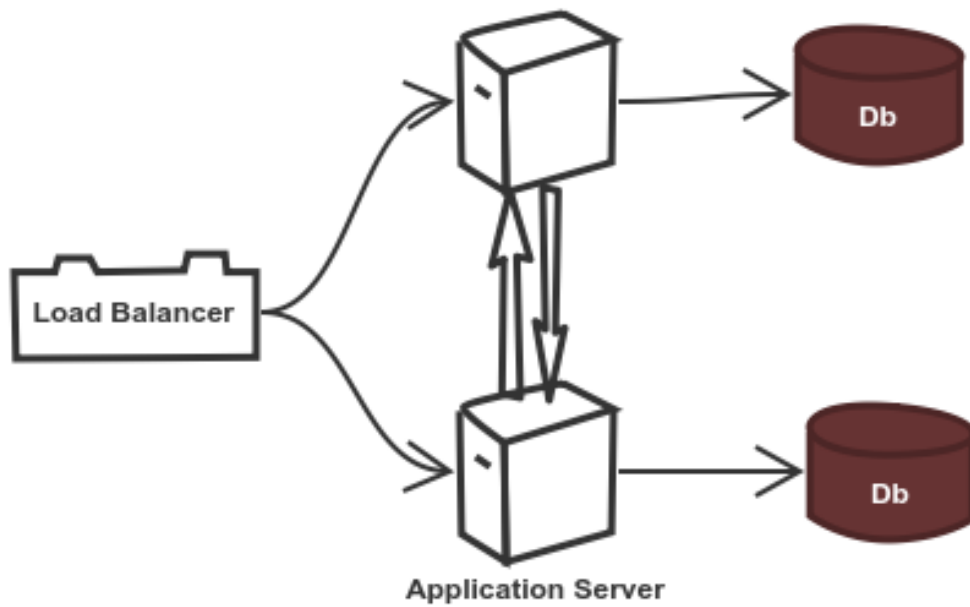
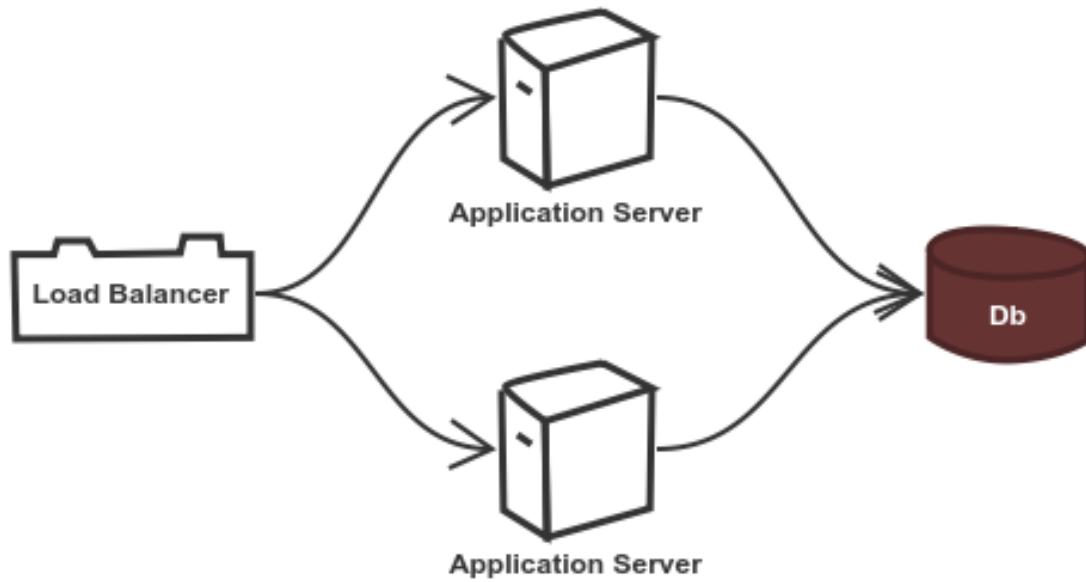
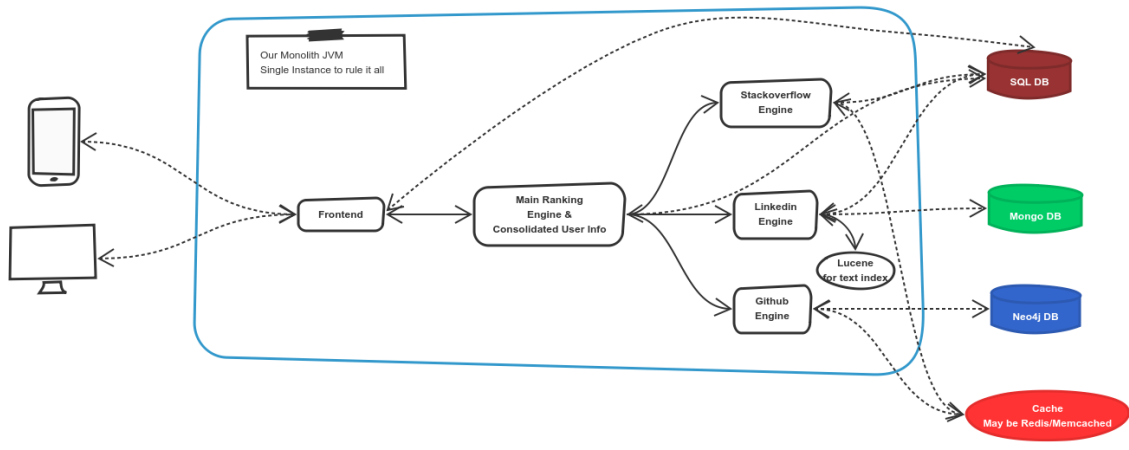


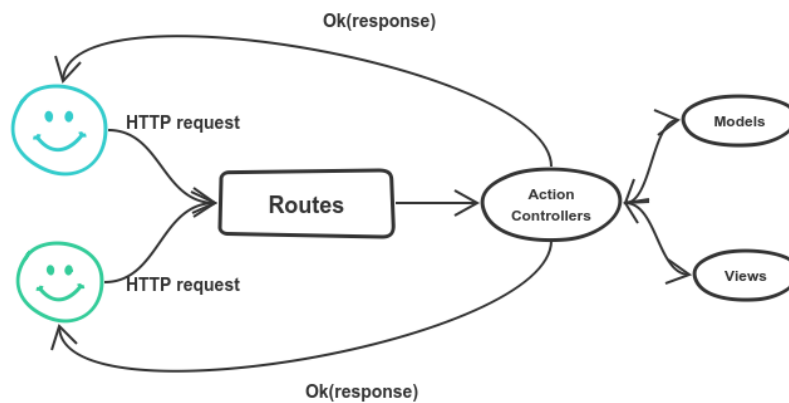
## Chapter 1: Introduction to Microservices



