ondia

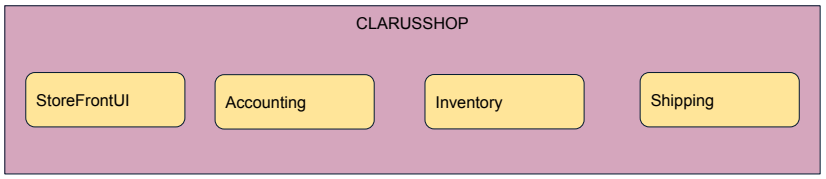
Ingress and Storage Classes

AGENDA

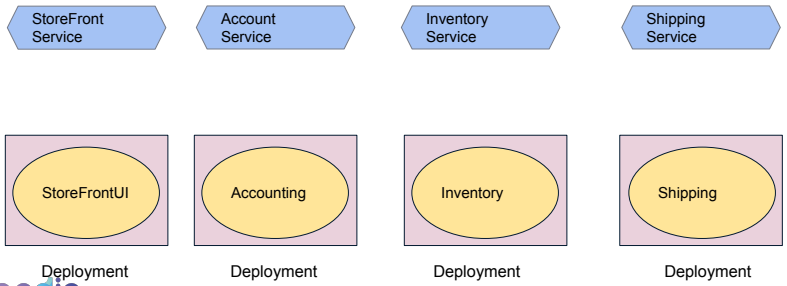
- Ingress
- StorageClass

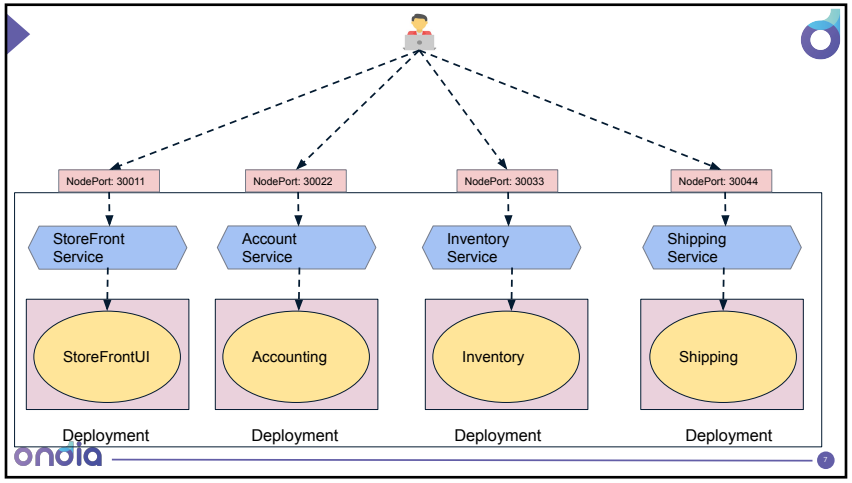
1 Ingress

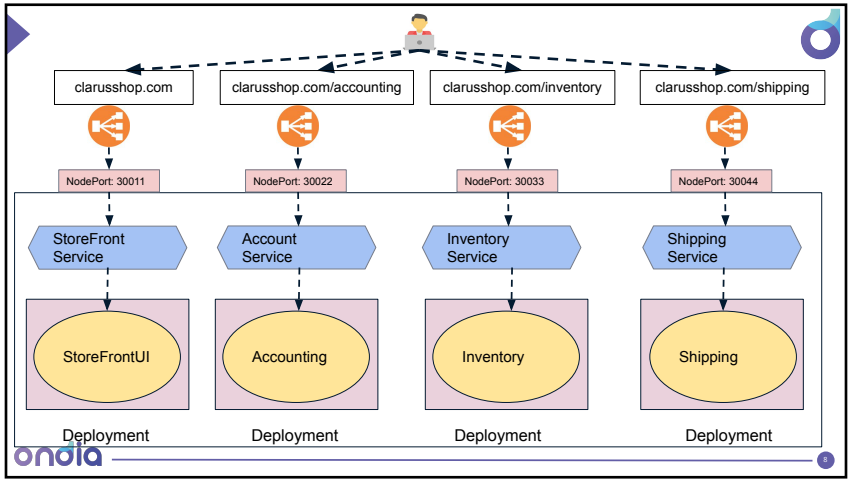
Ingress



Ingress

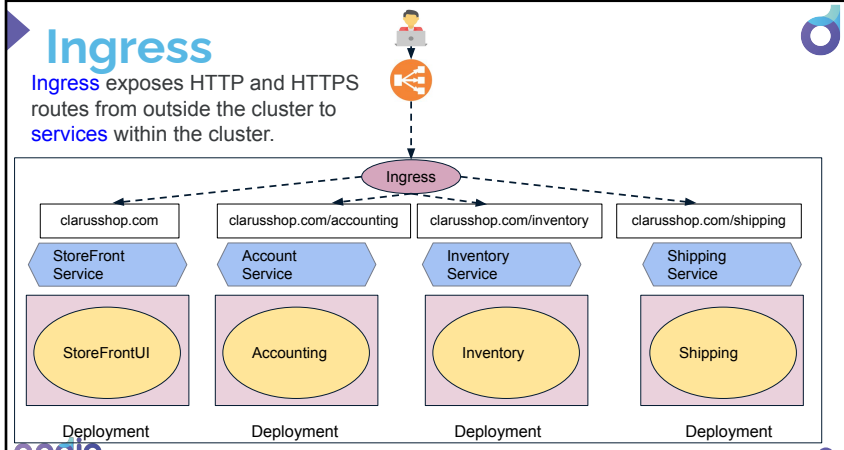



NodePort: 30011
NodePort: 30022
NodePort: 30033
NodePort: 30044
StoreFront Service
Account Service
Inventory Service
Shipping Service
StoreFrontUI
Accounting
Inventory
Shipping
Deployment
Deployment
Deployment
Deployment


clarusshop.com
