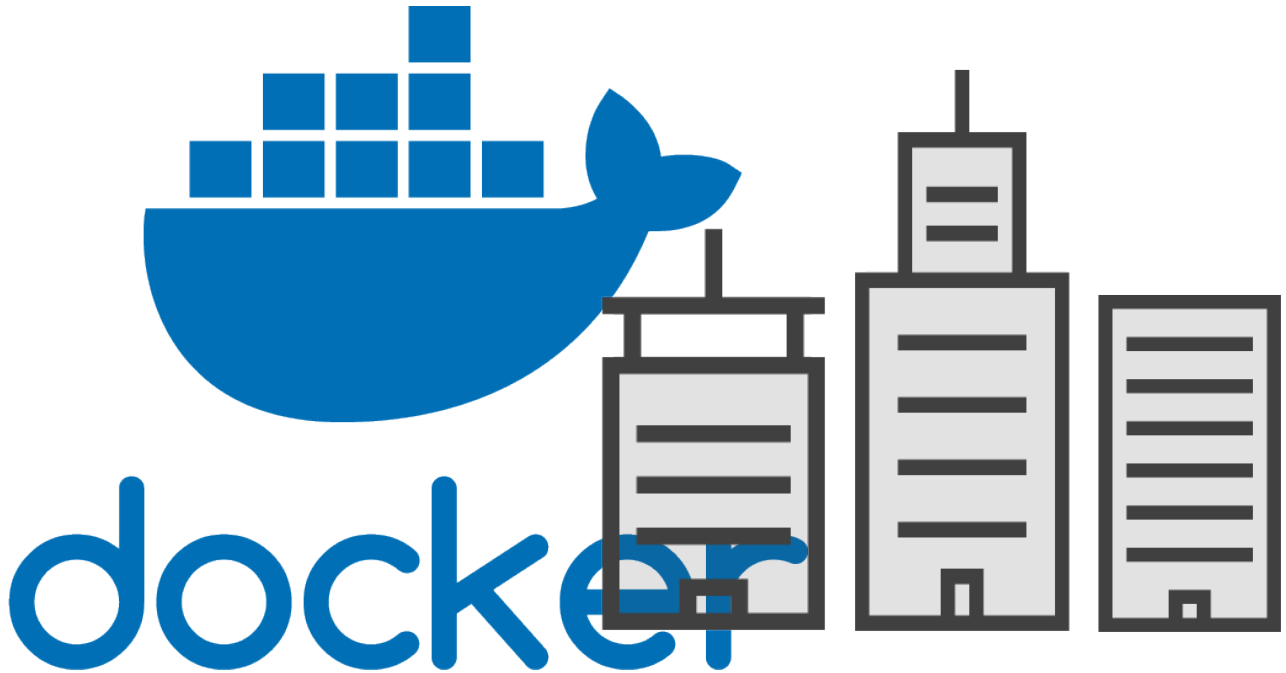
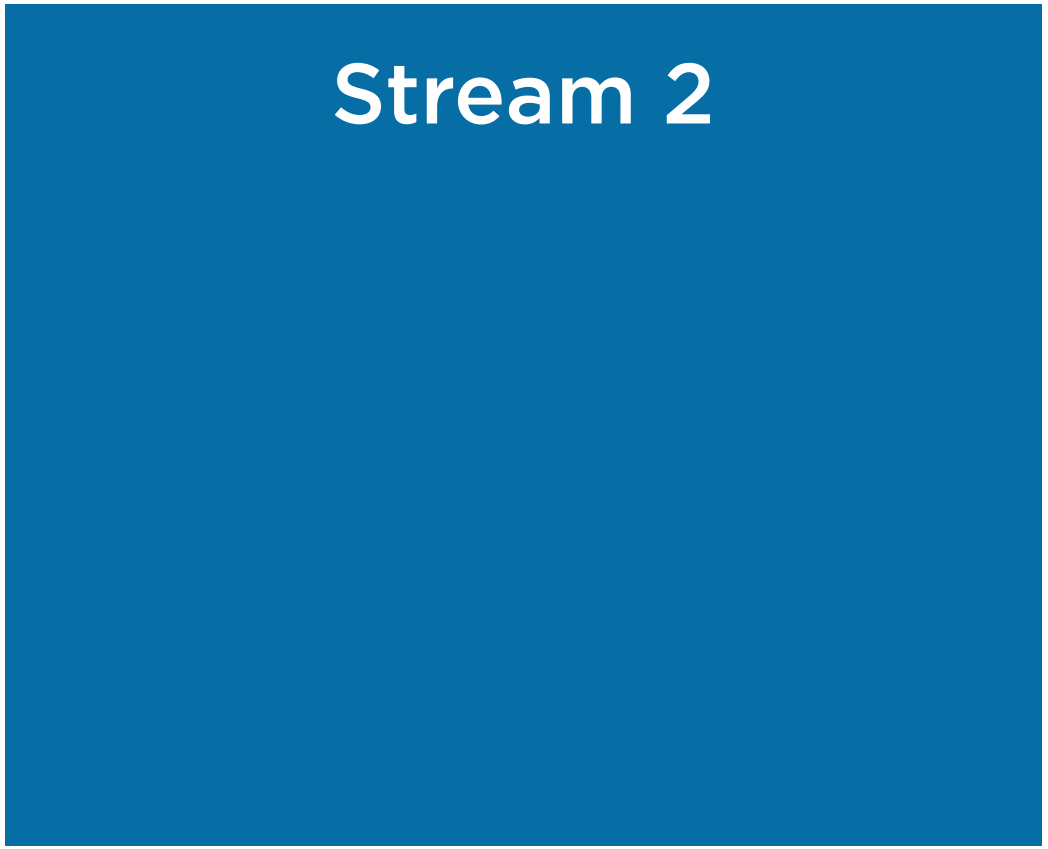
Enterprise Tooling

Nigel Poulton

@nigelpoulton www.nigelpoulton.com


docker

CROSSING STREAMS



CROSSING STREAMS

CROSSING STREAMS

Stream 1

Show some enterprise-grade value-add products

Stream 2

Cover some DCA exam objectives

CROSSING STREAMS

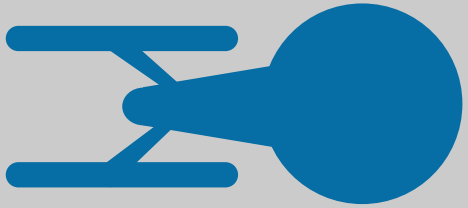
Stream 1

Show some enterprise-grade value-add products

Stream 2

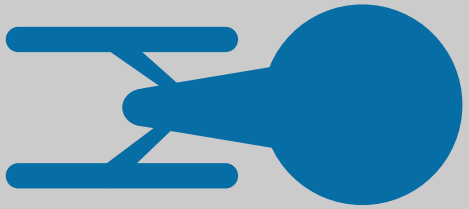
Cover some DCA exam objectives

Module Outline



- Big Picture
- Docker Universal Control Plane (UCP)
- Docker Trusted Registry (DTR)
- RBAC
- Image Scanning
- Load Balancing
- Recap

Module Outline



- Big Picture
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- Image Scanning
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- Recap

Domain 2: Image Creation, Management, and Registry

- Deploy a Registry
- Configure a Registry
- Login to a registry
- Push an image to a registry

Domain 3: Installation and Configuration

- Consistently repeat steps to deploy Docker engine, UCP, and DTR on AWS and on premises in an HA config