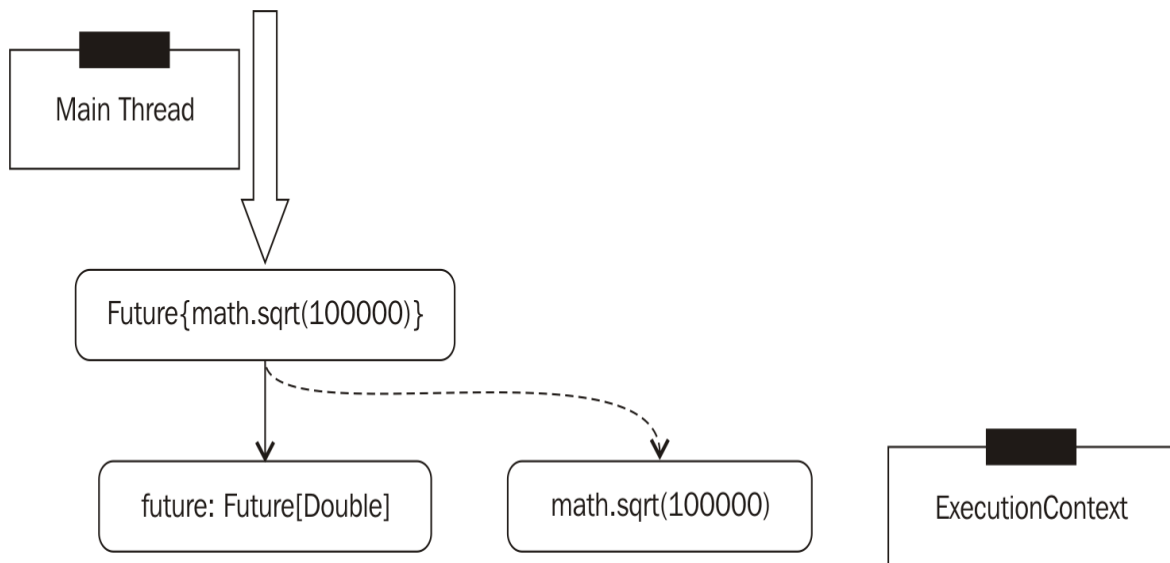


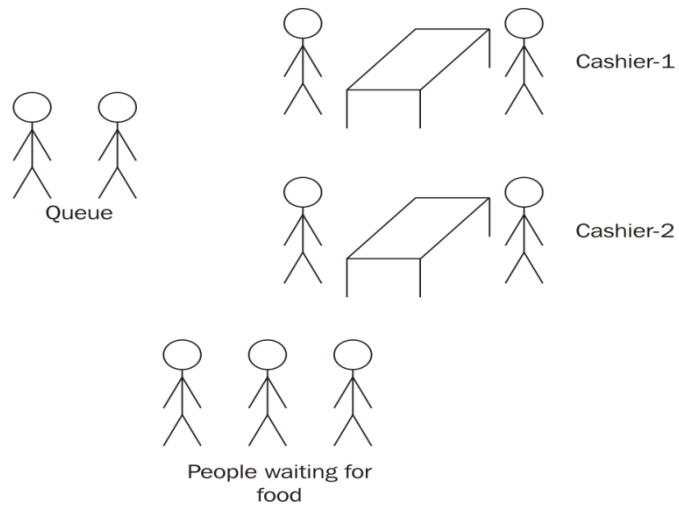
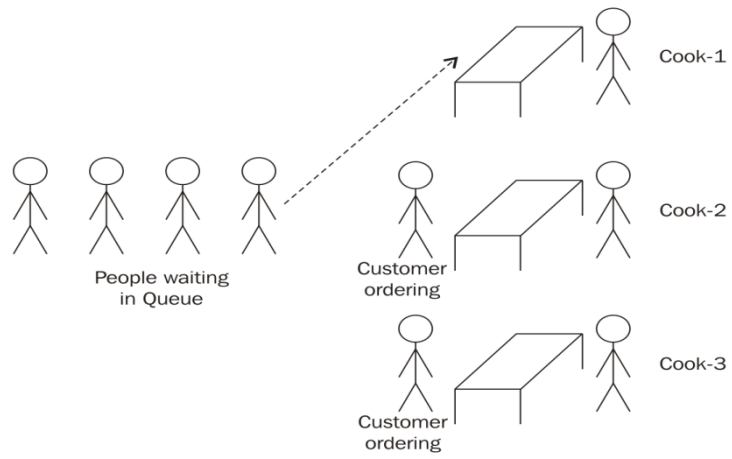
## Chapter 2: Introduction to Play Framework

```
jatin@puri: ~/IdeaProjects/first-app
jatin@puri:~/IdeaProjects/first-app$ sbt
[info] Loading global plugins from /home/jatin/.sbt/0.13/plugins
[info] Loading project definition from /home/jatin/IdeaProjects/first-app/project
[info] Set current project to first-app (in build file:/home/jatin/IdeaProjects/first-app/)
[first-app] $
```

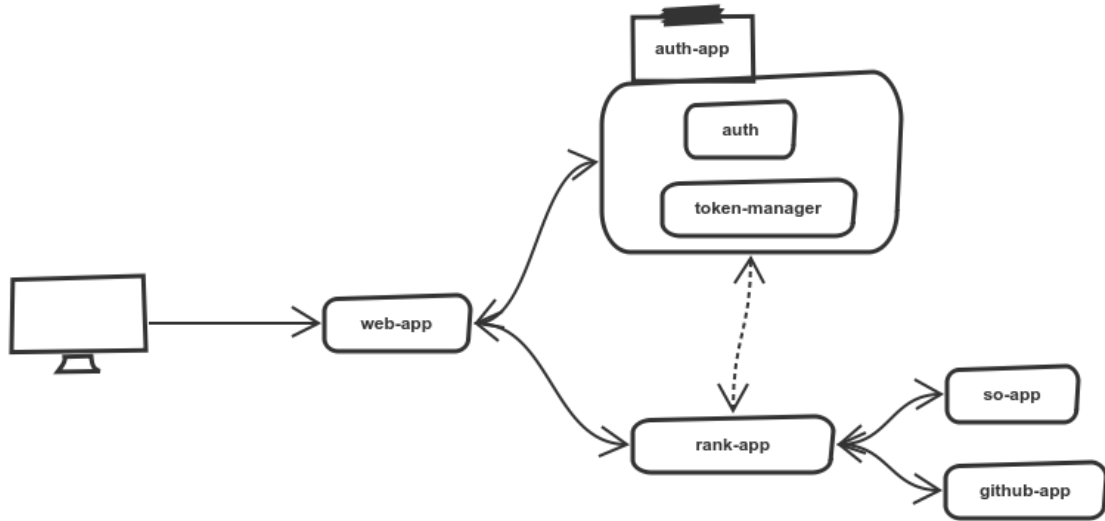


## Chapter 3: Asynchronous and Non-Blocking





# Chapter 4: Dive Deeper



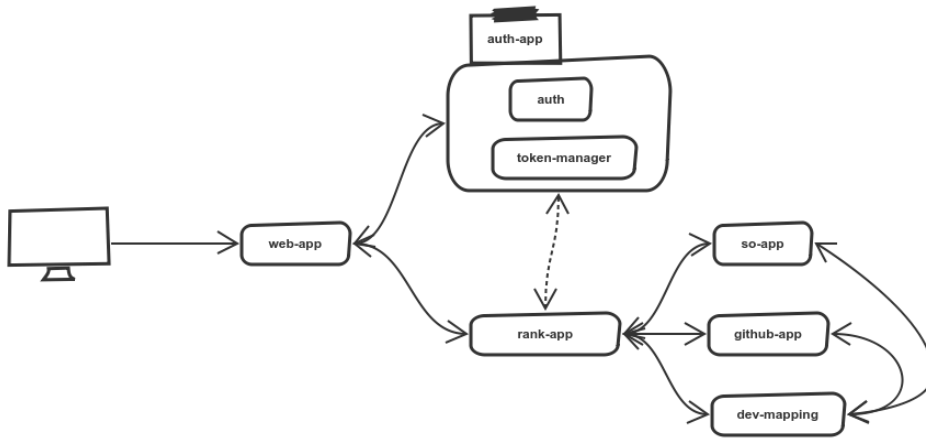
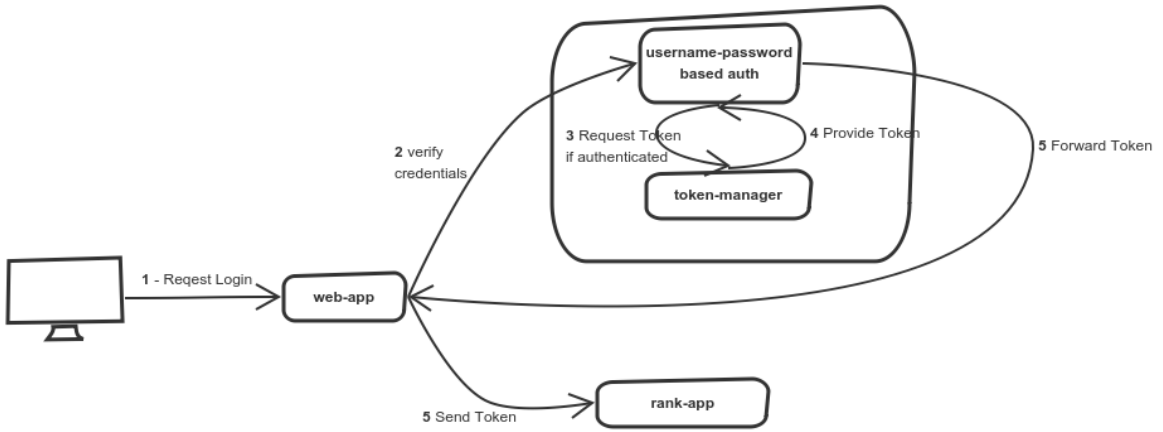
localhost:3000/dashboard



