

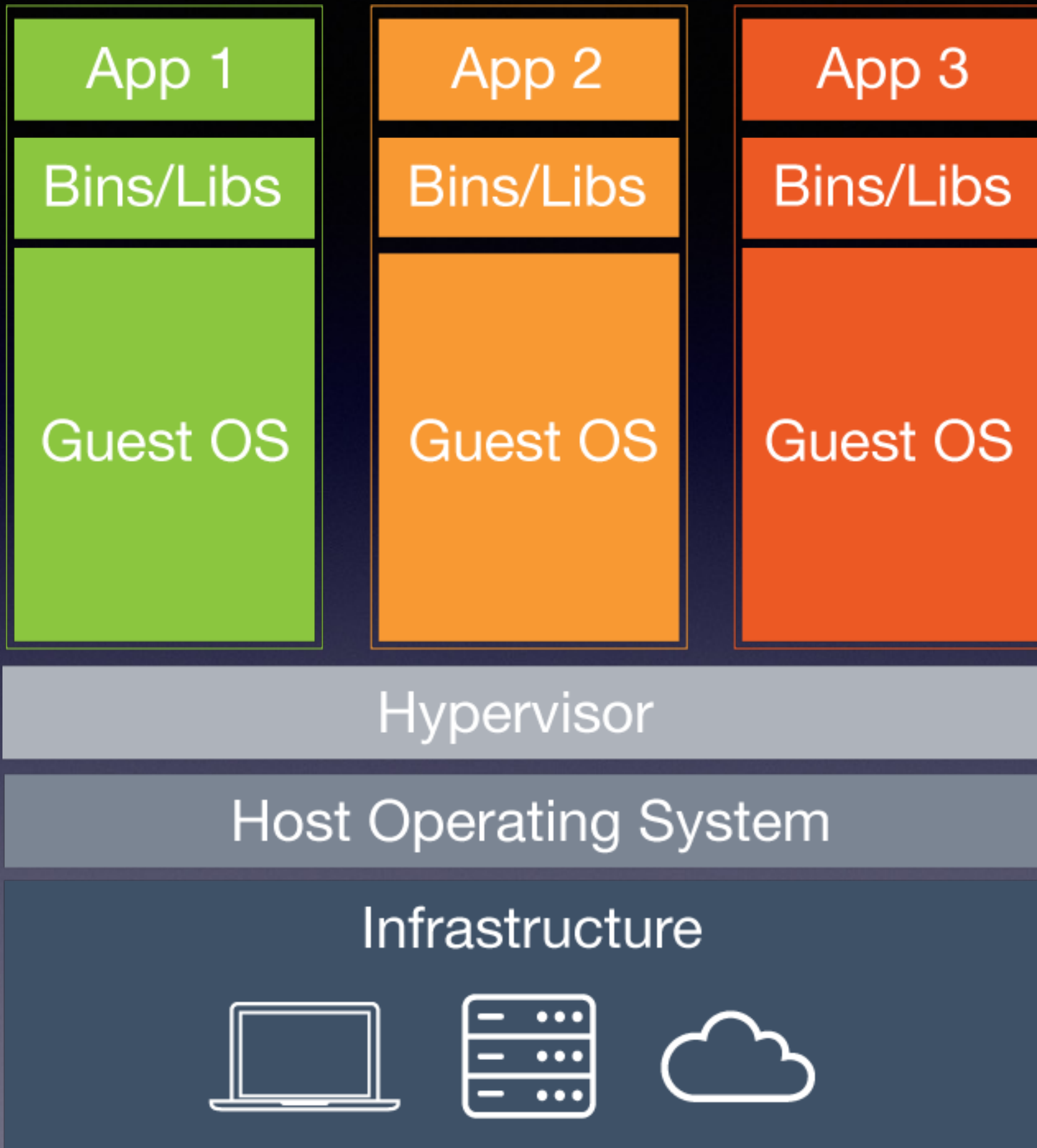
Coding-Job: 从研发到生产的容器化融合实践