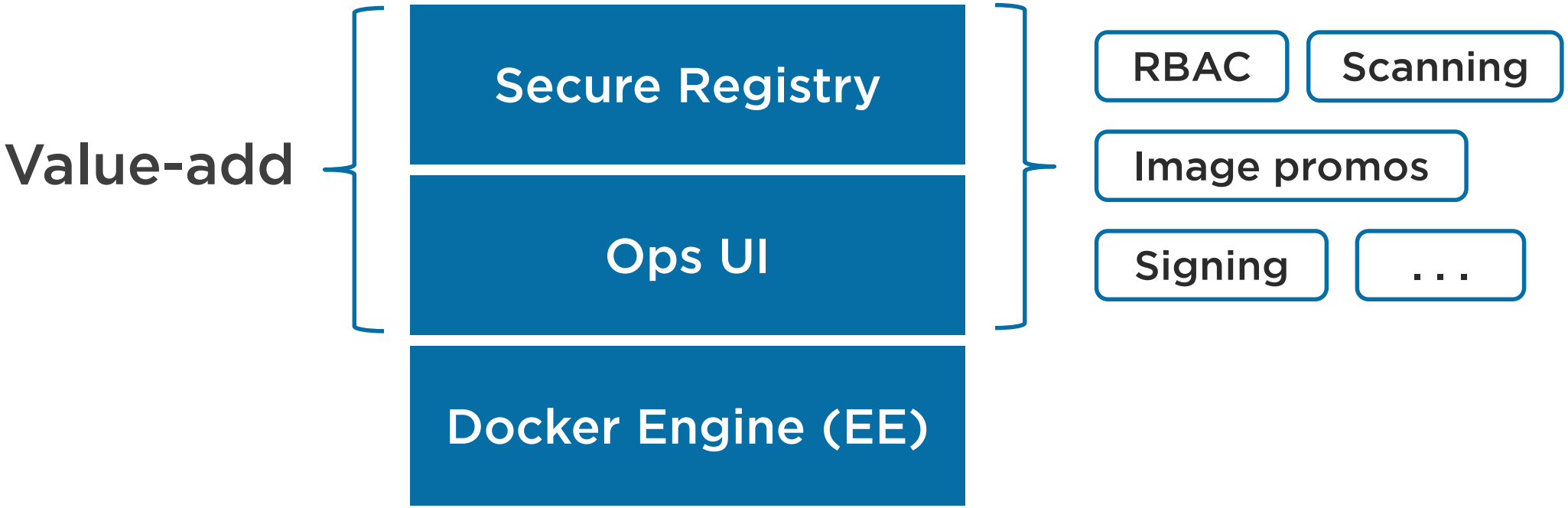
Domain 4: Networking

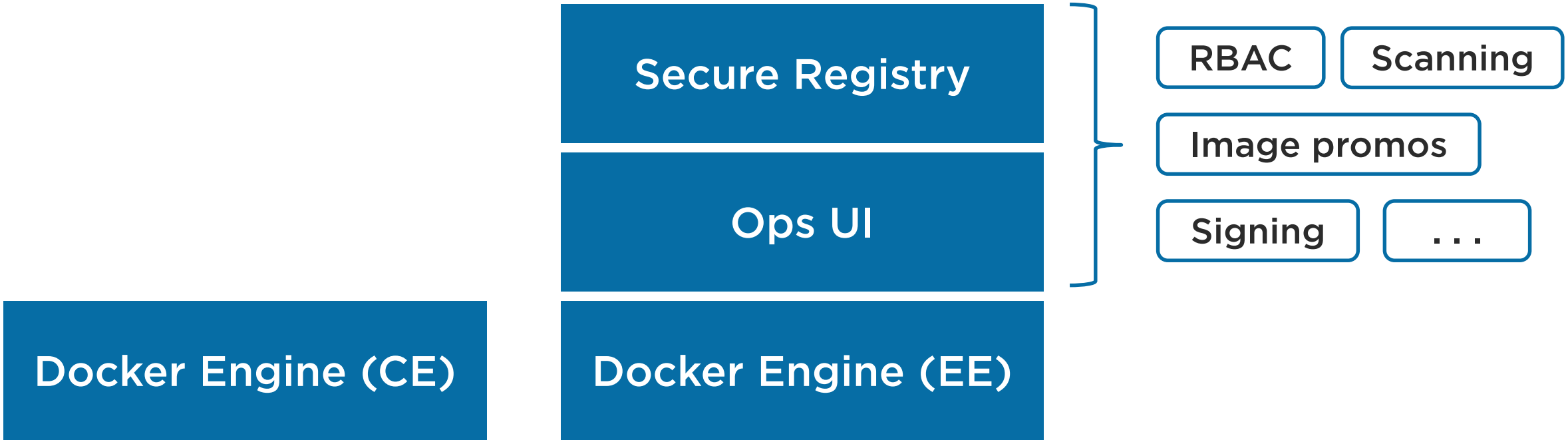
- Use Docker to load balance HTTP/HTTPs traffic to an application (Configure L7 load balancing with Docker EE)

Domain 5: Security

- Demonstrate that an image passes a security scan
- Configure RBAC in UCP
- Describe the difference between UCP workers and managers

Docker Enterprise Edition (EE)


Value-add
Secure Registry
Ops UI
Docker Engine (EE)
RBAC
Scanning
Image promos
Signing
. . .