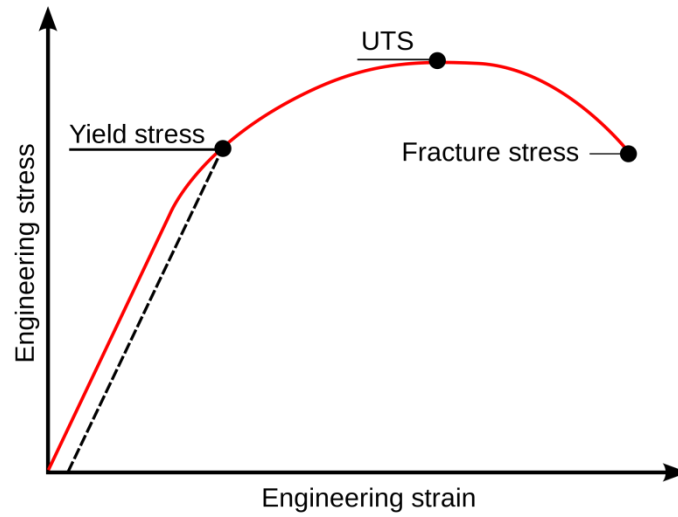
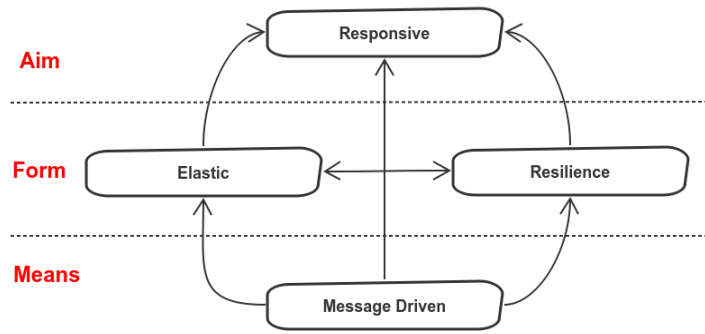
Seeker



Scala in london | Search

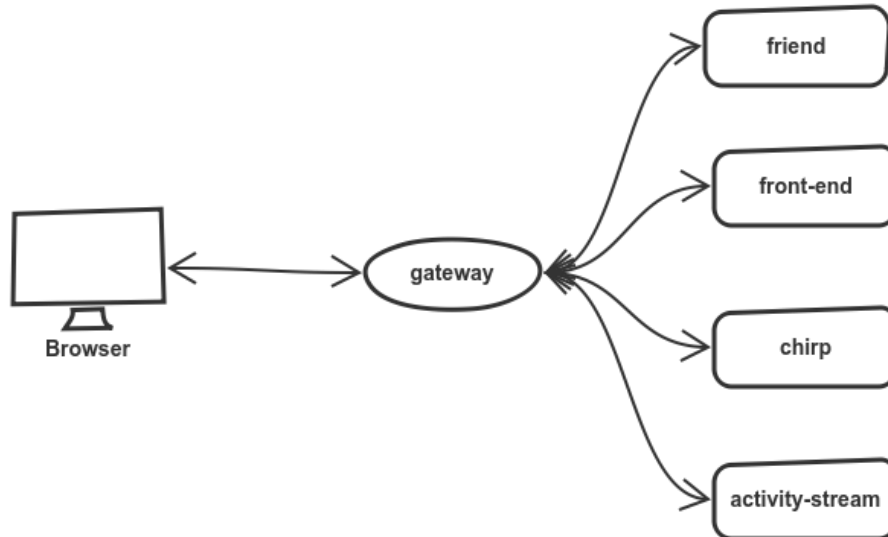


# Chapter 5: Reactive Manifesto



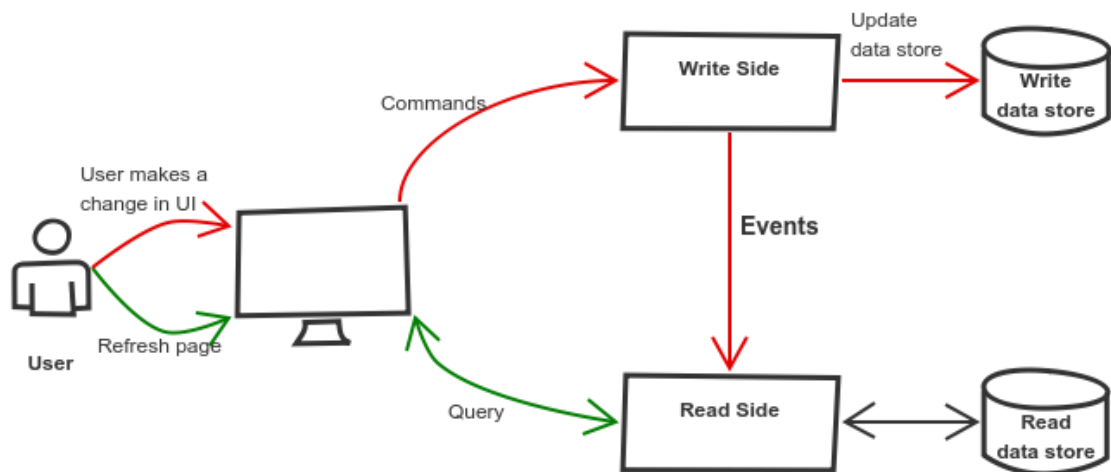
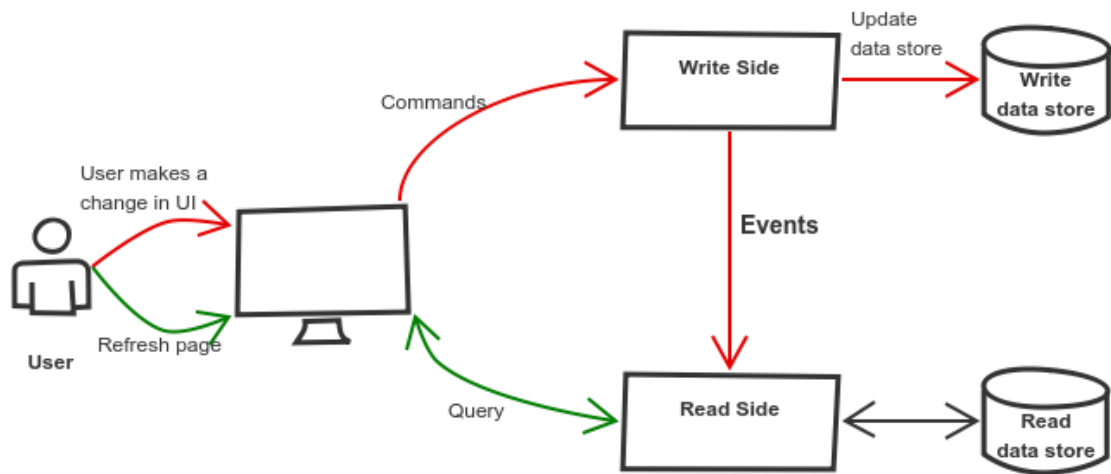