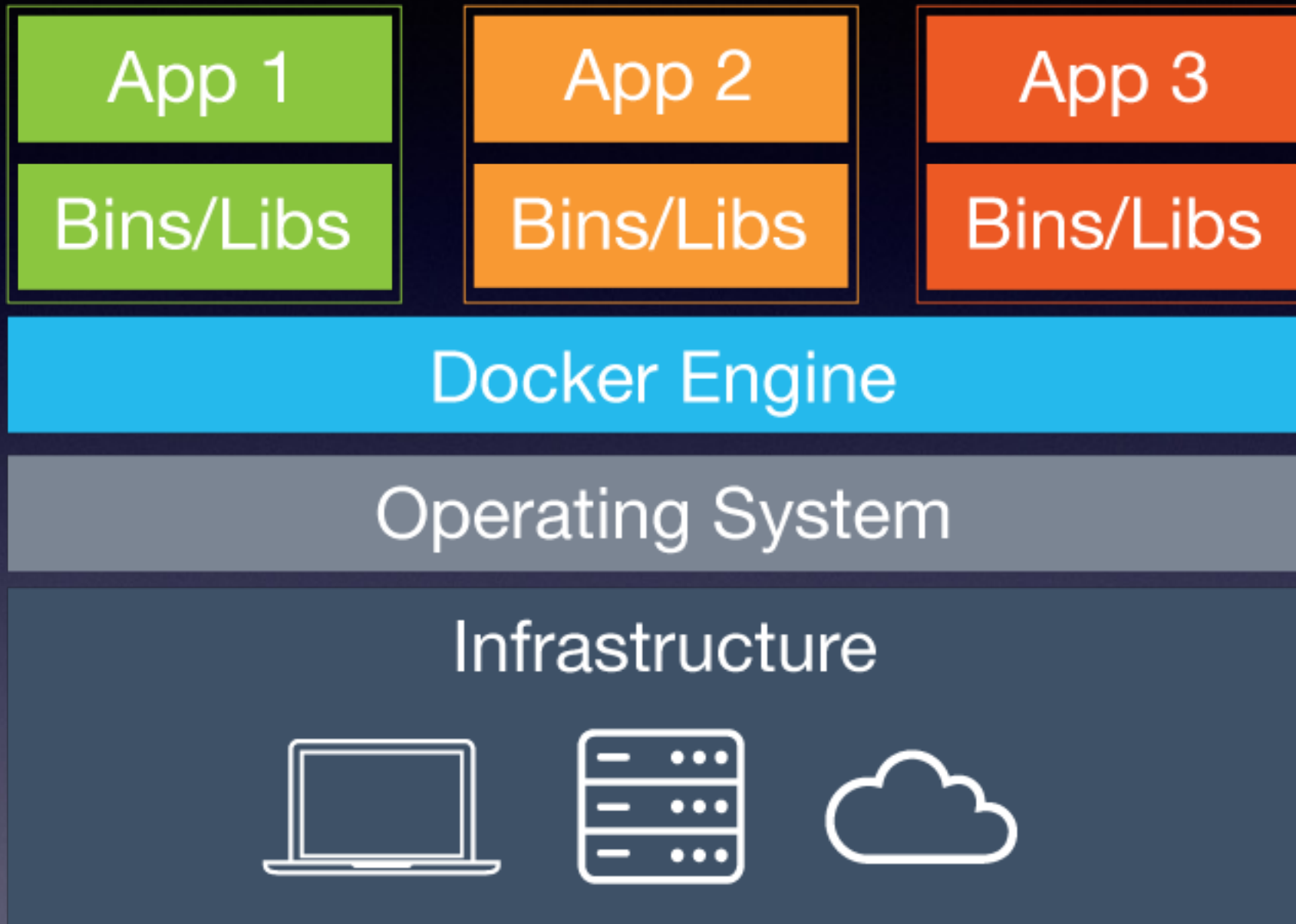
Coding-Job, a fusion of dockernized Prod & Dev environments