Secure Registry
Ops UI
Docker Engine (CE)
Docker Engine (EE)
RBAC
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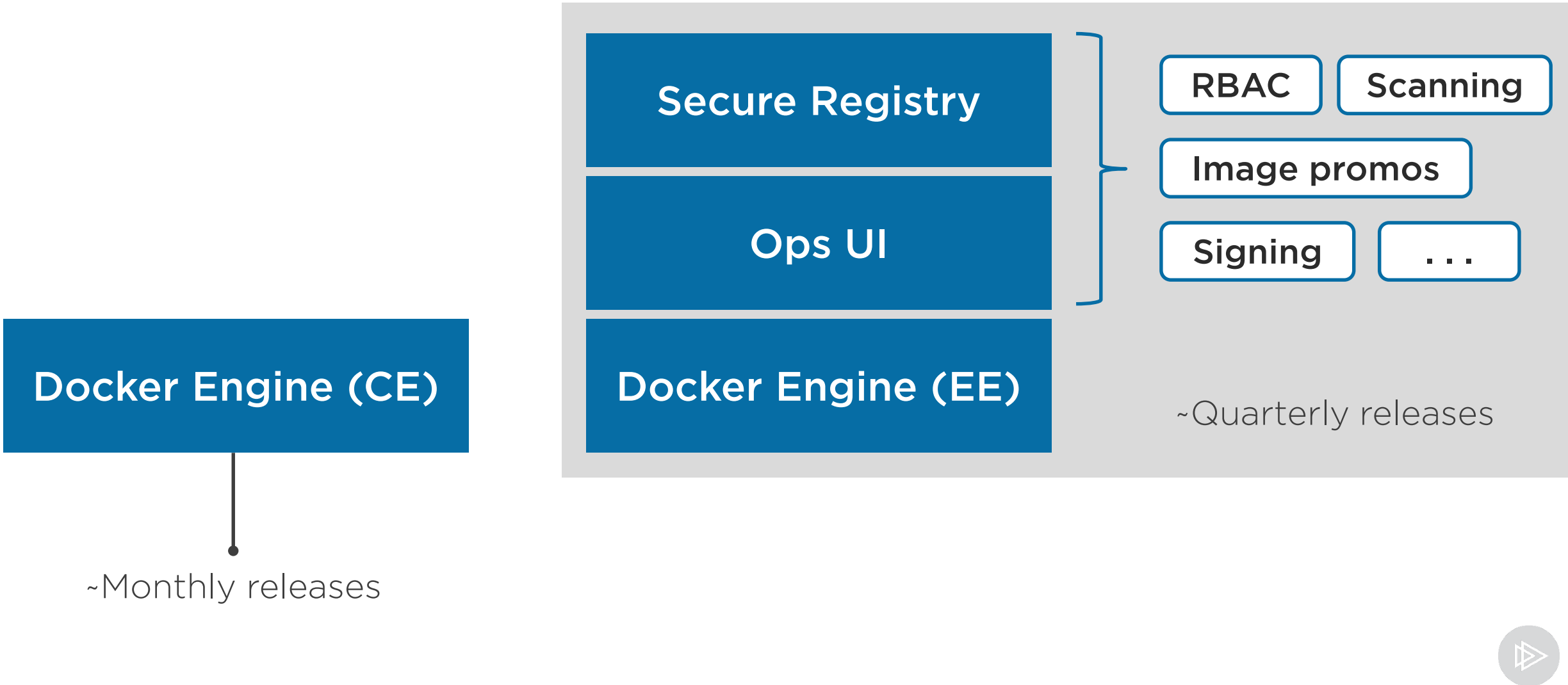
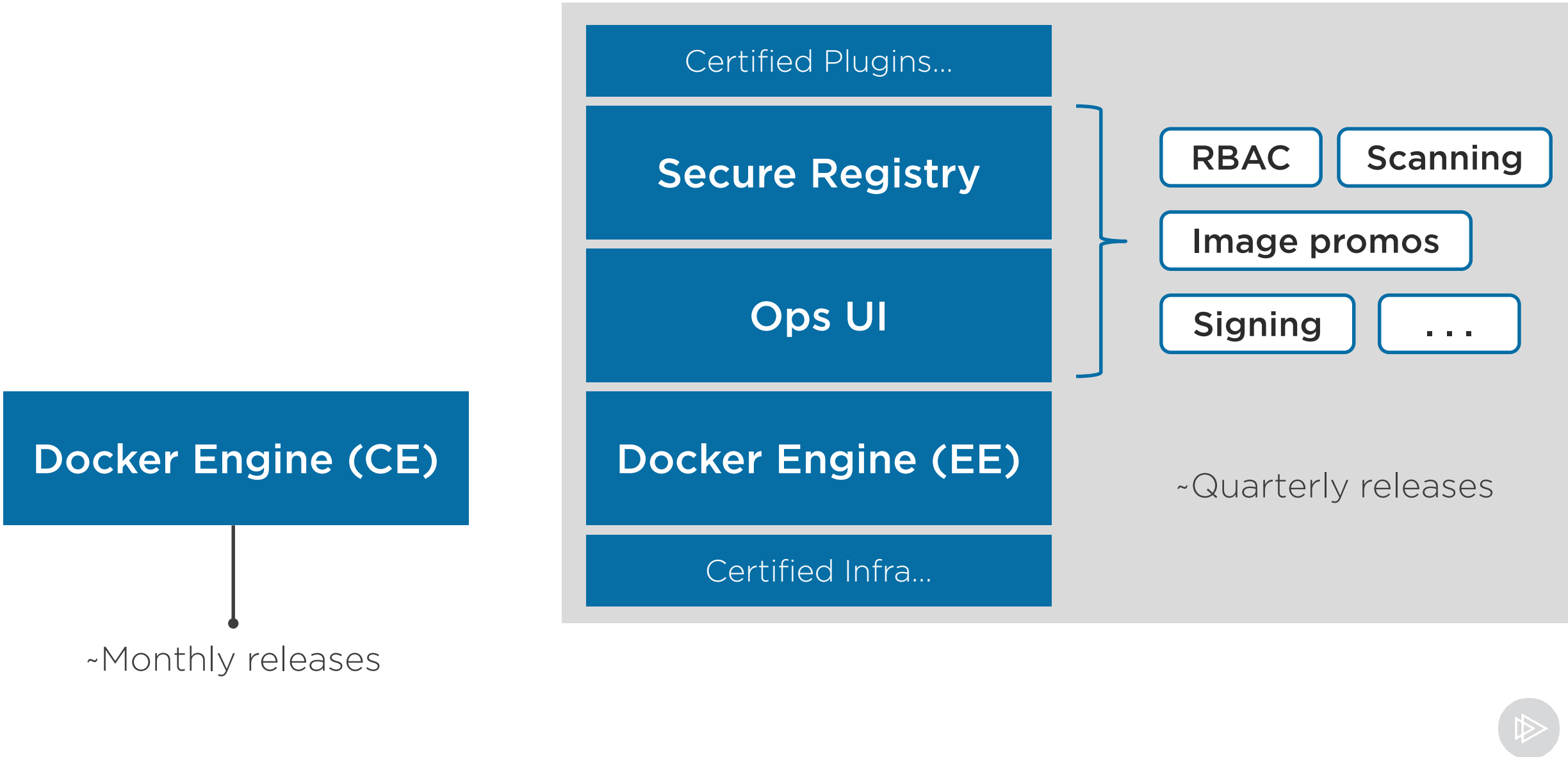
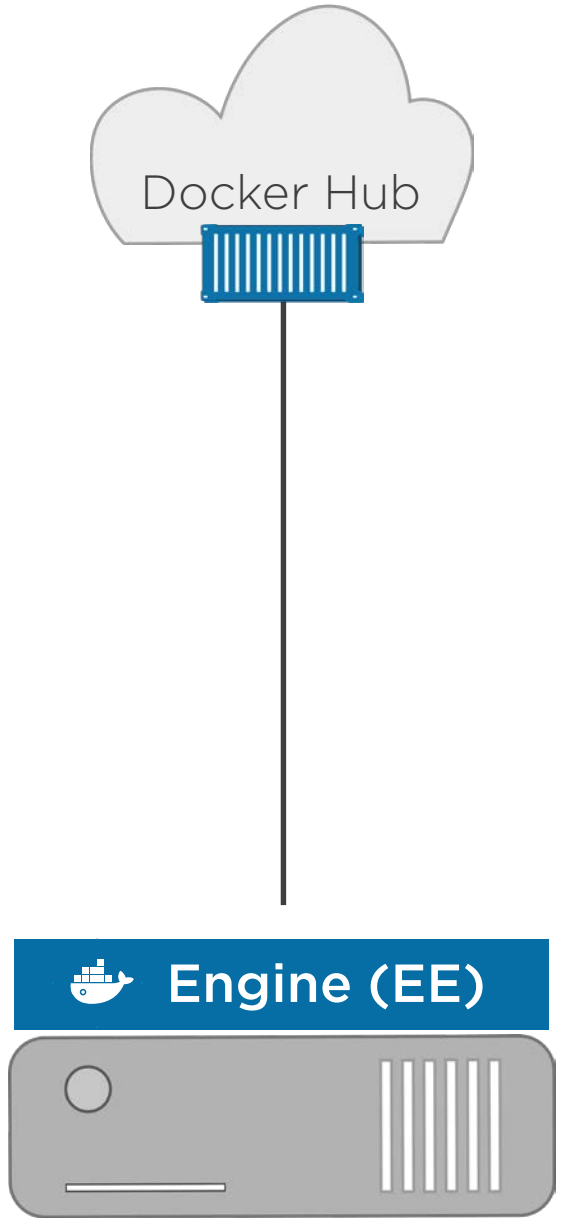
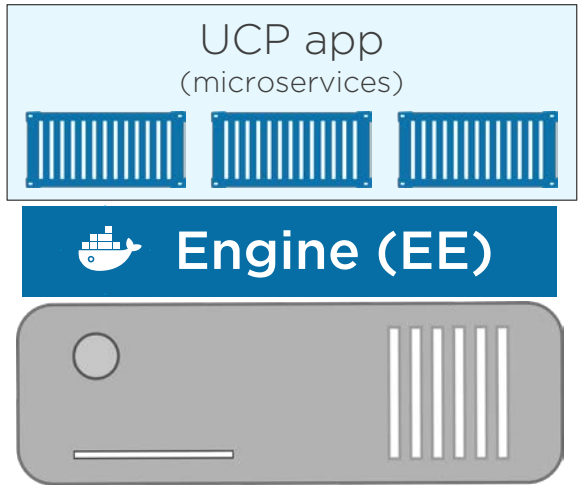

Secure Registry
Ops UI
Docker Engine (EE)
RBAC
Scanning
Image promos
Signing
. . .
~Quarterly releases
Docker Engine (CE)
~Monthly releases

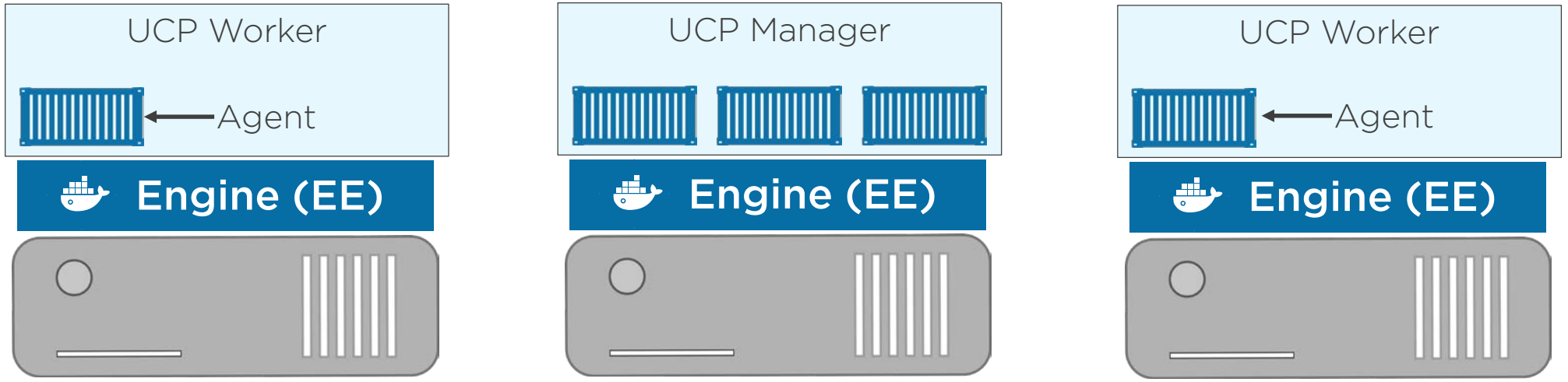

Docker Engine (CE)
~Monthly releases
Certified Plugins...
Secure Registry
Ops UI
Docker Engine (EE)
Certified Infra...
RBAC
Scanning
Image promos
Signing
. . .
~Quarterly releases