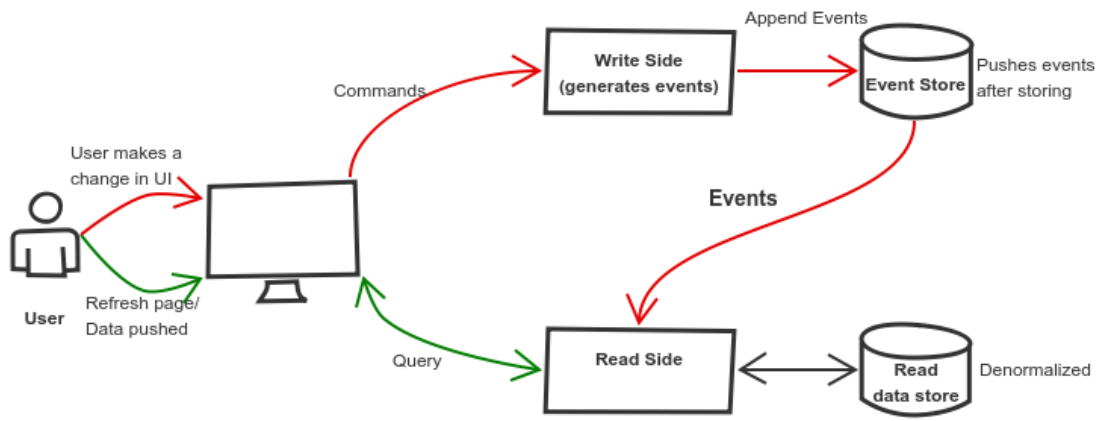
## Chapter 6: Introduction to Lagom



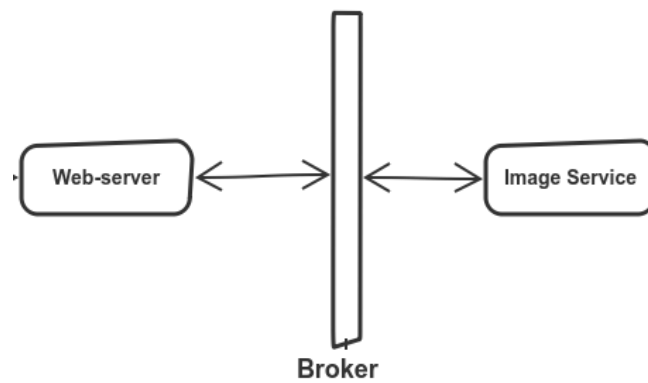
```
> runAll
[info] Kafka won't be started because the build setting `lagomKafkaEnabled` is set to `false`
[info] Cassandra won't be started because the build setting `lagomCassandraEnabled` is set to `false`
2017-08-25T20:12:33.059Z [info] akka.event.slf4j.Slf4jLogger [] - Slf4jLogger started
2017-08-25T20:12:39.465Z [info] com.lightbend.lagom.discovery.ServiceLocatorServer [] - Service locator can be reached at http://localhost:8000
2017-08-25T20:12:39.467Z [info] com.lightbend.lagom.discovery.ServiceLocatorServer [] - Service gateway can be reached at http://localhost:9000
[info] Service locator is running at http://localhost:8000
[info] Service gateway is running at http://localhost:9000
01:42:51.769 [info] play.core.server.NettyServer [] - Listening for HTTP on /0:0:0:0:0:0:0:51855
01:42:51.803 [info] play.core.server.NettyServer [] - Listening for HTTP on /0:0:0:0:0:0:0:60399
01:42:51.849 [info] play.core.server.NettyServer [] - Listening for HTTP on /0:0:0:0:0:0:0:57143
01:42:51.932 [info] play.core.server.NettyServer [] - Listening for HTTP on /0:0:0:0:0:0:0:54485
01:42:58.084 [info] akka.event.slf4j.Slf4jLogger [] - Slf4jLogger started
01:43:02.439 [info] akka.event.slf4j.Slf4jLogger [] - Slf4jLogger started
01:43:03.134 [info] play.api.Play [] - Application started (Dev)
```