xh4n3@Coding

Coding 架构的演进

结构复杂的单体系统 > 微服务 > Docker 化 > 自动化





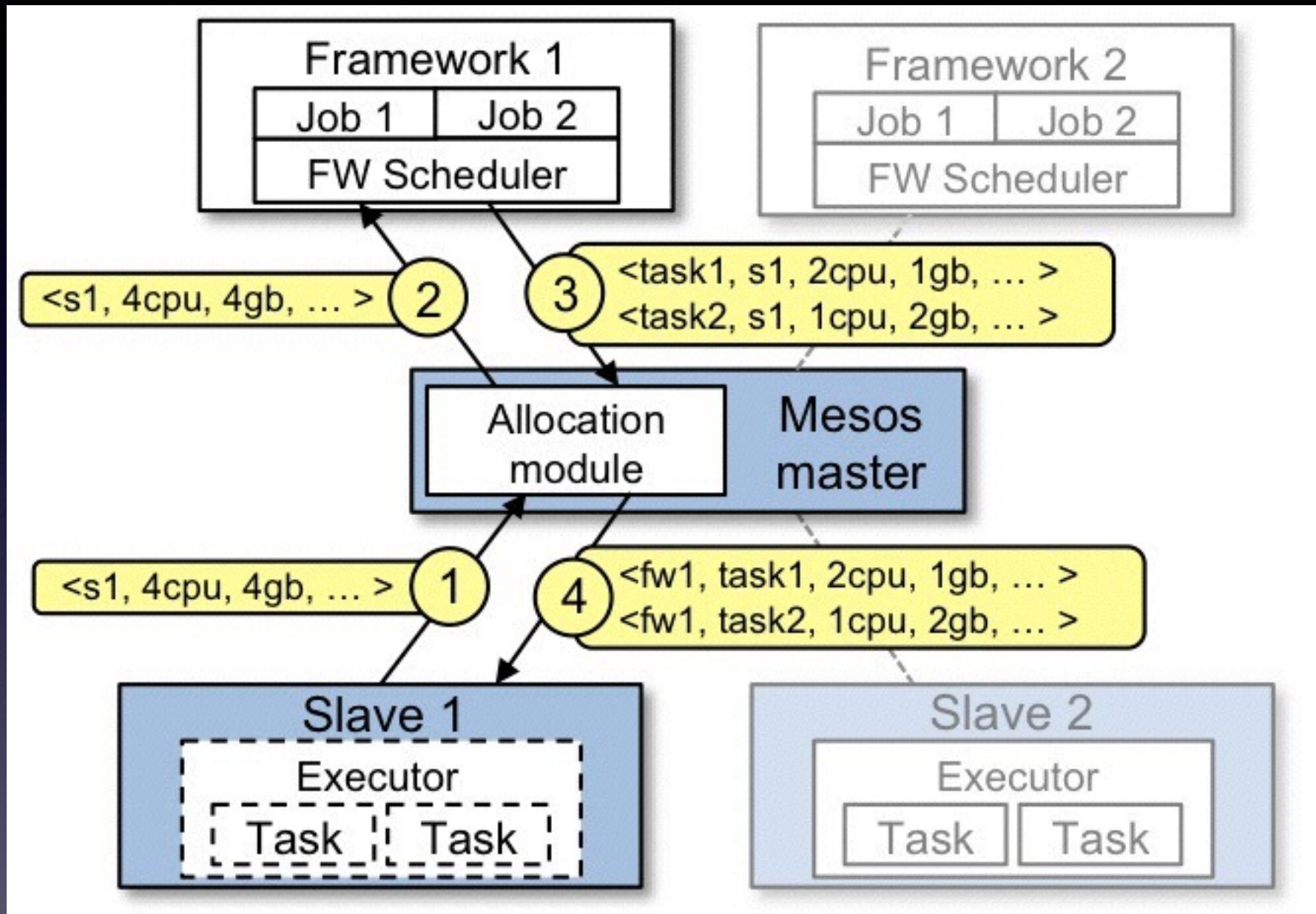






Apache
MESOS™

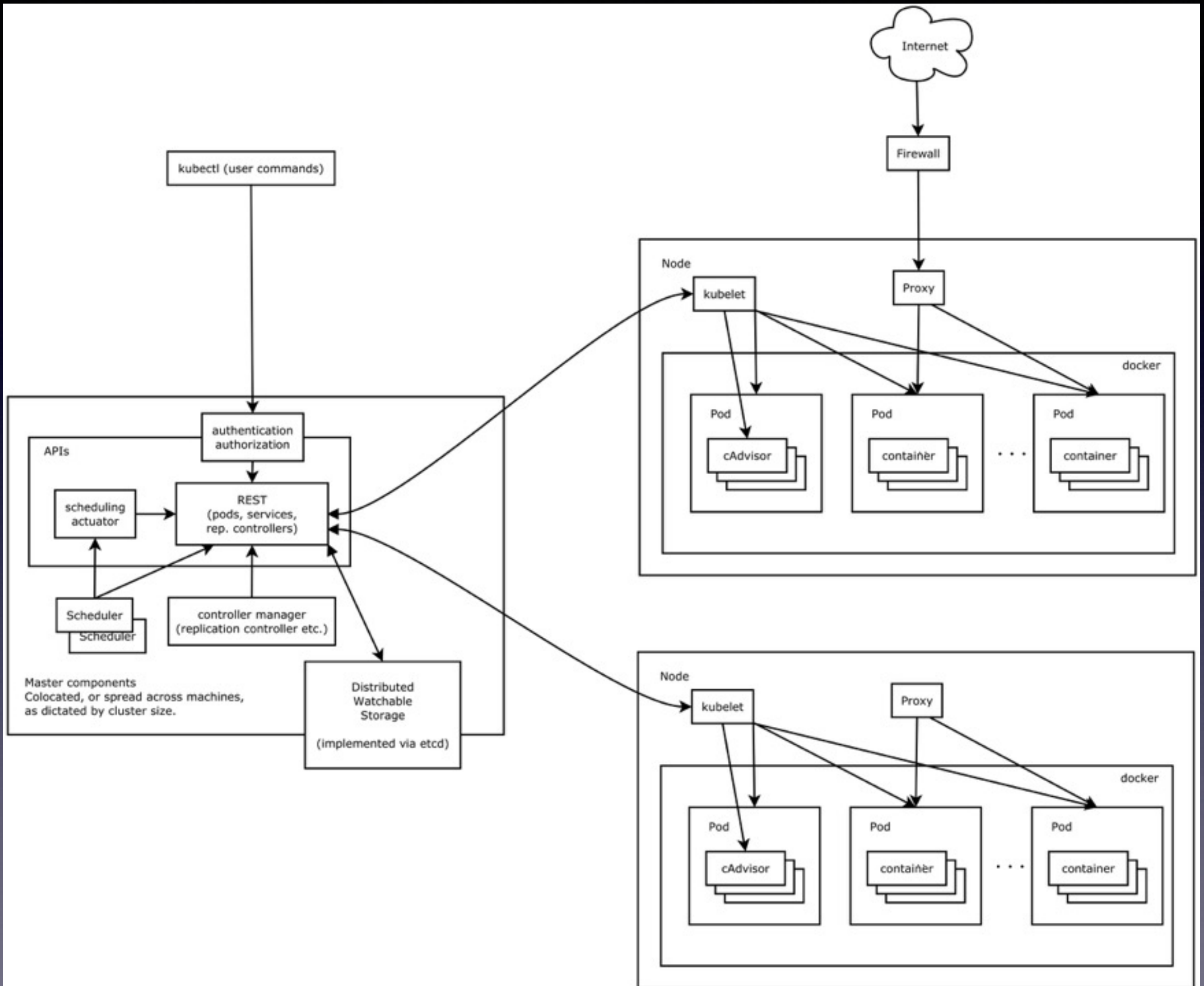
Apache Mesos abstracts CPU, memory, storage, and other compute resources away from machines (physical or virtual), enabling fault-tolerant and elastic distributed systems to easily be built and run effectively.