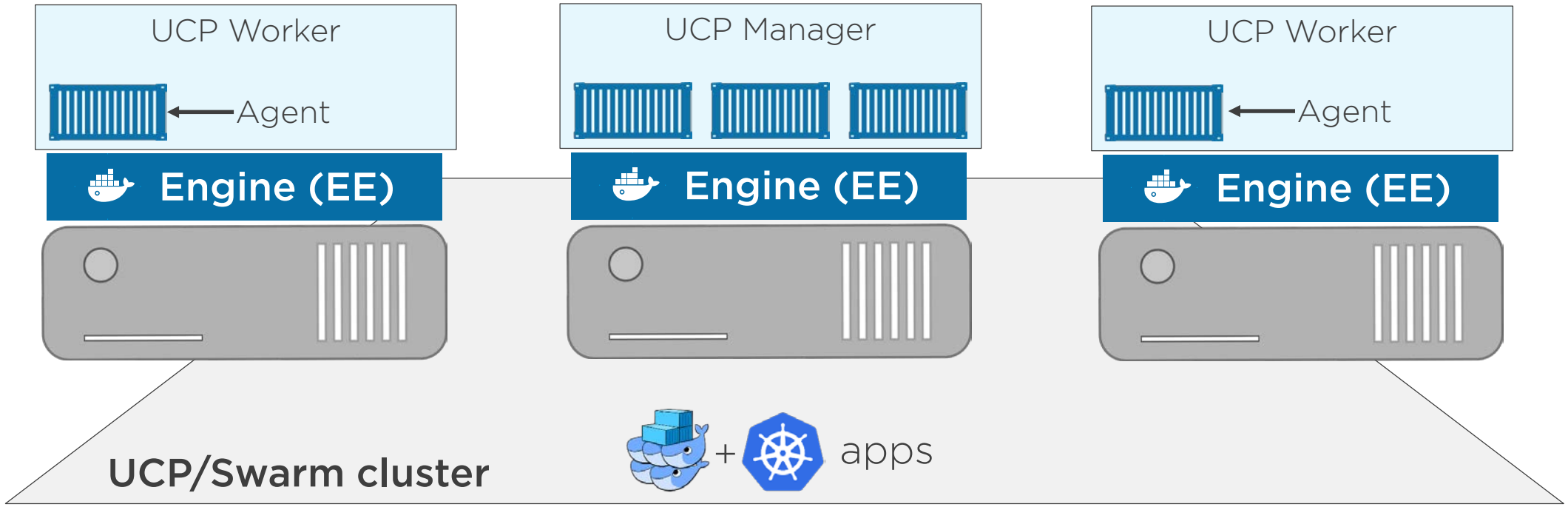
Universal Control Plane (UCP)

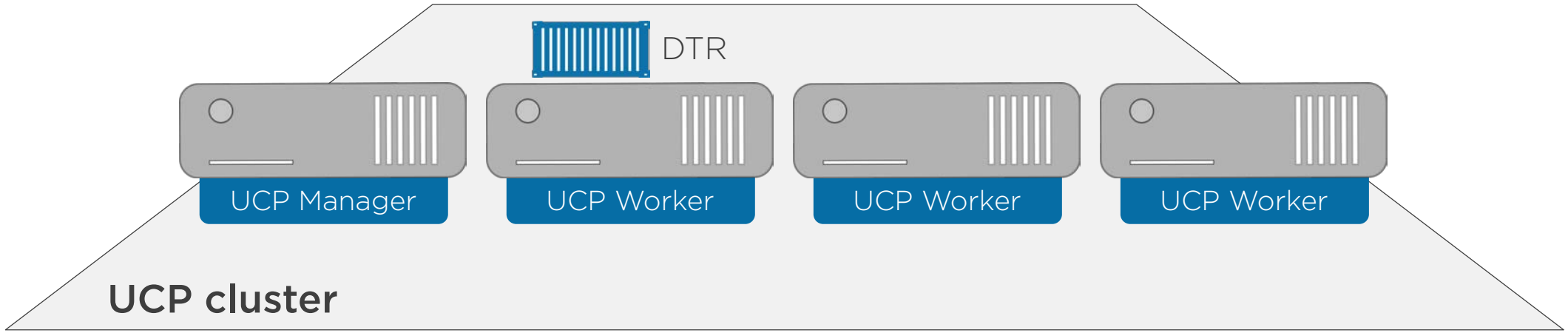
The Operations GUI from Docker, Inc.


Docker Hub
Engine (EE)


UCP app
(microservices)
Engine (EE)

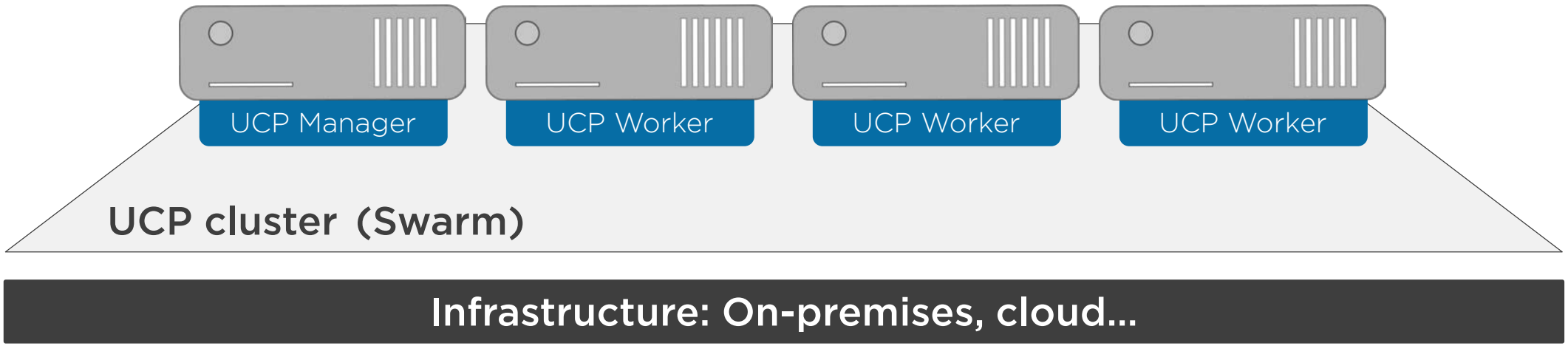

UCP Worker
Agent
Engine (EE)
UCP Manager
Engine (EE)
UCP Worker
Agent
Engine (EE)

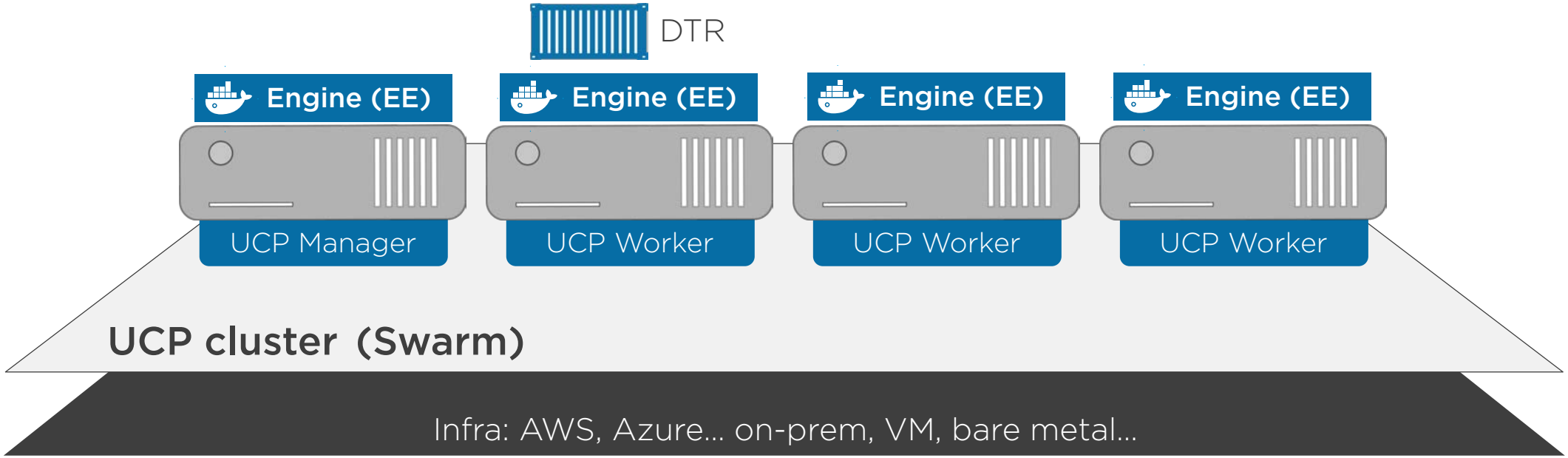

UCP Worker
Agent
Engine (EE)
UCP Manager
Engine (EE)
UCP Worker
Agent
Engine (EE)
+
apps
UCP/Swarm cluster


DTR
UCP Manager
UCP Worker
UCP Worker
UCP Worker
UCP cluster

Docker Trusted Registry

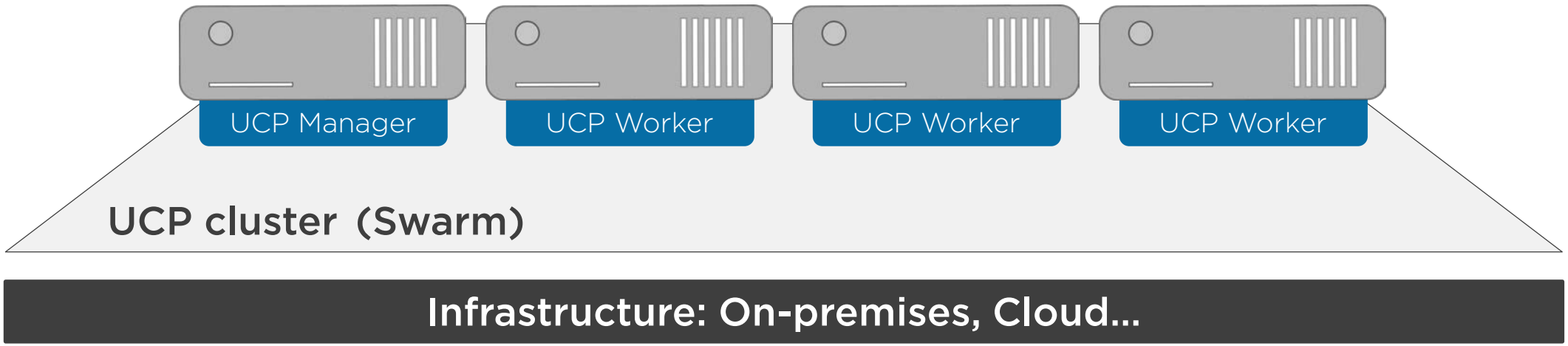
Securely yours


UCP Manager
UCP Worker
UCP Worker
UCP Worker
UCP cluster (Swarm)
Infrastructure: On-premises, cloud...


