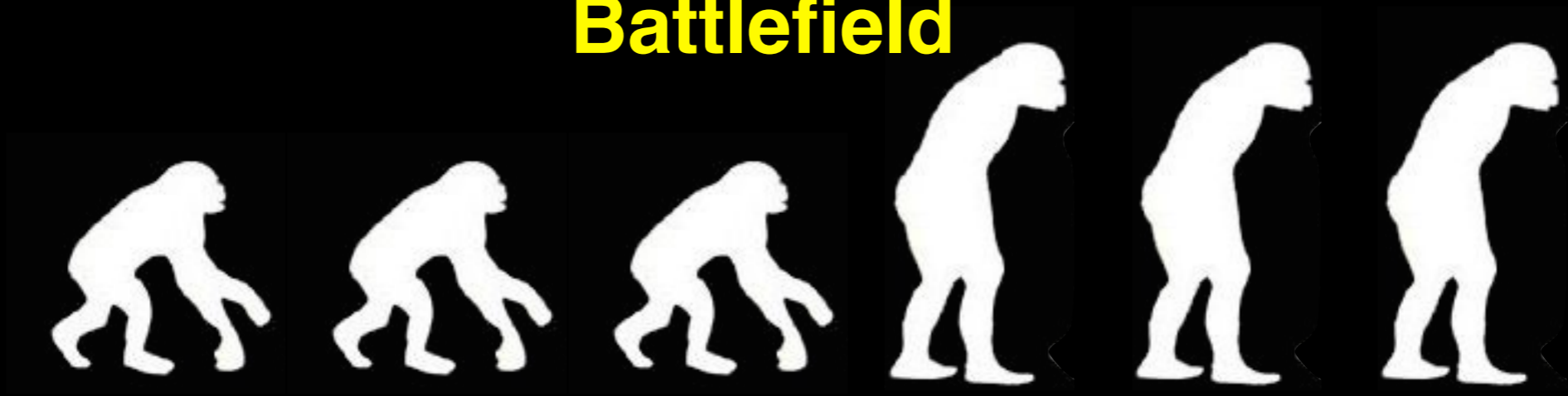


So what?