clarusshop.com/accounting
clarusshop.com/inventory
clarusshop.com/shipping
NodePort: 30011
NodePort: 30022
NodePort: 30033
NodePort: 30044
StoreFront Service
Account Service
Inventory Service
Shipping Service
StoreFrontUI
Accounting
Inventory
Shipping
Deployment
Deployment
Deployment
Deployment

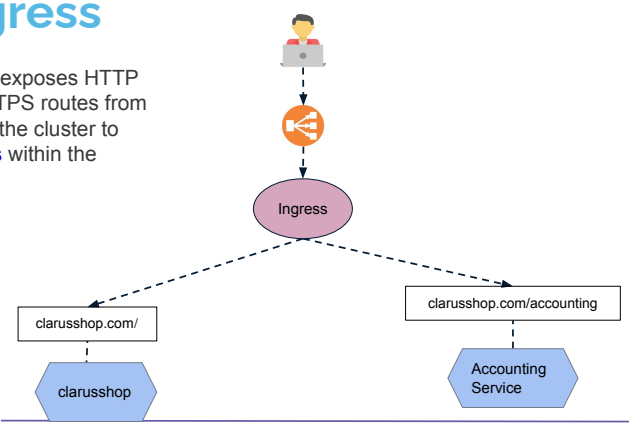
Ingress

Ingress exposes HTTP and HTTPS routes from outside the cluster to services within the cluster.



Ingress

Ingress exposes HTTP and HTTPS routes from outside the cluster to services within the cluster.