DTR
Engine (EE)
Engine (EE)
Engine (EE)
Engine (EE)
UCP Manager
UCP Worker
UCP Worker
UCP Worker
UCP cluster (Swarm)
Infra: AWS, Azure... on-prem, VM, bare metal...

Recap

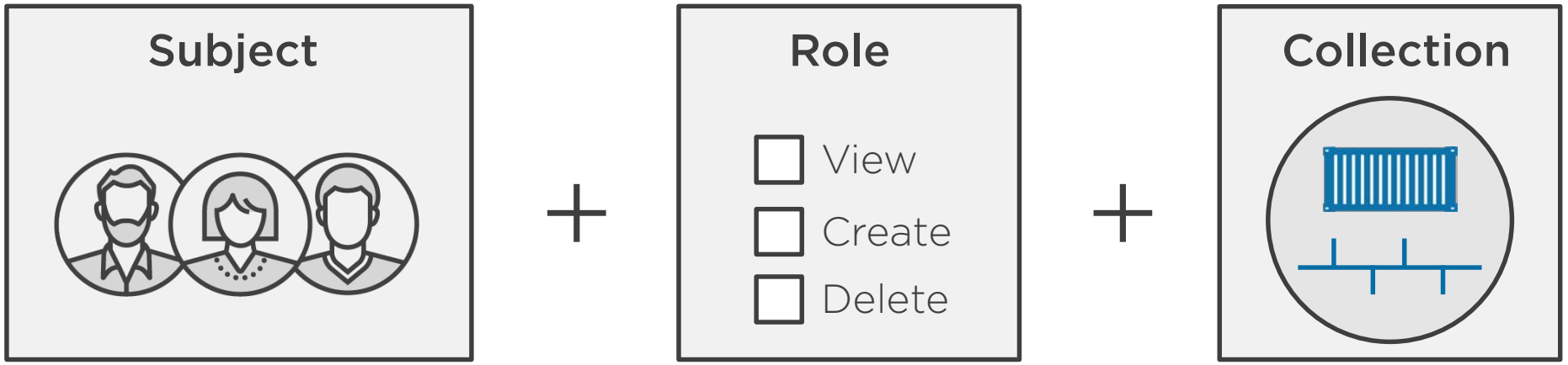
In case you've forgotten


UCP Manager
UCP Worker
UCP Worker
UCP Worker
UCP cluster (Swarm)
Infrastructure: On-premises, Cloud...

RBAC

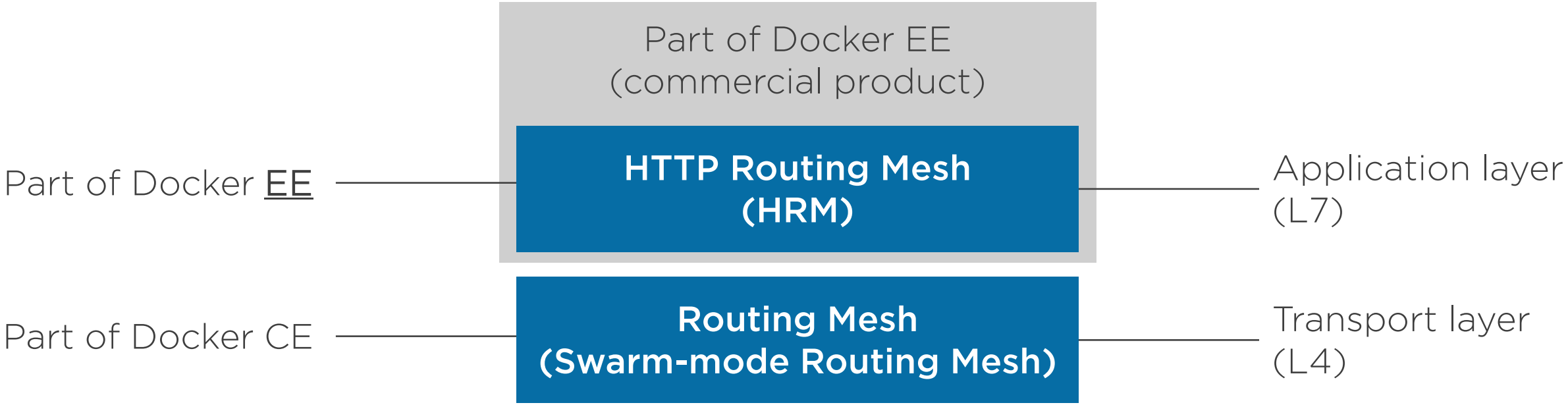
Controlling access

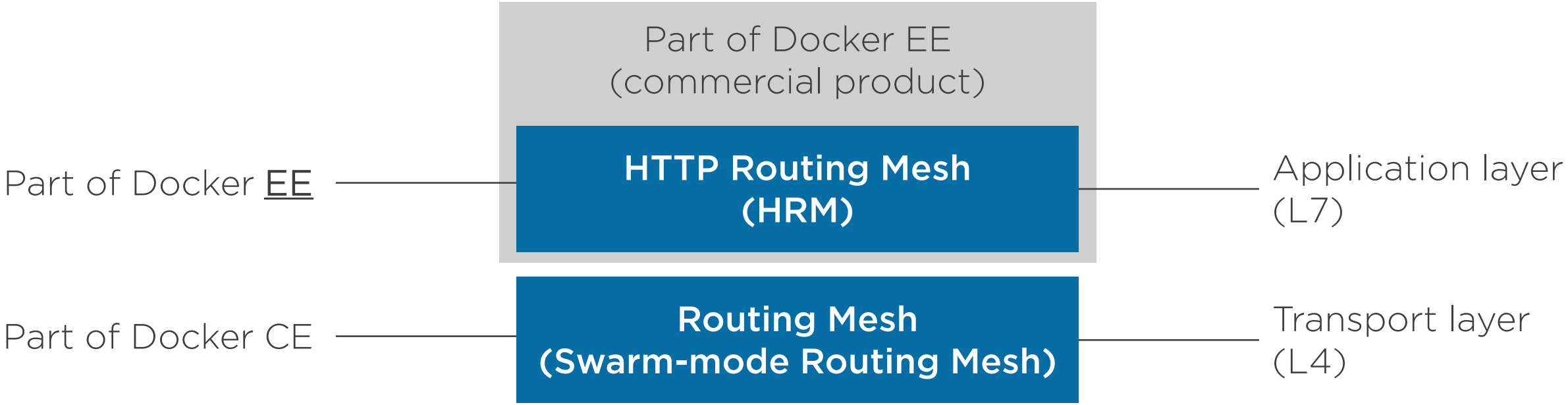
Grant



HTTP Routing Mesh (HRM)