Arsenal

Battlefield



Security



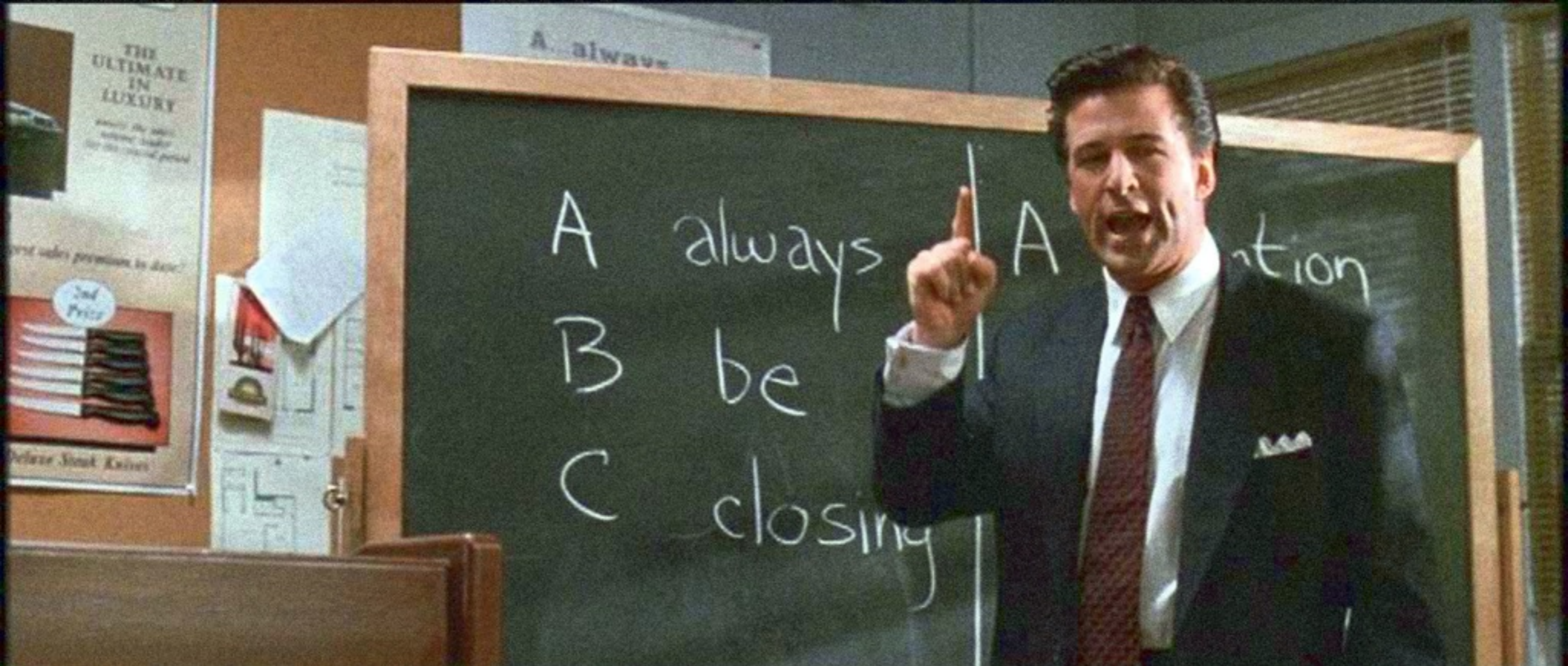
Too many versions to maintain



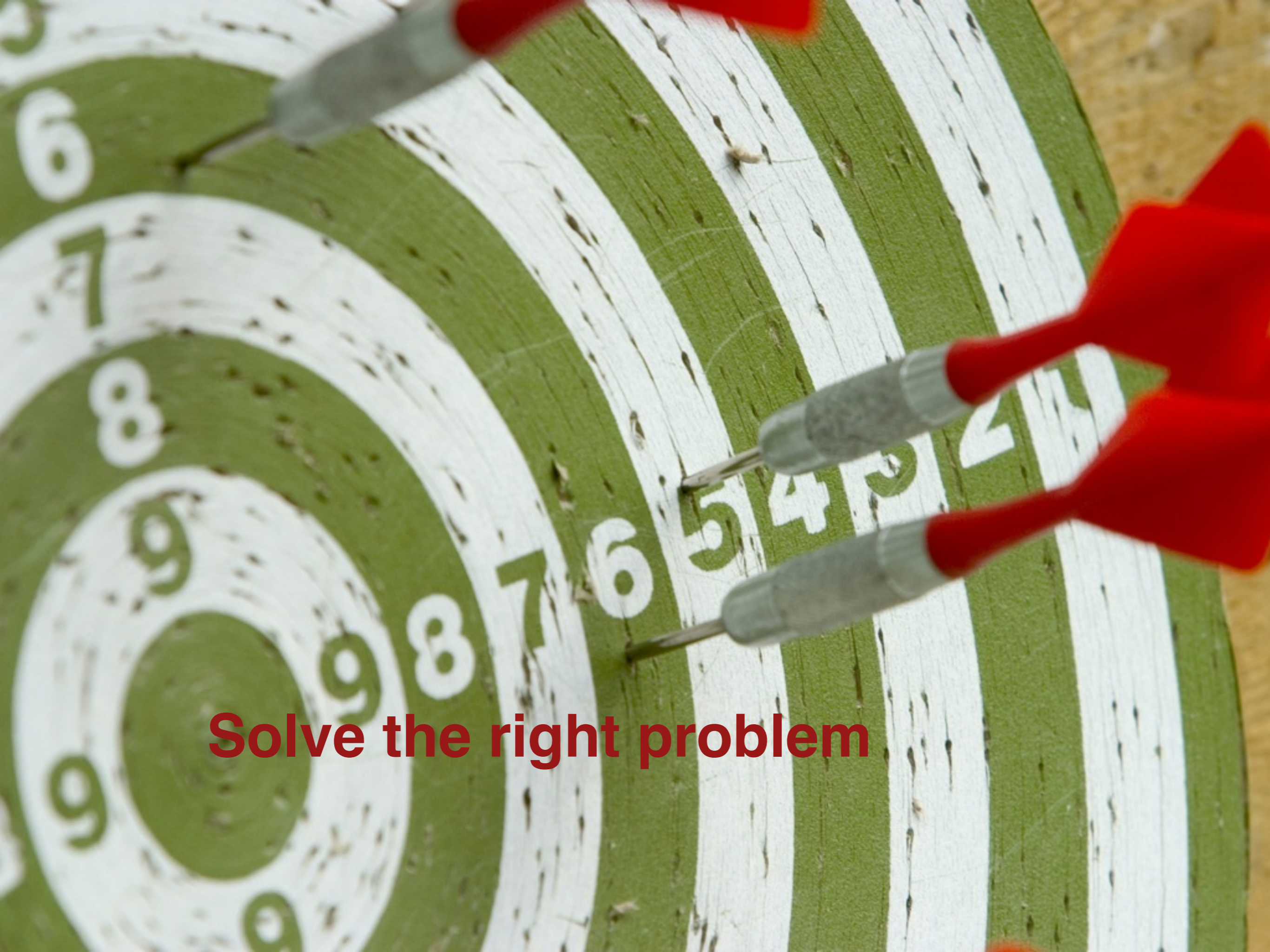
Helpless team members



We DID try our best!



Learn some **sales**!?



Solve the right problem

Align Responsibility with Artifact

NOT role

Deploy platform artifacts by platform team self

Why can't we deploy our platform?