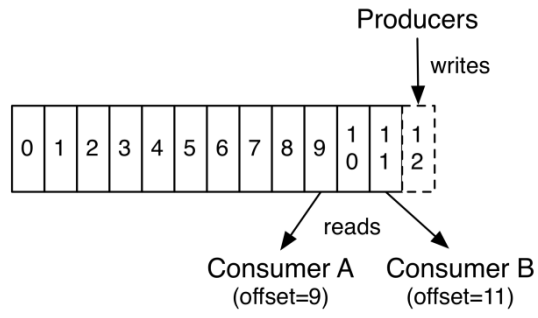
# Chapter 7: CQRS and Event Sourcing



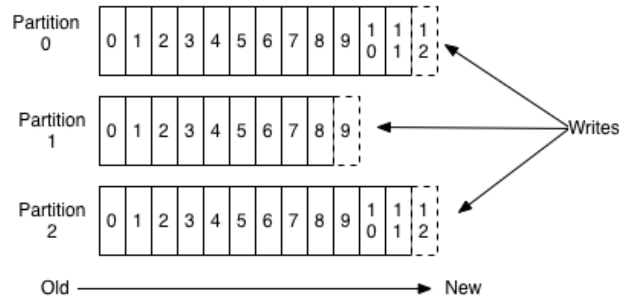


## Chapter 8: Effective Communication





### Anatomy of a Topic



# Chapter 9: Development Process

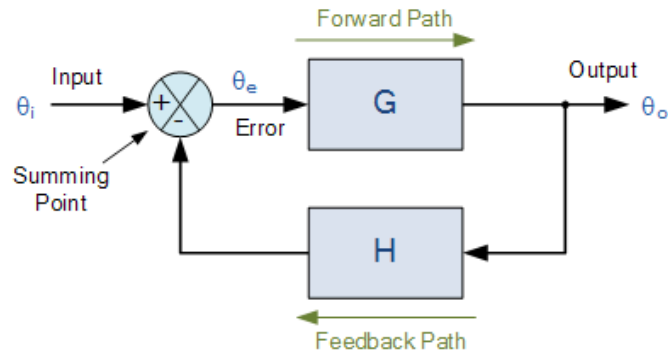
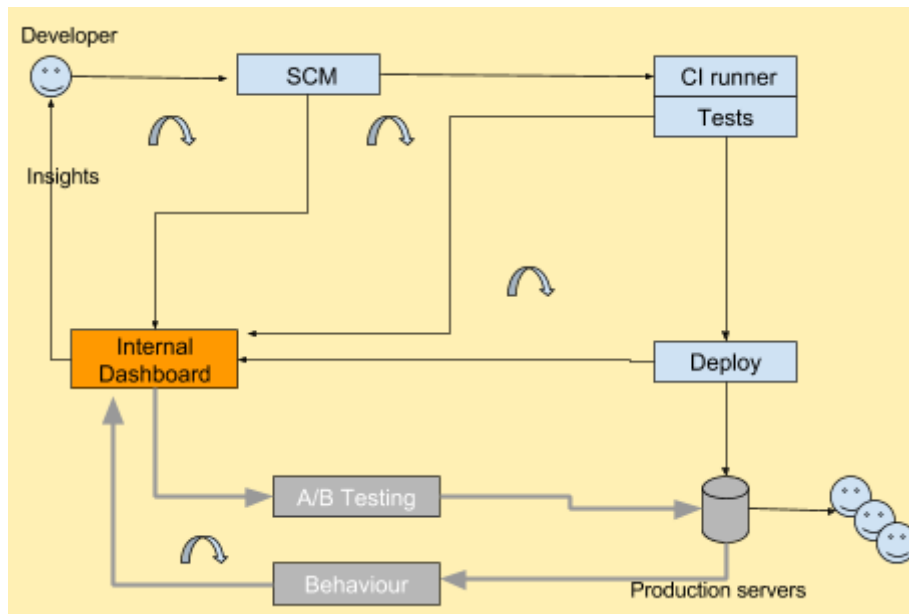
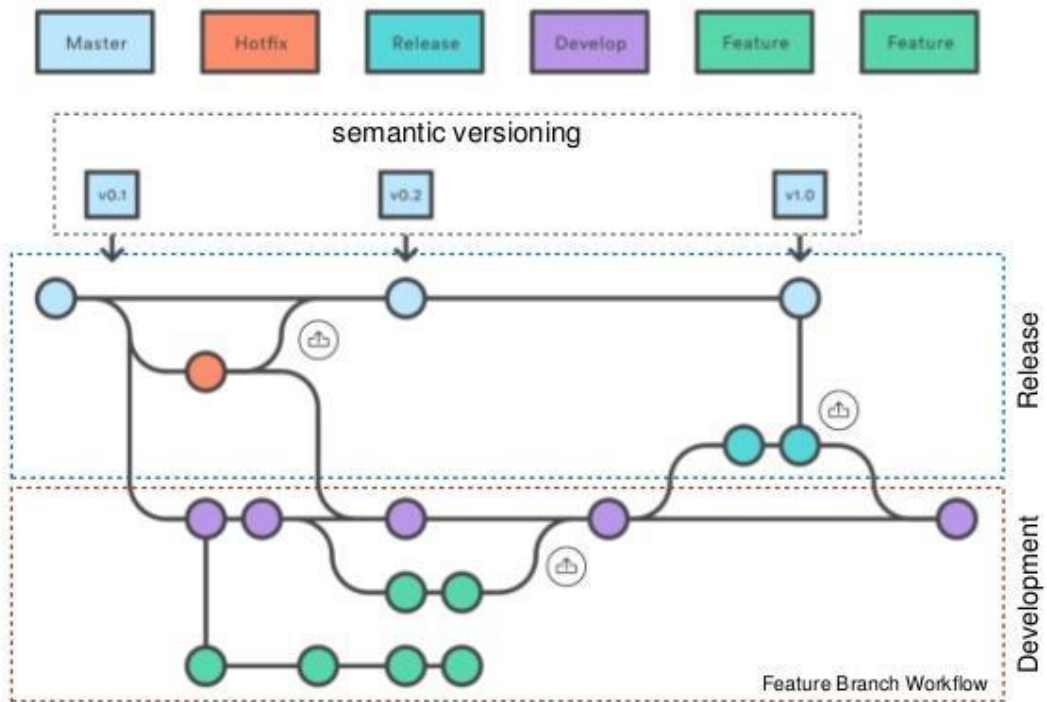
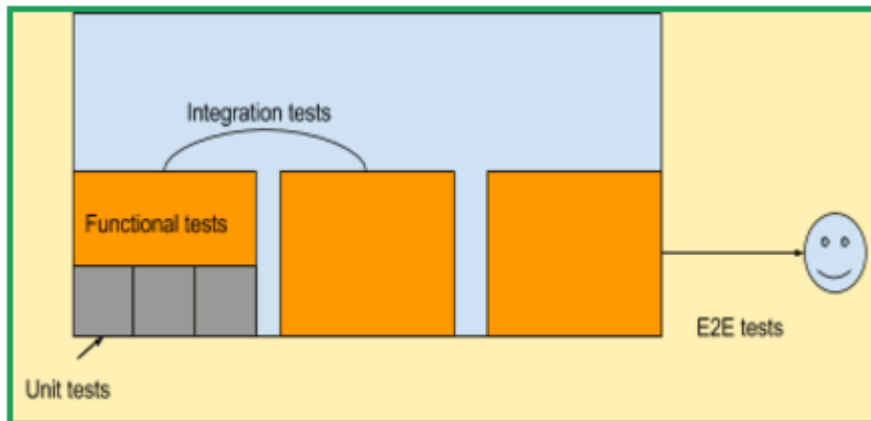


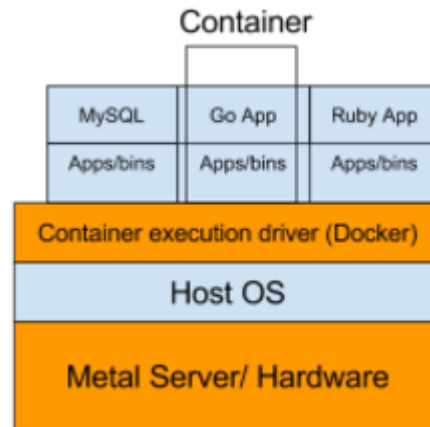
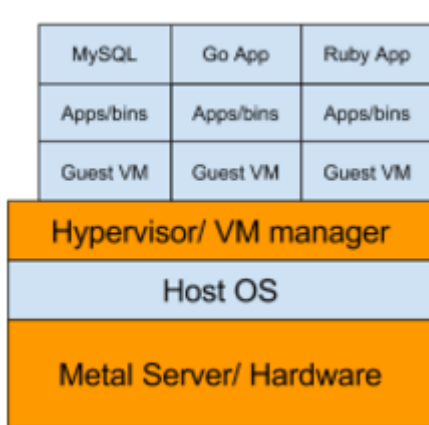
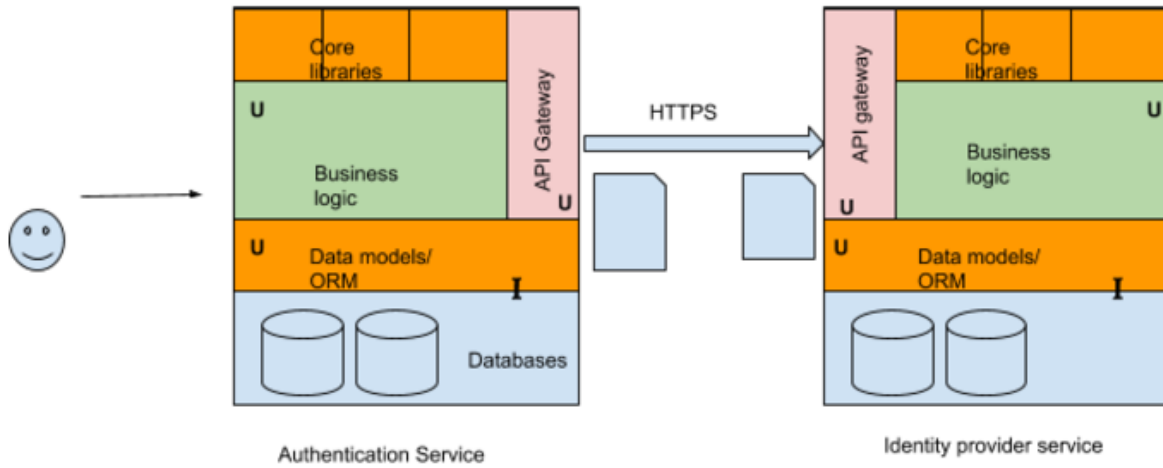
Figure 9.1. Closed-loop system vs open-loop system.