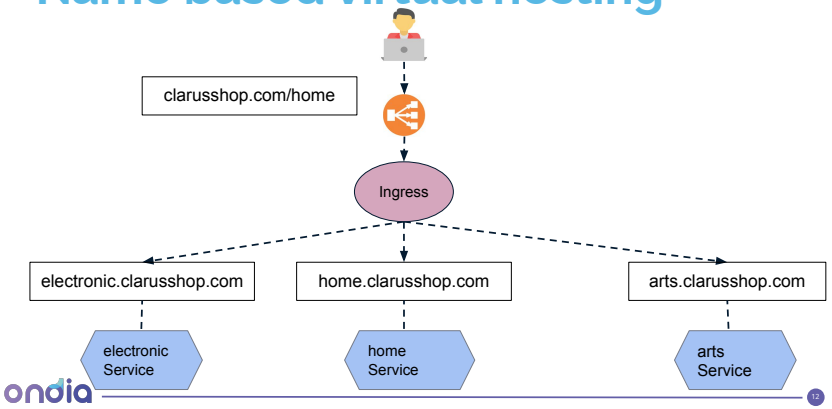


Ingress

With Ingress, users do not connect directly to a Service. Users reach the Ingress endpoint, and, from there, the request is forwarded to the desired Service.

```yaml
apiVersion: networking.k8s.io/v1
kind: Ingress
metadata:
 name: clarusshop-ingress
 annotations:
   nginx.ingress.kubernetes.io/rewrite-target: /
spec:
 ingressClassName: nginx
 rules:
   - http:
       paths:
         - path: /
           pathType: Prefix
           backend:
             service:
               name: clarusshop-svc
               port:
                 number: 80
         - path: /account
           pathType: Prefix
           backend:
             service:
               name: account-svc
               port:
                 number: 80
```


Name based virtual hosting



Name based virtual hosting

Name-based virtual hosts support routing HTTP traffic to multiple host names at the same IP address.

```yaml
apiVersion: networking.k8s.io/v1
kind: Ingress
metadata:
 name: clarusshop-ingress
 annotations:
   nginx.ingress.kubernetes.io/rewrite-target: /
spec:
 ingressClassName: nginx
 rules:
   - host: home.clarusshop.com
     http:
       paths:
         - path: /
           pathType: Prefix
           backend:
             service:
               name: clarusshop-svc
               port:
                 number: 80
   - host: home.clarusshop.com
     http:
       paths:
         - path: /account
           pathType: Prefix
           backend:
             service:
               name: account-svc
               port:
                 number: 80
```


2

Storage Class

The interaction between PVs and PVCs

Provisioning

There are two ways PVs may be provisioned: statically or dynamically.

Static

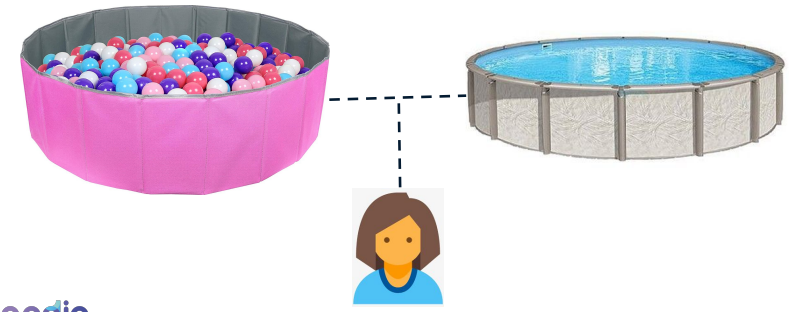
A cluster administrator creates a number of PVs. They carry the details of the real storage, which is available for use by cluster users. They exist in the Kubernetes API and are available for consumption.

Dynamic

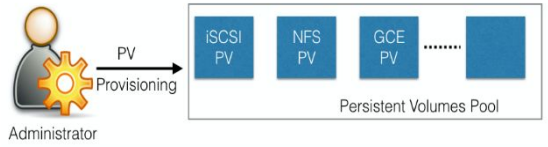
When none of the static PVs the administrator created match a user's PersistentVolumeClaim, the cluster may try to dynamically provision a volume specially for the PVC. This provisioning is based on **StorageClasses**.