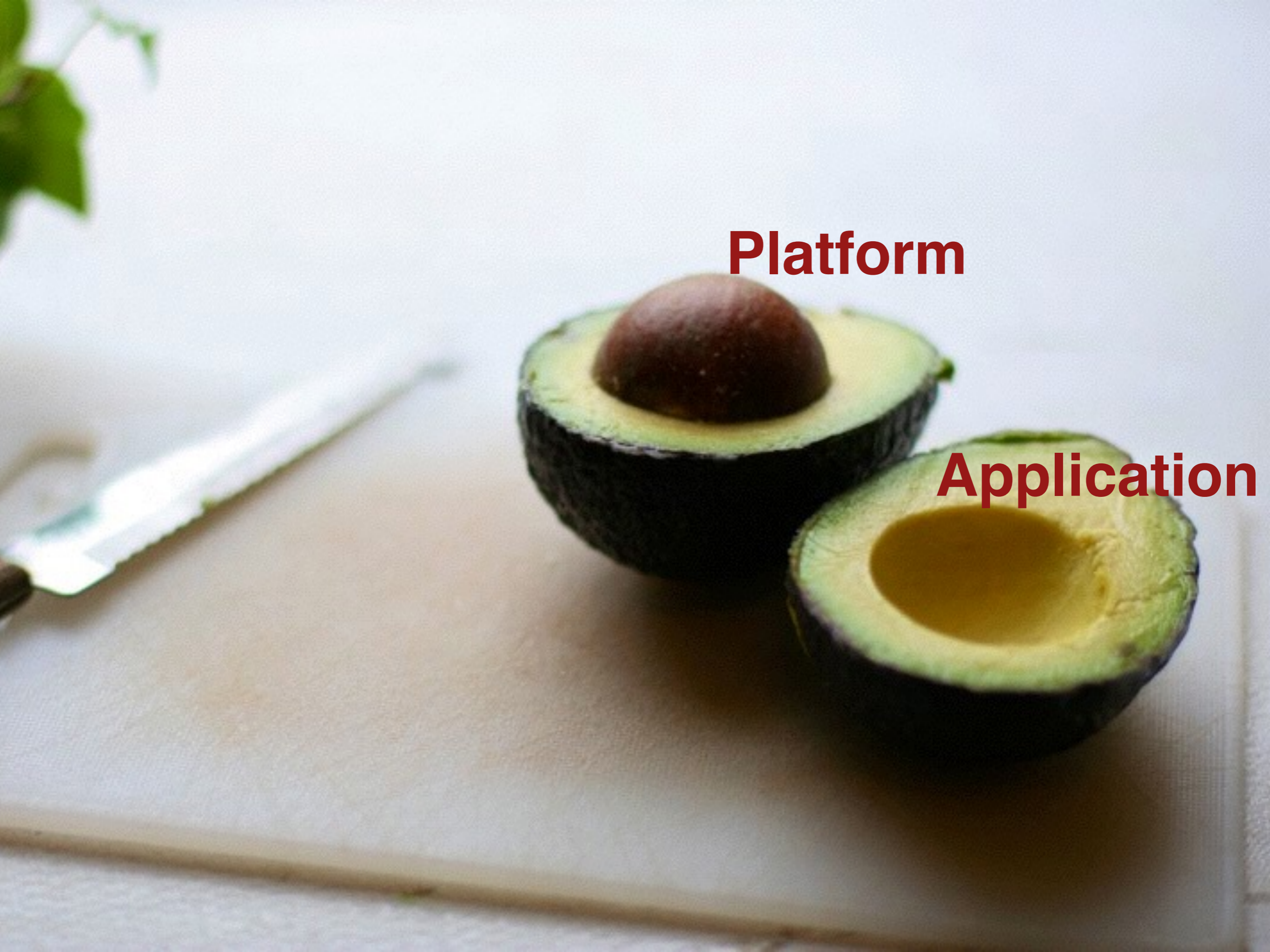
Single Responsibility Principle



Do not share