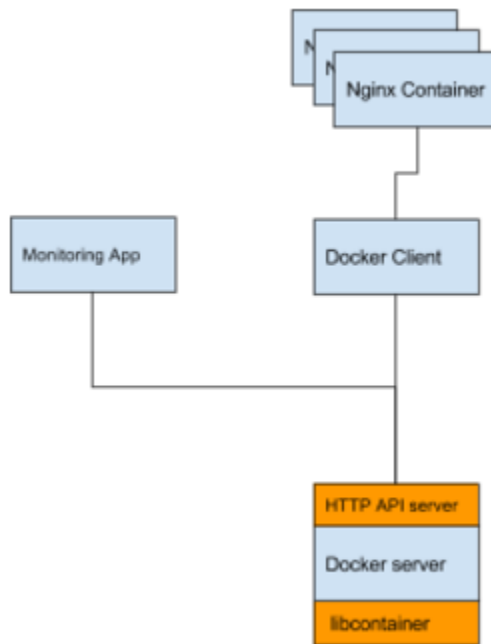


Pikicast

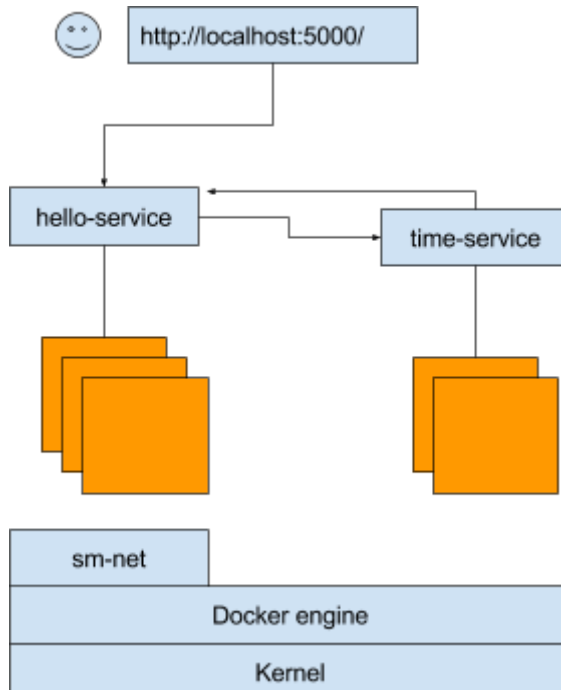
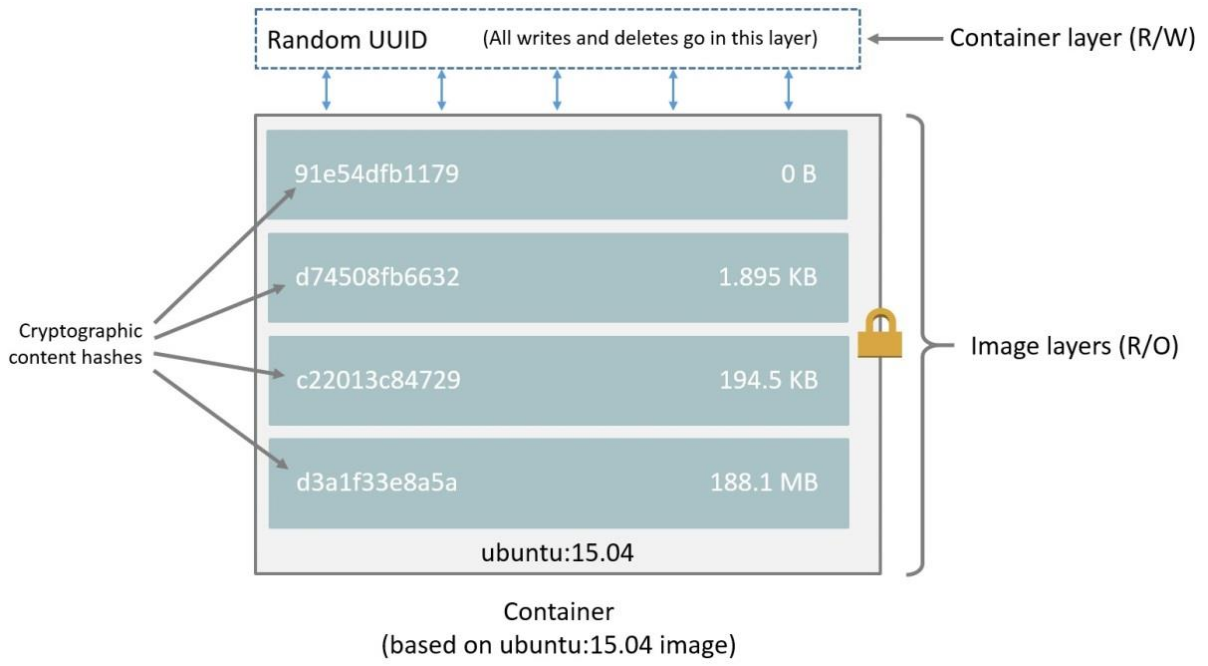




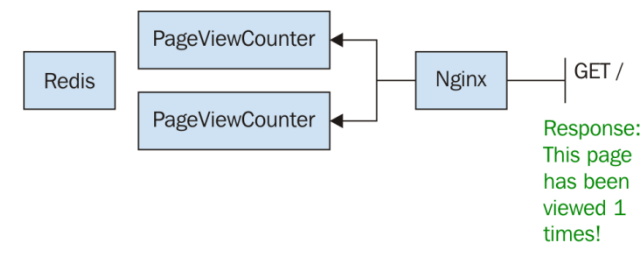
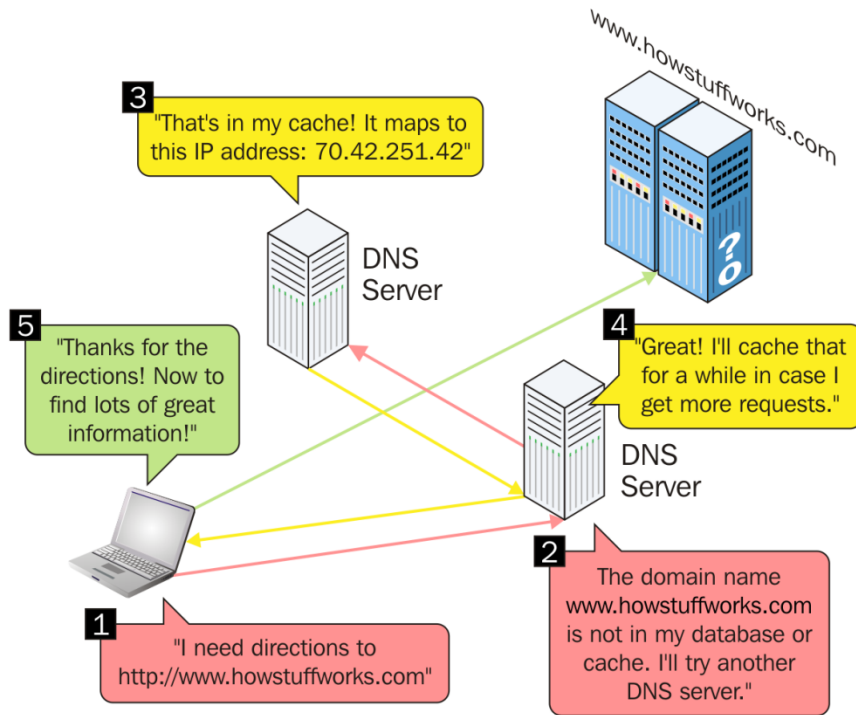