A bit of application inteligence


Part of Docker EE
(commercial product)
Part of Docker EE
HTTP Routing Mesh
(HRM)
Application layer
(L7)
Part of Docker CE
Routing Mesh
(Swarm-mode Routing Mesh)
Transport layer
(L4)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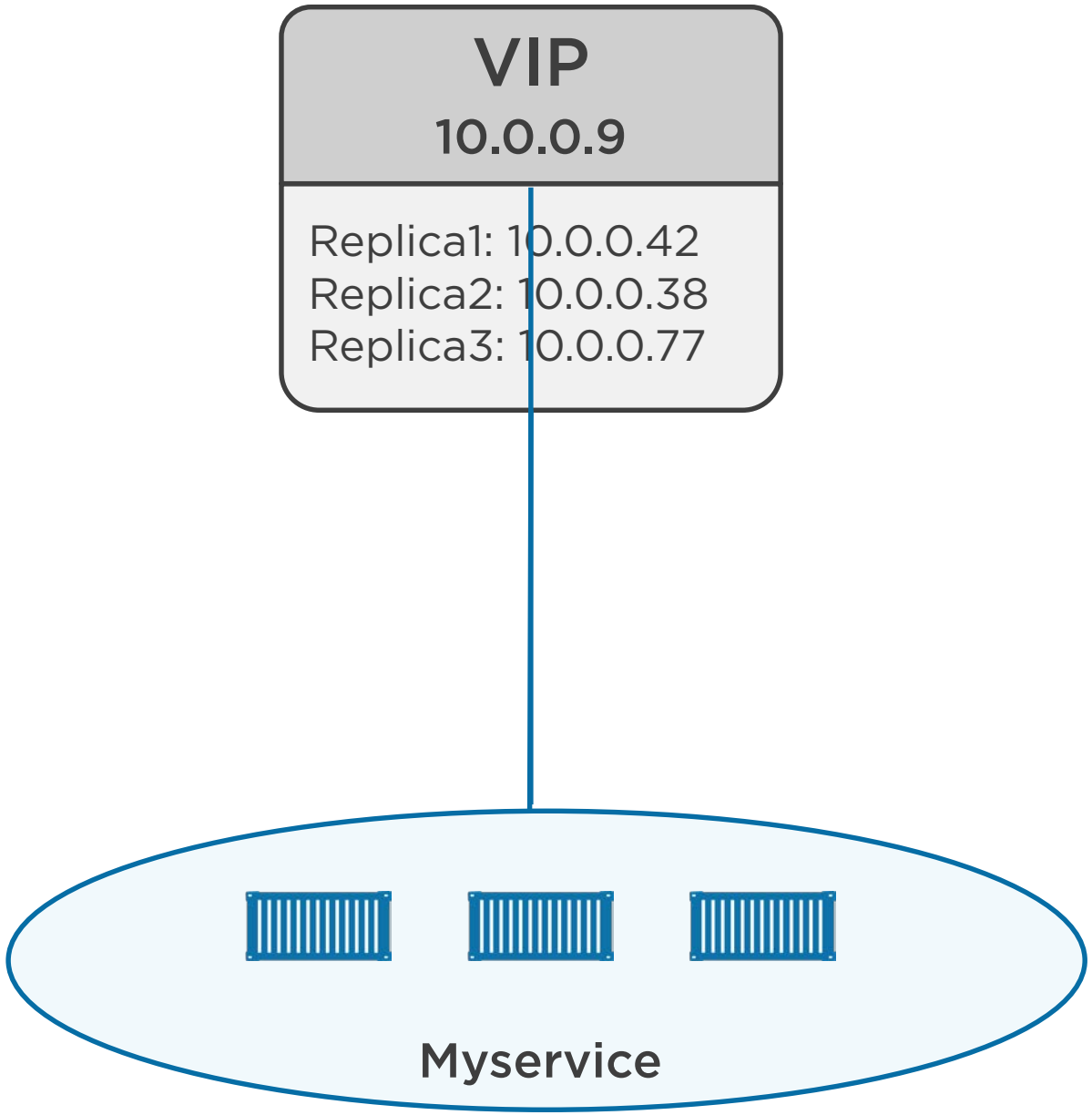
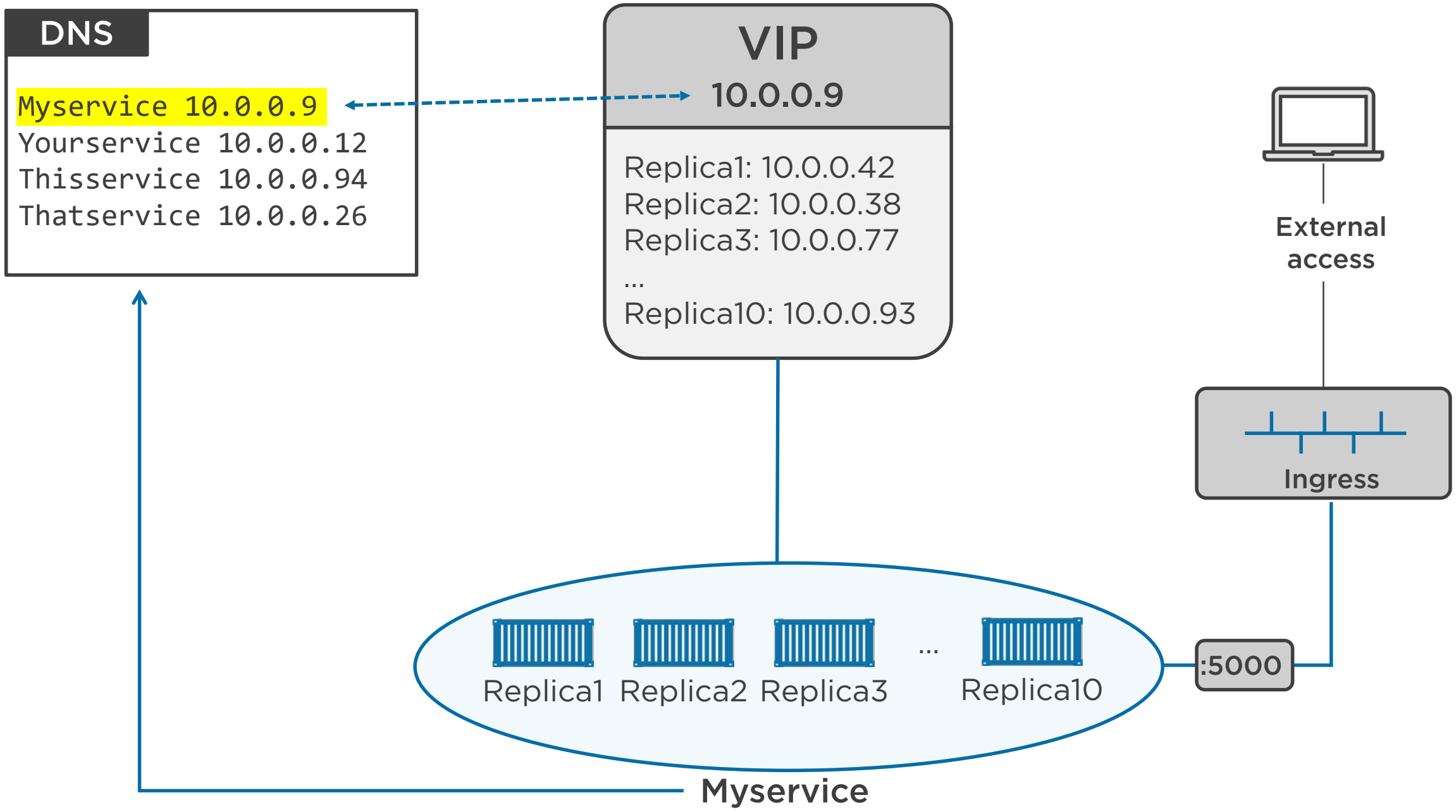
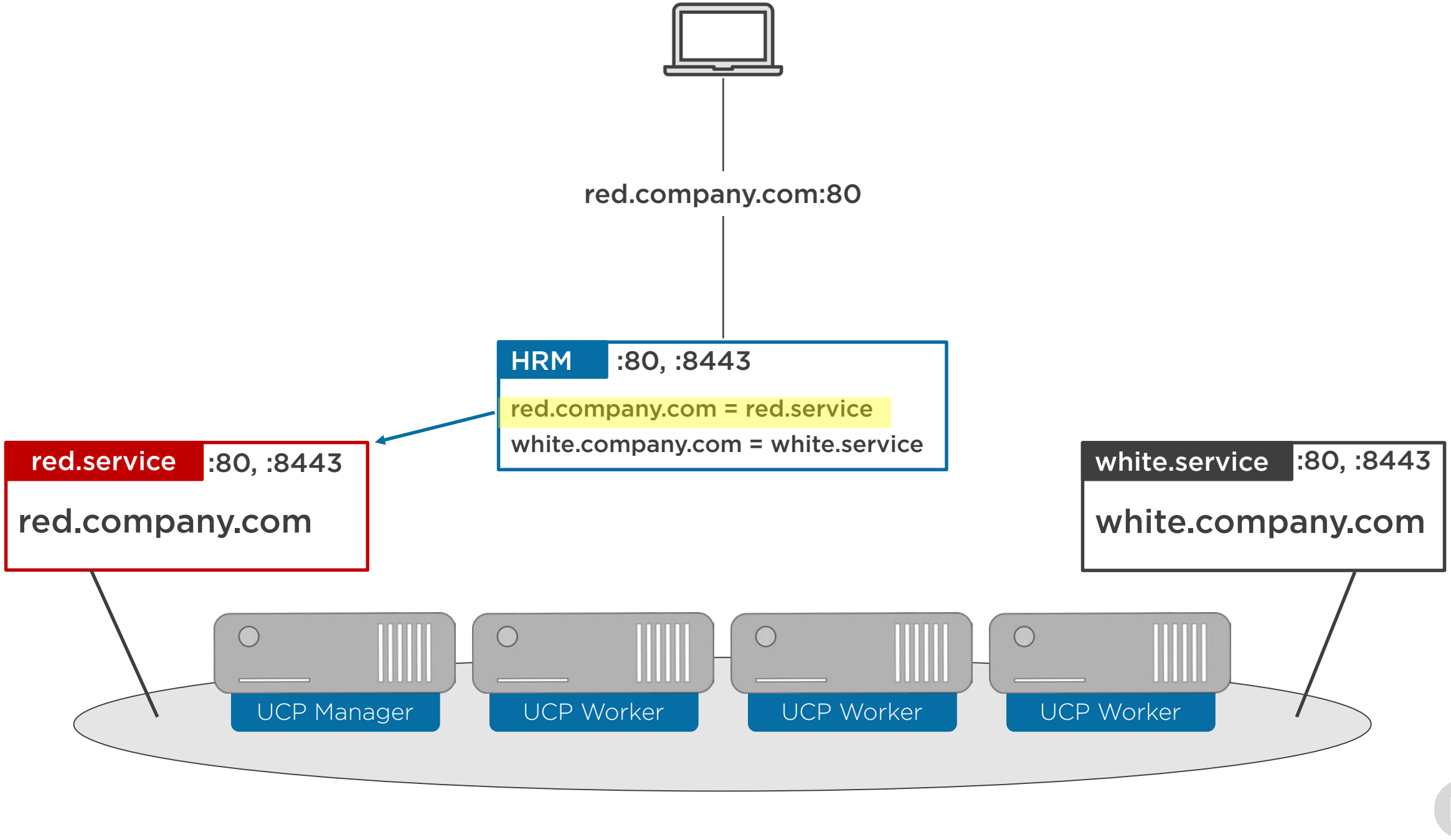
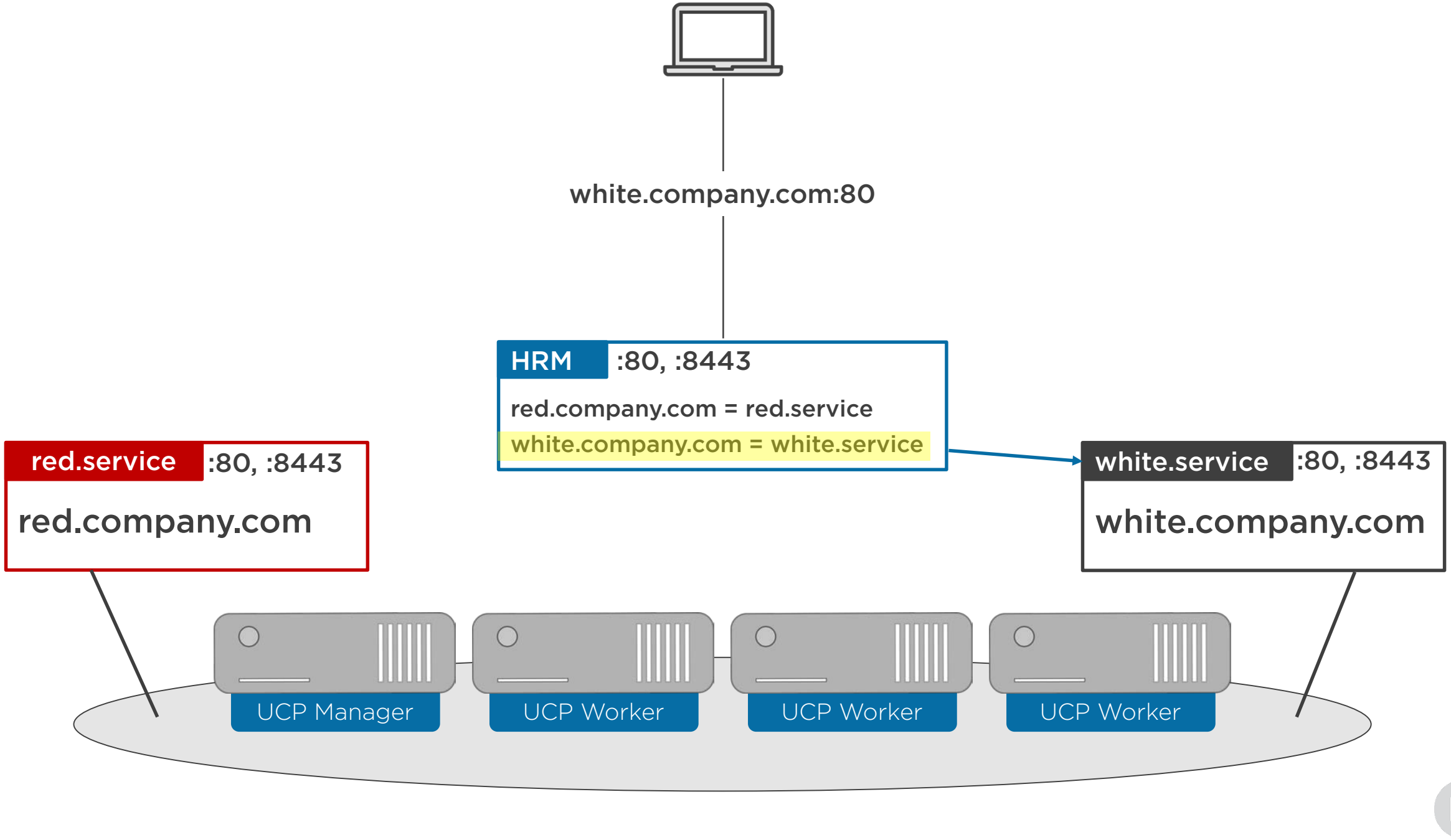