Platform

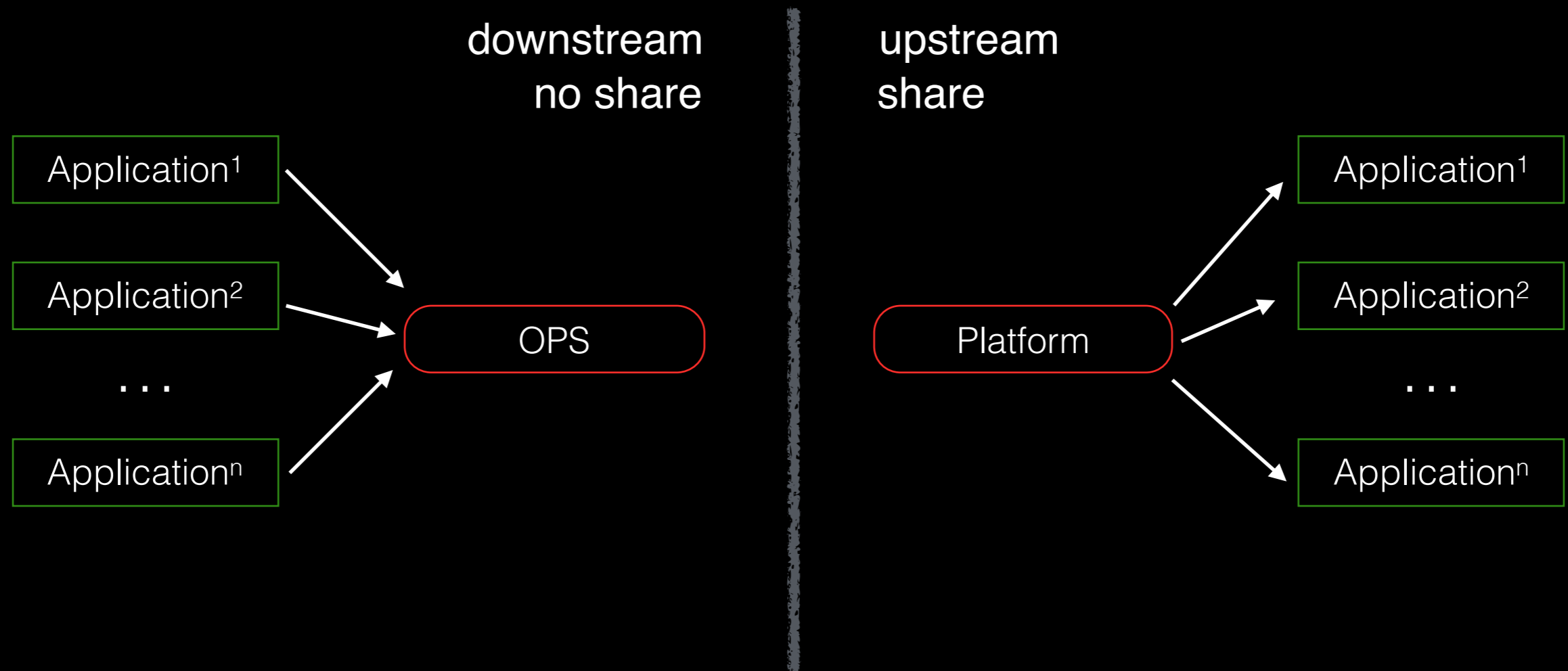
Application



