

Swarm Mode and Microservices



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Latest and greatest features
introduced with Docker 1.12



Plan

Nail the new theory

Build a swarm

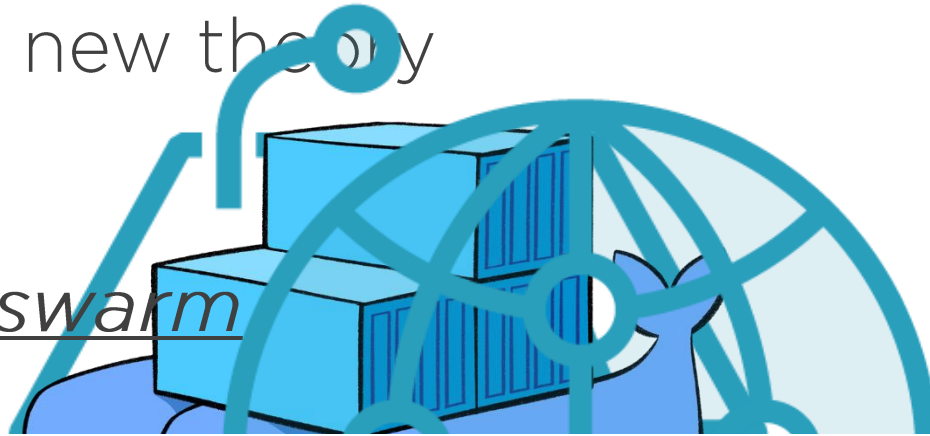
grok

/grɒk/

verb **US** *informal*

understand (something) intuitively or by empathy.

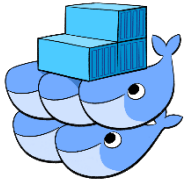
From Robert Heinlein's "Stranger in a Strange Land"



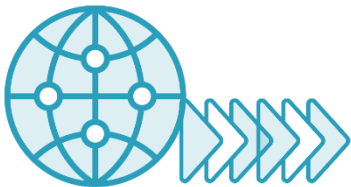
Plan



Nail the new theory



Build a swarm



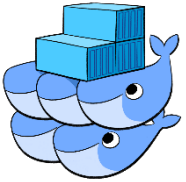
Start using services, scale them



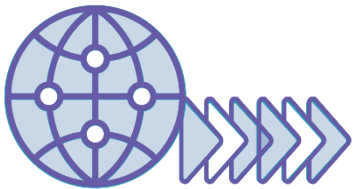
Plan



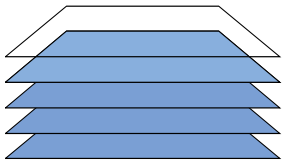
Nail the new theory



Build a swarm



Start using services, scale them, update them



Deploy a multi-service app with stacks & bundles



Swarm Mode Theory

The new stuff in Docker 1.12 and later...



Swarm Mode Theory

The new stuff in Docker 1.12 and later...



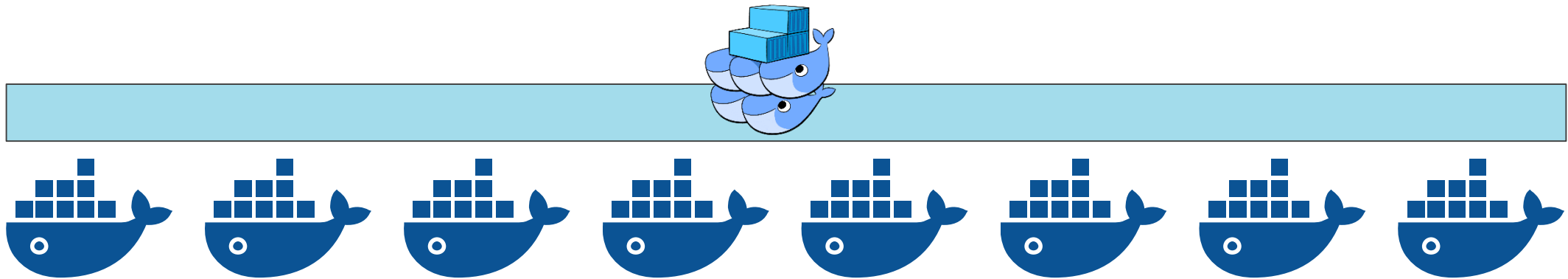
Swarm Mode Theory

The new stuff in Docker 1.12 and later...