VIP
10.0.0.9
Replica1: 10.0.0.42
Replica2: 10.0.0.38
Replica3: 10.0.0.77
Myservice

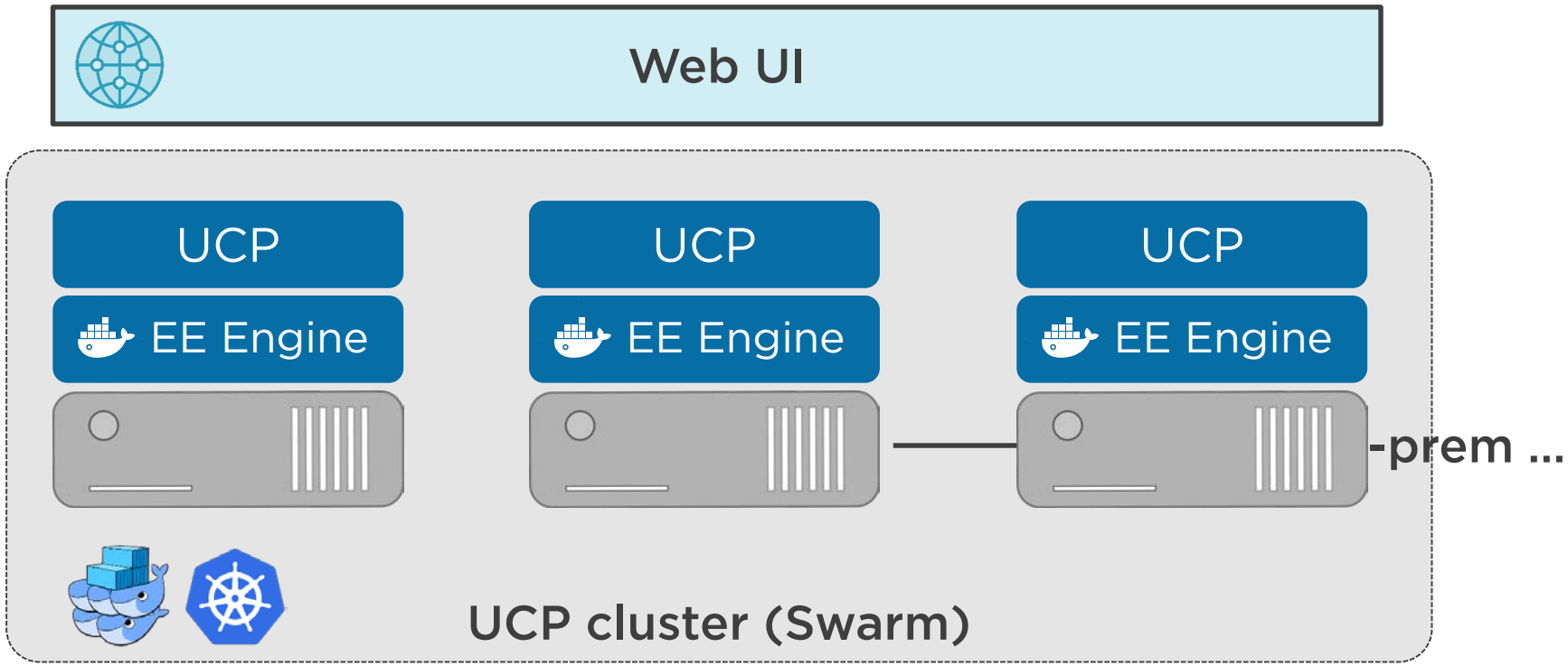

DNS
Myservice 10.0.0.9
Yourservice 10.0.0.12
Thisservice 10.0.0.94
Thatservice 10.0.0.26
VIP
10.0.0.9
Replica1: 10.0.0.42
Replica2: 10.0.0.38
Replica3: 10.0.0.77
...
Replica10: 10.0.0.93
External access
Ingress
:5000
Replica1
Replica2
Replica3
...
Replica10
Myservice