The interaction between PVs and PVCs

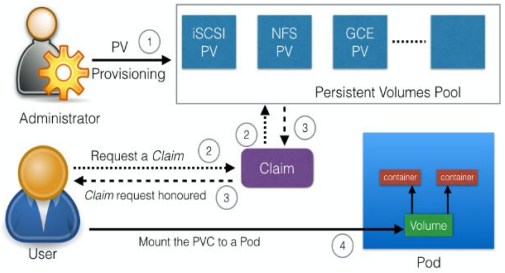
Static **Dynamic**



Static PV Provisioning

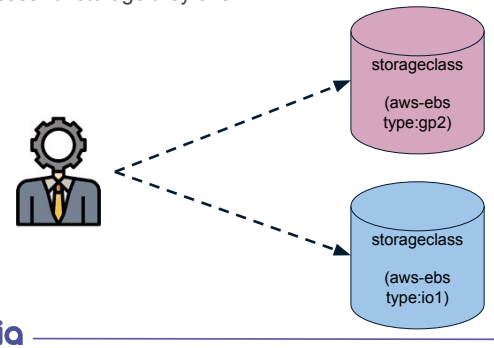


Static PV Provisioning

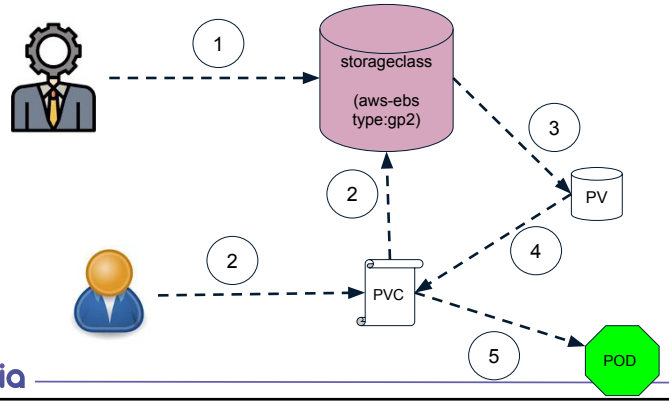


Dynamic PV Provisioning

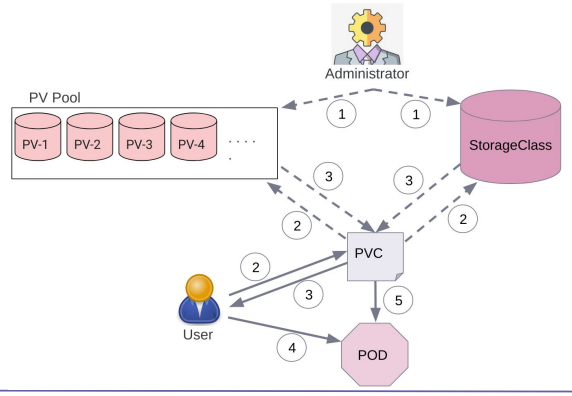
A **StorageClass** provides a way for administrators to describe the "classes" of storage they offer.



Dynamic PV Provisioning



PV Provisioning



Storage Class

```yaml
kind: StorageClass
apiVersion: storage.k8s.io/v1
metadata:
 name: aws-standard
 annotations:
   storageclass.kubernetes.io/is-default-class: "true"
provisioner: kubernetes.io/aws-ebs
parameters:
 type: gp2
 fsType: ext4
```

Provisioner: Each StorageClass has a provisioner that determines what volume plugin is used for provisioning PVs.

Parameters: Storage Classes have parameters that describe volumes belonging to the storage class. Different parameters may be accepted depending on the provisioner

Hands-on

t2.micro

- kubectl
- eksctl
- aws configure / Role

$ eksctl create cluster

NODE-1 NODE-2

t3a.medium t3a.medium

CONTROL PLANE/EKS

SC → PVC → POD

ondia

THANKS!

Any questions?

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