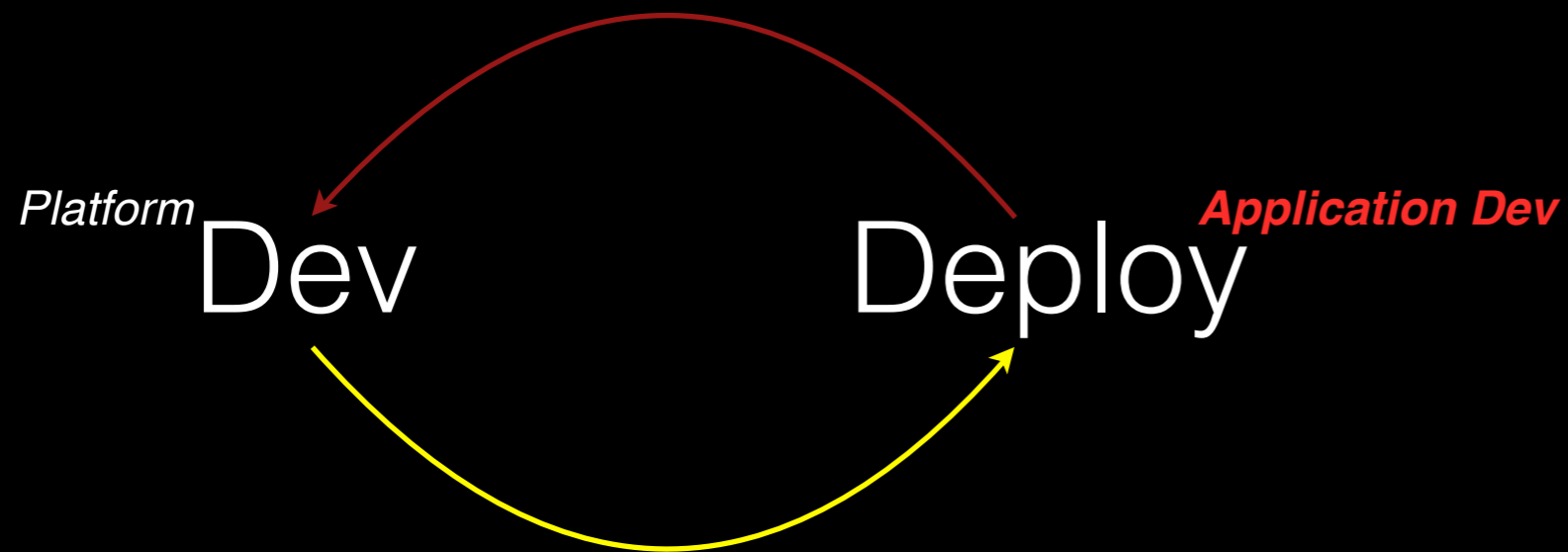
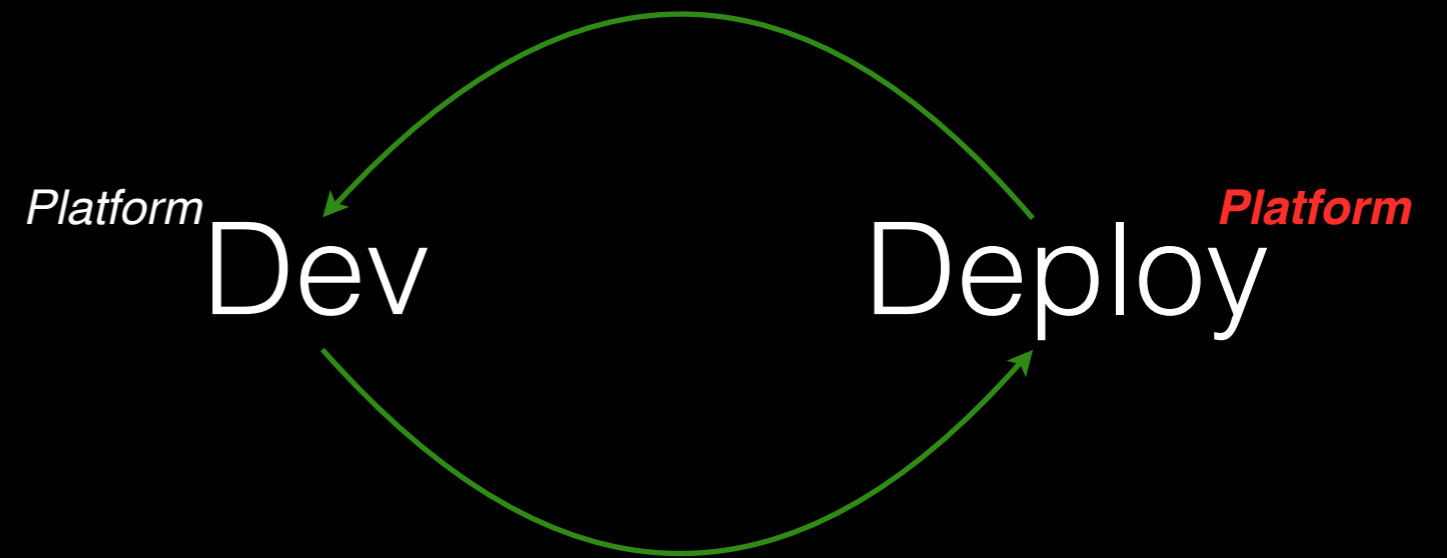
What do we do