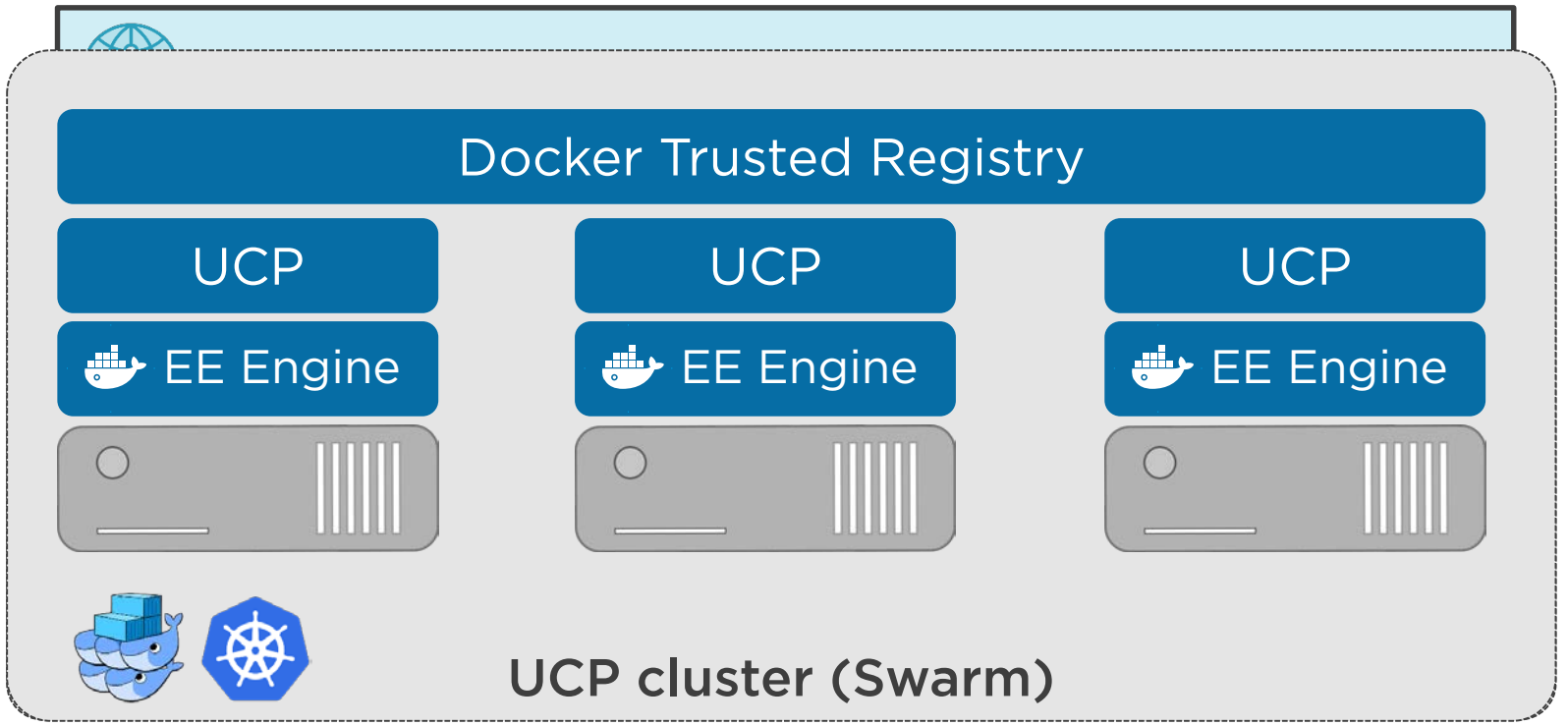

red.company.com:80
HRM
:80, :8443
red.company.com = red.service
white.company.com = white.service
red.service
:80, :8443
red.company.com
white.service
:80, :8443
white.company.com
UCP Manager
UCP Worker
UCP Worker
UCP Worker

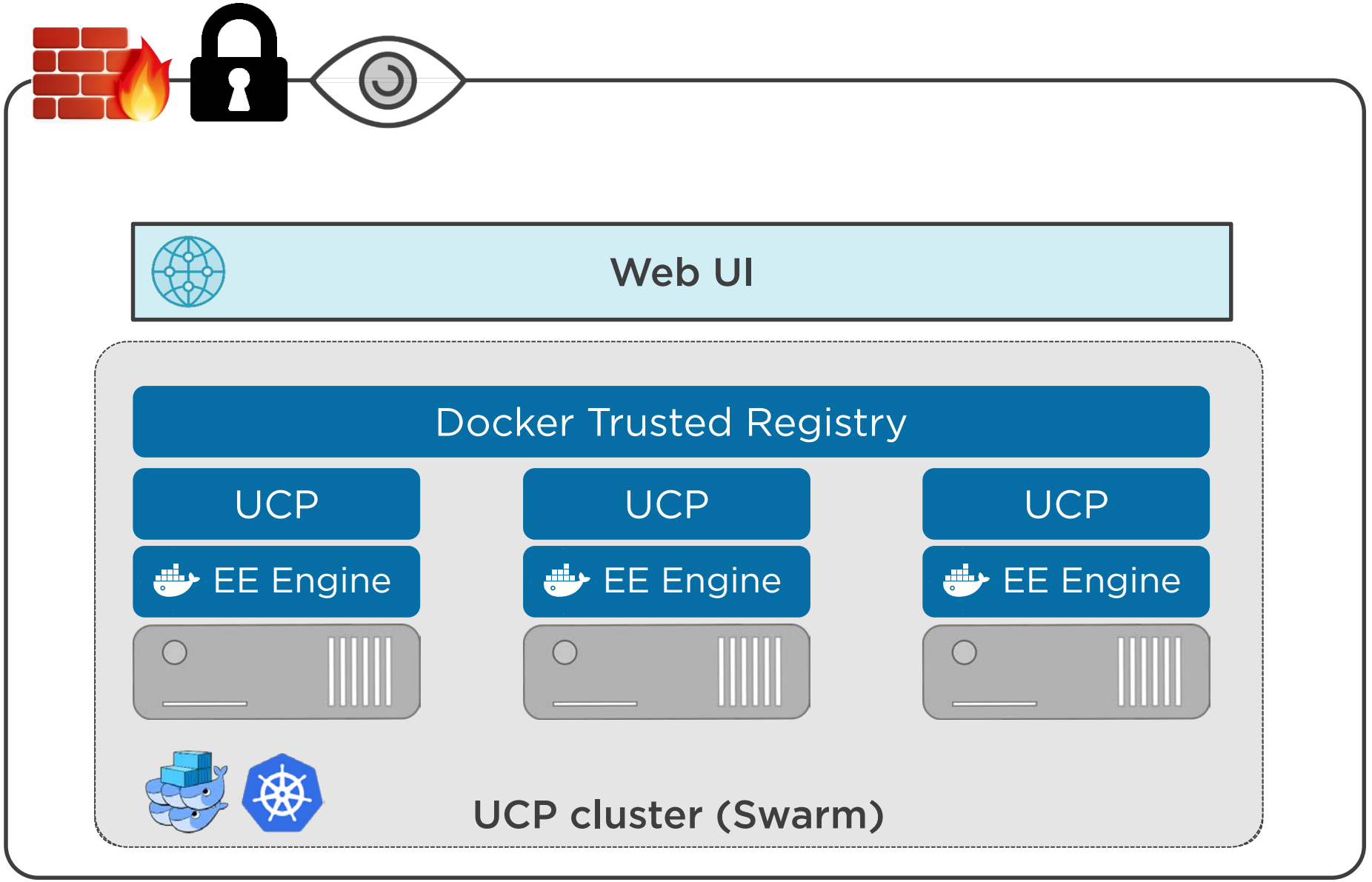

white.company.com:80
HRM
:80, :8443
red.company.com = red.service
white.company.com = white.service
red.service
:80, :8443
red.company.com
white.service
:80, :8443
white.company.com
UCP Manager
UCP Worker
UCP Worker
UCP Worker

Recap

One last time!


Web UI
UCP
EE Engine
UCP
EE Engine
UCP
EE Engine
-prem ...
UCP cluster (Swarm)


Docker Trusted Registry
UCP
UCP
UCP
EE Engine
EE Engine
EE Engine
UCP cluster (Swarm)


Web UI
Docker Trusted Registry
UCP
UCP
UCP
EE Engine
EE Engine
EE Engine
UCP cluster (Swarm)

Coming up

NEXT MODULE

Where to go now...

Don’t miss!