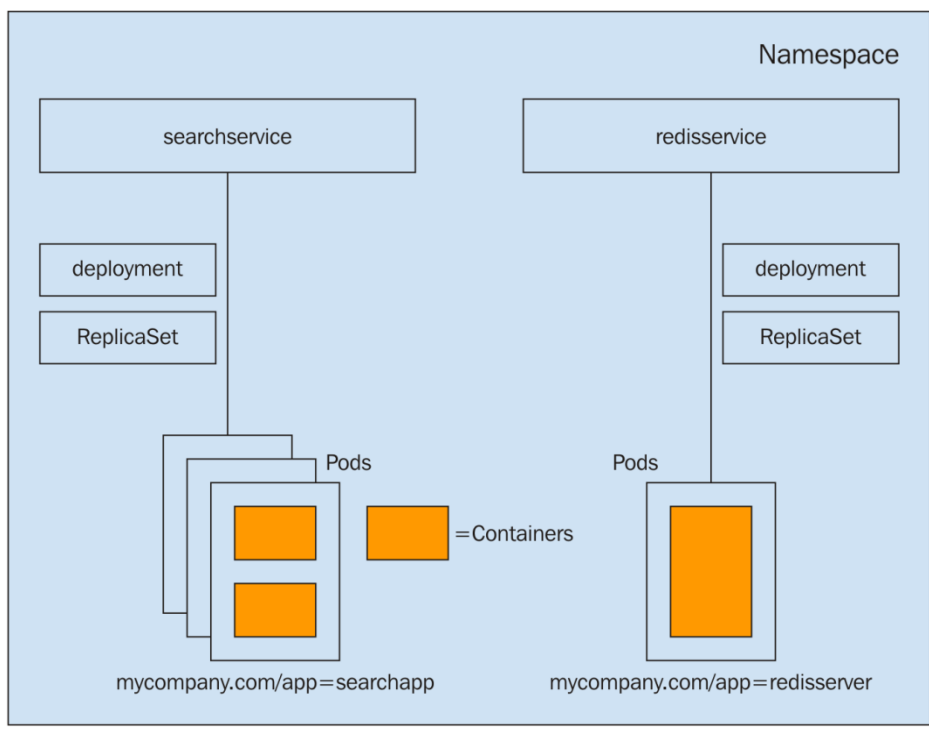
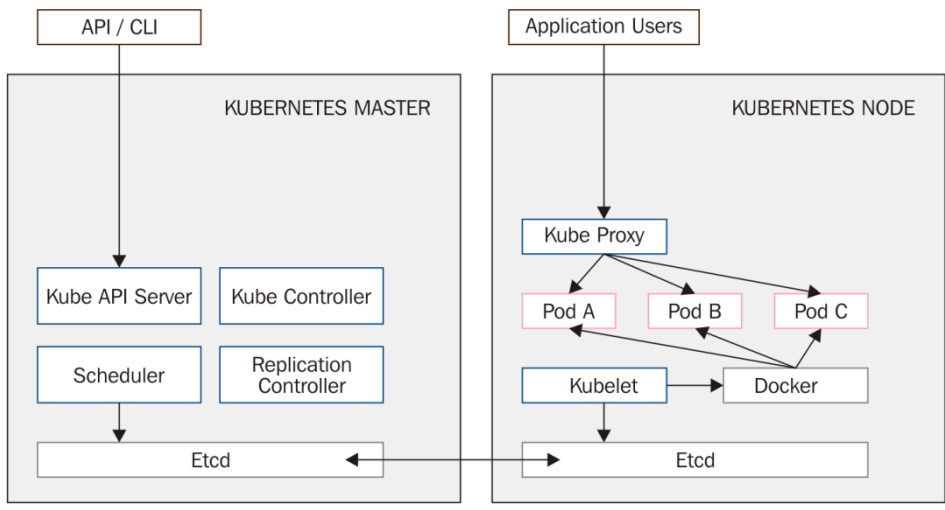


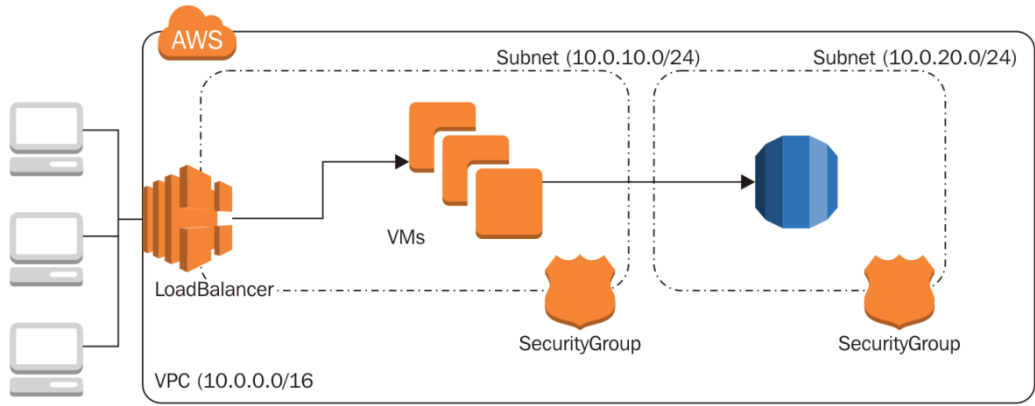
- 2002 namespace feature added to linux.
- 2004 kernel support for union file system (ufs) v2.6.9
- 2008 cgroup feature merged to linux mainline . v2.6.24. Google developed it [\*]
- 2014 LXC v1 stable version released