1. **Redefine** the platform deploy process
2. **Separate** platform from application
3. **Automate** the deploy process by tools

DevOps vs Our Problem



1. Process



2. Separation

Common Package Format

war(web archive) + Tomcat

File System

Application

Platform(**base**)

In Memory(Runtime)

Application

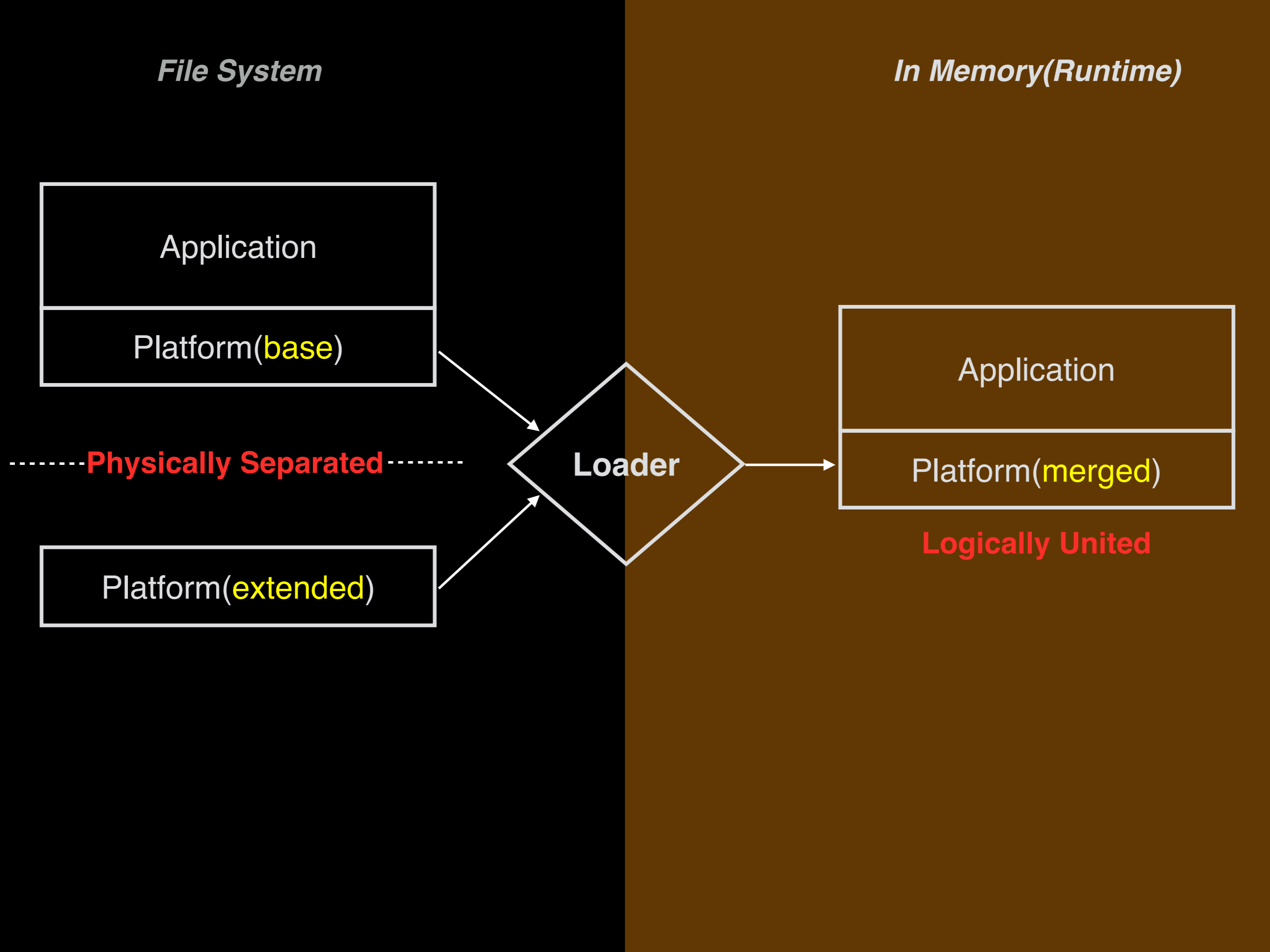
Platform(**merged**)