Resource Allocation



kubernetes by Google



```
apiVersion: v1
kind: Pod
metadata:
  name: nginx
spec:
  containers:
  - name: nginx
    image: nginx
    ports:
    - containerPort: 80
```

Pod Definition


```
apiVersion: v1
kind: ReplicationController
metadata:
  name: nginx-controller
spec:
  replicas: 2
  # selector identifies the set of Pods that this
  # replication controller is responsible for managing
  selector:
    app: nginx
  # podTemplate defines the 'cookie cutter' used for creating
  # new pods when necessary
  template:
    metadata:
      labels:
        # Important: these labels need to match the selector above
        # The api server enforces this constraint.
        app: nginx
    spec:
      containers:
      - name: nginx
        image: nginx
        ports:
        - containerPort: 80
```

Replication Controller

You'll never know...



Coding-Job

- 预定义所有任务配置
- Service/Job/Task

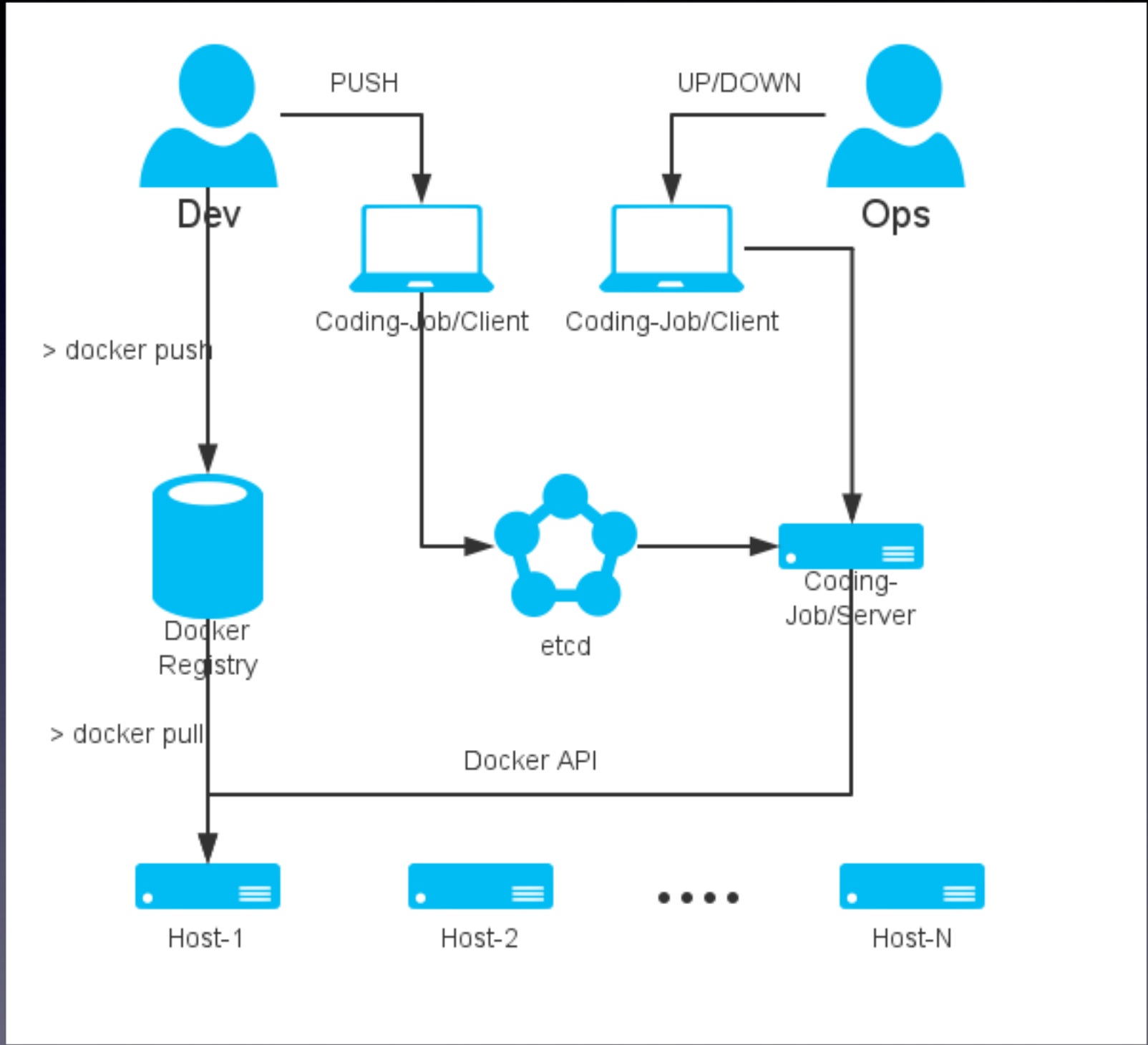
```
service: "core"
jobs:
  - name: "core-nginx"
    tasks:
      - name: "core-nginx"
        image: "core-nginx:48b58c1-dirty"
        run_on_host: "host-1"
        port: 0
        docker_config:
          docker_hostconfig:
            Binds:
              - "/data:/data/:rw"
  - name: "coding-email"
    tasks:
      - name: "coding-email"
```