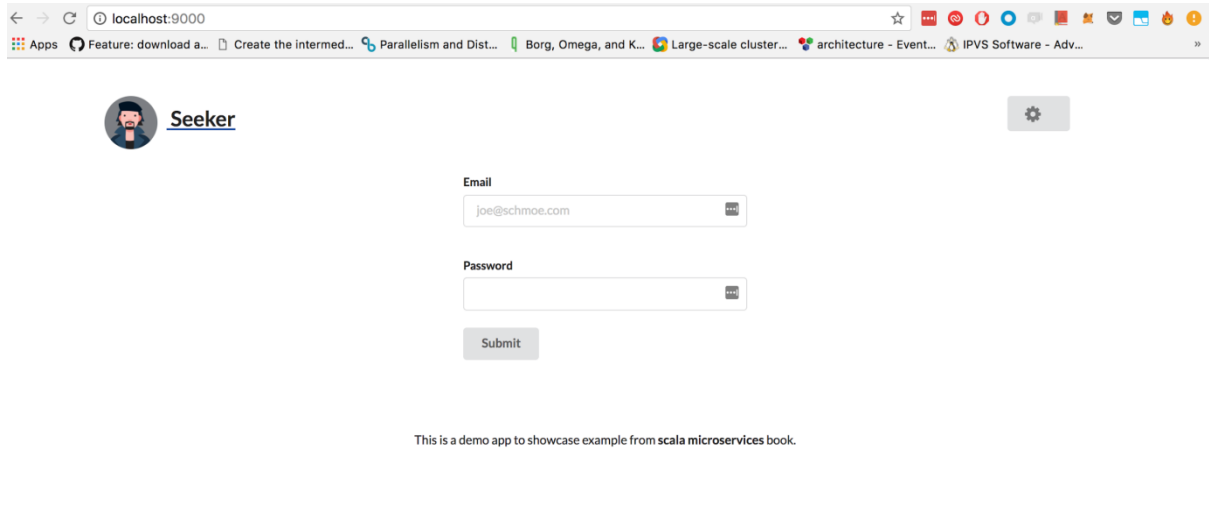
# Chapter 10: Production Containers







# Chapter 11: Example Application in K8s

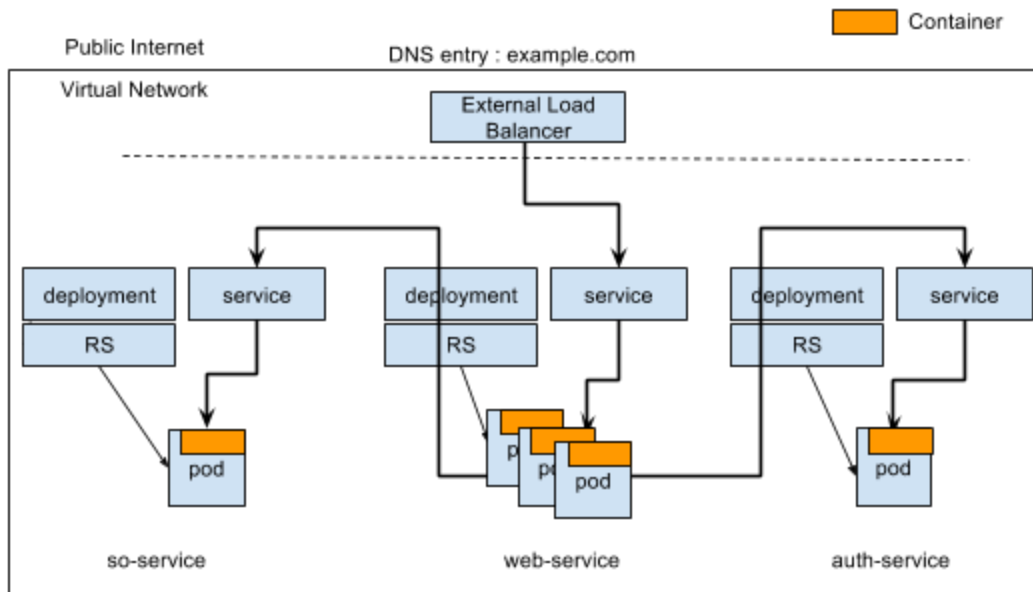


```
machine:
  services:
    - docker } Installs docker in CI machine.

dependencies:
  override:
    - docker info
    - docker build --rm=false -t chartot/auth-app . } Build docker image

test:
  override:
    - docker run -d -p 2000:2000 chartot/auth-app; sleep 10
    - curl --retry 10 --retry-delay 5 -v
      http://localhost:2000/v1/auth/logout/incorrect_token } Testing docker image

deployment:
  hub:
    branch: master
    commands: } Pushing docker image
```



*apiVersion: extensions/v1beta1*

*kind: Deployment*

*metadata:*

*name: auth-deployment*

*labels:*

*app: auth*

*environment: production*

*spec:*

*replicas: < Replica count >*

*strategy:*

*template:*

*< POD template >*

This template has almost all properties of pod specification . <https://kubernetes.io/docs/api->

```

metadata:
  labels:
    app: auth
    environment: production
spec:
  volumes:
    - name: sm-cmaps-auth-volume
      configMap:
        name: sm-cmaps-auth
  containers:
    - name: auth-container
      imagePullPolicy: Always
      image: chartotu/auth-app:v1
      env:
        - name: APP_SECRET
          valueFrom:
            secretKeyRef:
              name: sm-secrets-auth
              key: APP_SECRET
        - name: HTTP_SECRET
          valueFrom:
            secretKeyRef:
              name: sm-secrets-auth
              key: HTTP_SECRET
      volumeMounts:
        - name: sm-cmaps-so-volume
          mountPath: /opt/auth-app/conf/application.conf
          readOnly: true

```

These labels will be used by services to select them.

All volumeMounts need to be first defined as a volume. Volumes section can be shared between containers in the same pod.

Secrets are being mounted as environment variables.

ConfigMap mounted to a specific path in **readOnly** mode.

<https://kubernetes.io/docs/api-reference/v1.7/#secret-v1-core>

```

apiVersion: v1
kind: Secret
metadata:
  name: sm-secrets-auth
type: Opaque
data:
  # actual value: asdjb2312312edqwd
  HTTP_SECRET: YXNkamlyMzEyMzEyZWVxd2Q=
  #actual value: las202buqb3212edqw
  APP_SECRET: bGFzMTJIZHF3

```

base64 string



<https://kubernetes.io/docs/api-reference/v1.7/#configmap-v1-core>

```
apiVersion: v1
kind: ConfigMap
metadata:
  name: sm-cmaps-auth
data:
  application.conf: |
    slick.dbs.default.driver="slick.driver.H2Driver$"
    slick.dbs.default.db.driver="org.h2.Driver"
.....
```

<https://kubernetes.io/docs/api-reference/v1.7/#service-v1-core>

```
apiVersion: v1
kind: Service
metadata:
  name: auth-service
labels:
  app: auth
  environment: production
annotations:
  description: Authentication for our seeker application
spec:
  sessionAffinity: None
  ports:
    - name: http-2000
      port: 2000
      targetPort: 9000
      protocol: TCP
  selector:
    app: auth
    environment: production
```

} Service ports, targetPort is the container port.

} These labels will be used by services to select them.

127.0.0.1:8001/api/v1/namespaces/kube-system/services/kubernetes-dashboard/proxy/#/workload?namespace=default

Apps Feature: download a... Create the intermed... Parallelism and Dist... Borg, Omega, and K... Large-scale cluster... architecture - Event... IPVS Software - Adv...

kubernetes Workloads + CREATE

Admin

- Namespaces
- Nodes
- Persistent Volumes
- Storage Classes

Namespace

default

Workloads

- Deployments
- Replica Sets
- Replication Controllers
- Daemon Sets
- Stateful Sets
- Jobs
- Pods

Services and discovery

There is nothing to display here

You can [deploy a containerized app](#), select other namespace or [take the Dashboard Tour](#) to learn more.

kubernetes Services and discovery > Services + CREATE

Namespace

sm-seeker

Workloads

- Deployments
- Replica Sets
- Replication Controllers
- Daemon Sets
- Stateful Sets
- Jobs
- Pods

Services and discovery

Services

Name	Labels	Cluster IP	Internal endpoints	External endpoints
✓ auth-service	app: auth environment: produc...	10.0.157.204	auth-service.sm-talent... auth-service.sm-talent...	52.12.34.101:2000
✓ web-service	app: web environment: produc...	10.0.164.248	web-service.sm-talent... web-service.sm-talent...	-

Ingresses

Storage

- Persistent Volume Claims

Config

- Secrets

<https://kubernetes.io/docs/api-reference/v1.7/#storageclass-v1-storage>

```
kind: StorageClass
apiVersion: storage.k8s.io/v1
metadata:
  name: mystorageclass
provisioner: kubernetes.io/azure-disk
parameters:
  skuName: Standard_LRS
  location: eastus
  storageAccount: mystorageaccount
```

```
apiVersion: v1
kind: PersistentVolumeClaim
metadata:
  name: sm-pvc-testdisk
  Namespace: sm-talent-search-engine
  annotations:
    volume.beta.kubernetes.io/storage-class: mystorageclass
spec:
  accessModes:
    - ReadWriteOnce
  resources:
    requests:
      storage: 40Gi
  selector:
    matchLabels:
      release: "stable"
```

PersistentVolume bound to this claim are based on the resource constraints and selector labels.

<https://kubernetes.io/docs/api-reference/v1.7/#persistentvolumeclaim-v1-core>

.....

containers:

- name: container
- image: chartotu/auth-app:v1
- imagePullPolicy: Always
- volumeMounts:
  - mountPath: /opt/scala
  - name: sm-volume-testdisk
- ports:
  - containerPort: 22
  - containerPort: 22

volumes:

- name: sm-volume-testdisk
- persistentVolumeClaim:
  - claimName: sm-pvc-testdisk