-----**Physically Separated**-----

Loader

Logically United

Platform(**extended**)



How to Merge

Which version of jar to load

What class to load

How to Merge

WEB-INF/
static resource } Customized WebappLoader *upgrade*

web.xml → Customized web.xml loader *install*

Two Customized Loader

Application+Platform(base)

web.xml

WEB-INF

static resource

WebXmlLoader

WebappLoader

Platform(extended)

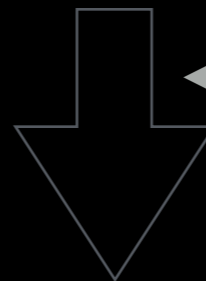
web.xml

WEB-INF

static resource

merging rules

Merged webapp



Layout



1. lib/phoenix-bootstrap.jar
2. conf/Catalina/localhost/ROOT.xml

```
<Context docBase="/xxx-web.war" path="/" reloadable="false">  
  <Loader className="com.dianping.phoenix.bootstrap.Tomcat6WebappLoader"  
    platformDocBase="/phoenix/xxx-web.war"/>  
</Context>
```

Application
Platform

Platform

What's inside platform war

jars	Platform jars
classes	Servlet and Spring components...
web.xml	Bootstrap components above
merging rule	How to merge with application war

Another kind of AOP

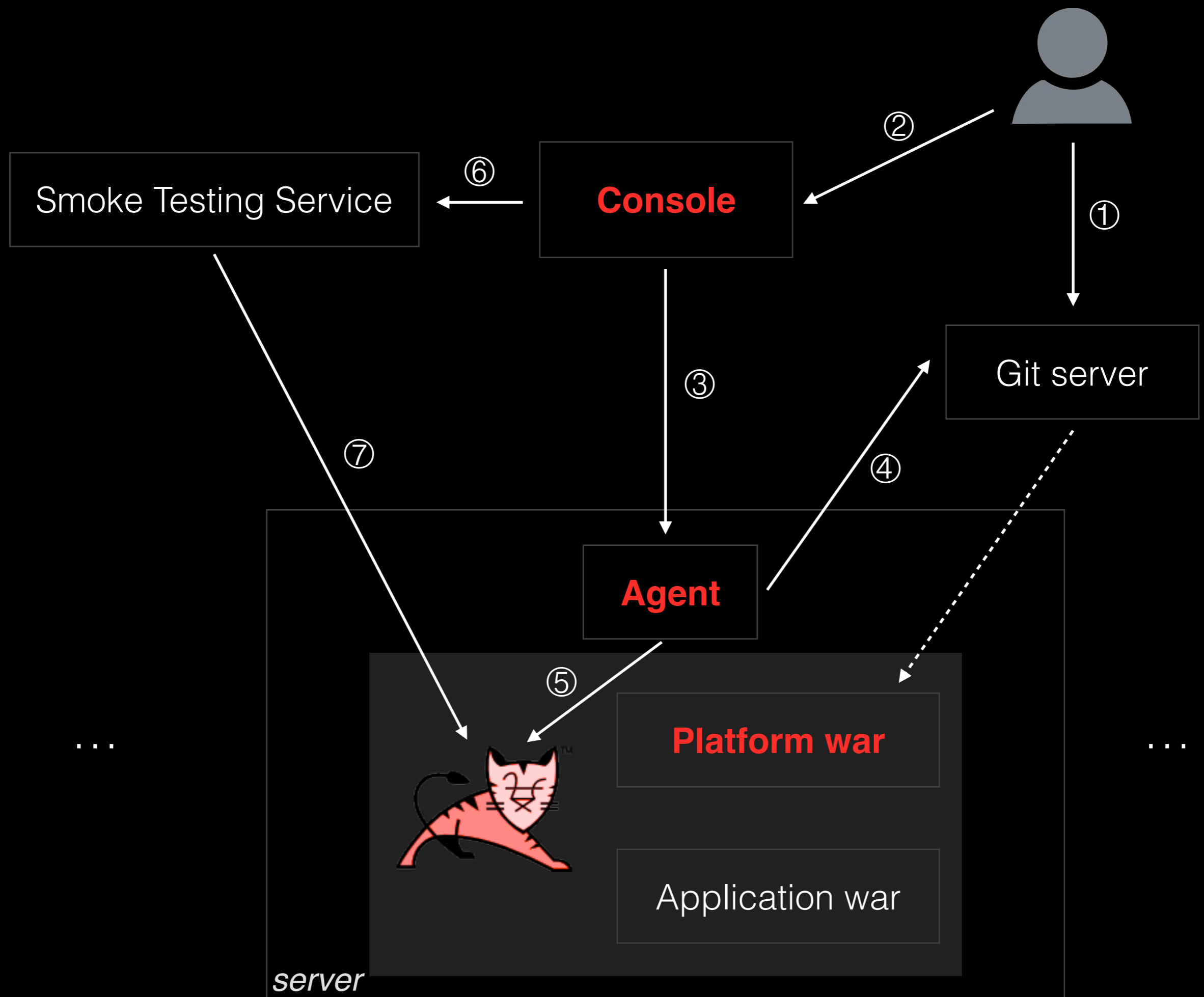
Separation of Crosscutting Concerns

Weaving(Physically Separated)

AOP Compare

	SoC	Advice	Weaving
<i>AOP</i>	inside application	application related	compiler or classloader
<i>Phoenix</i>	between application and platform	platform related	application loader

3. Automation



Ensure Deploy **Safety**

Deploy pipeline

Call automated testing service

Compare application tracking status

Flexible **Merging** Rules

Per application

High/Low/None version priorities

Filter ordering

Sync Back Periodically

Keep Dev and Production the same

Will fail during CI if lag too much

Benefits

Now



Much Less Work(Panic)

Platform Team

Application Team



Incremental Platform

Firewall

Refer request id

Unified health check URL



EVOLUTION OF THE *F1 CAR*

Easier Troubleshooting

RPC framework weird problem

Spring bean initialization time



20+ site-wide deploys

No emails, **No** meetings

No finger-pointing

An aerial photograph of a lush green field, possibly a golf course, featuring several distinct, curved tracks or paths that divide the grassy area. The lighting creates soft shadows, emphasizing the texture of the grass and the curves of the paths.

Continuous Delivery the Platform!

Thank you:)