Coding-Job CLI

- UP / DOWN / UPDATE / RELOAD / PUSH / LIST

Coding-Job Web

- STATUS / INSPECT / LOG / HISTORY



Coding-Job Topology

No Demo Today
(T_T)

```
xh4n3@dev:~% ./coding-job
```

```
Usage: ./coding-job [OPTIONS] COMMAND [arg...]
```

A tool for manage the containers of coding.

Options:

- dev_mode
development mode for front-end devs
- dns_suffix string
dns suffix for job.go (default ".coding.local")
- docker_registry string
docker registry for job.go (default "docker-registry")
- etcd_cluster string
address for etcd cluster (default "http://127.0.0.1:2379")
- host string
job server for action commands (default "127.0.0.1:2017")
- jobs string
ascii protobuf file for whole production (default "jobs.yml")
- v
verbose mode, prints configurations

Commands:

- | | |
|--------|--|
| reload | Reload job tasks (Restart one/all tasks with newest configs) |
| up | Up a job (Start all tasks) |
| down | Down a job (Stop all tasks) |
| list | List all jobs |
| server | Start as Server |
| push | Push rendered jobs yaml file to etcd |
| update | Update job tasks (Pull image and Restart one/all tasks) |







WebUI - Service

Coding-Job  Service  Job  Container  Node

Service

all

coolservice

Job 	Tasks 	Running 	Outdated 
cooljob	 1 <div data-bbox="771 915 1210 997">Replications needed for critical job</div>	1	0
redis	 1	1	0

WebUI - Container

Coding-Job [Service](#) [Job](#) [Container](#) [Node](#)

Container

1 containers found.

Container	NodeName ↕	ImageName ↕	Status	Detail
/boring_hamilton	docker.prod	docker.controller/redis:1	Up 2 hours	Log

Container ID b511f94fb1f6c4601387ac3c9fc19d7a27edc0c6adbf9a773d8658ed674227a4

Node docker.prod

Command redis-server

Refresh Per 10s



Refresh Now

```
Redis 3.2.0 (00000000/0) 64 bit
Running in standalone mode
Port: 6379
PID: 1
```

WebUI - Nodes

Coding-Job  Service  Job  Container  Node

Node

 1 nodes available.

Node	IP ↕	Tasks ↕	Running ↕	CPU ↕	Memory ↕	Version ↕	Status ↕	Detail
docker.prod	docker.prod	5	2	1	975M	1.11.1	UP	

< 1 >

CLI - list

```
xh4n3@dev:~% ./coding-job -host=docker.controller:2017 list
```

SERVICE	JOB	TASK	CONFIGURED IMAGE	STATUS
coolservice	cooljob	cool-1	docker.controller/coolproject:2	Up About an hour
coolservice	redis	redis-1	docker.controller/redis:1	Up 2 hours

- 一分钟发布新组件
- 五分钟启动整个 Coding
- 透明的线上环境

Q&A