It's all about ~~trust~~ **consensus**

Swarm

Engines



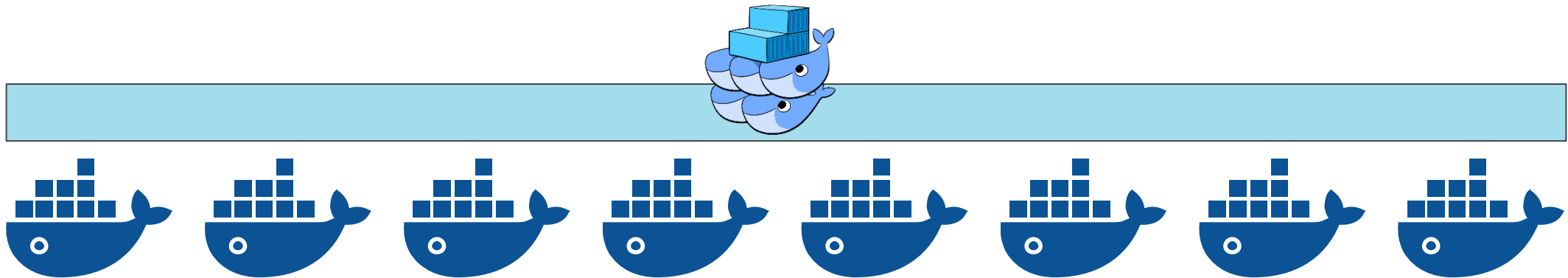
Swarm Mode Theory

The new stuff in Docker 1.12 and later...

It's all about **true native clustering**

Swarm

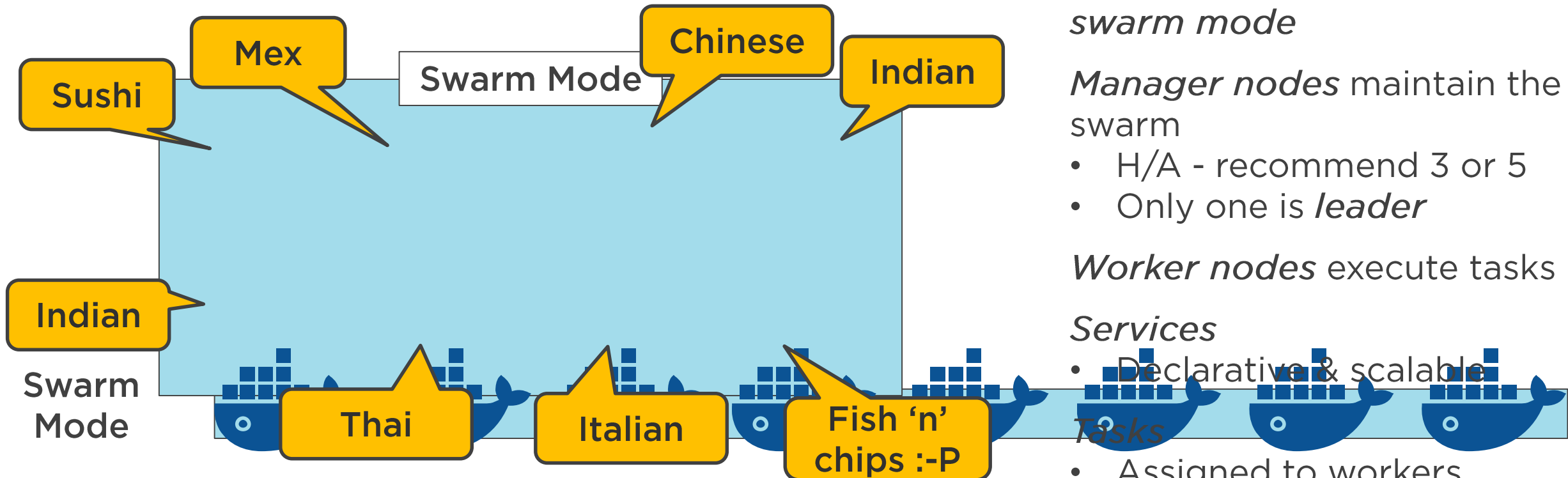
Swarm
Engines
Mode



Swarm Mode Theory

The new stuff in Docker 1.12 and later...

It's all about **true native clustering**



Terminology

A cluster = A swarm

Engines in a swarm run in *swarm mode*

Manager nodes maintain the swarm

- H/A - recommend 3 or 5
- Only one is *leader*

Worker nodes execute tasks

Services

- Declarative & scalable

Tasks

- Assigned to workers
- ~ containers



Let's go build a Swarm!



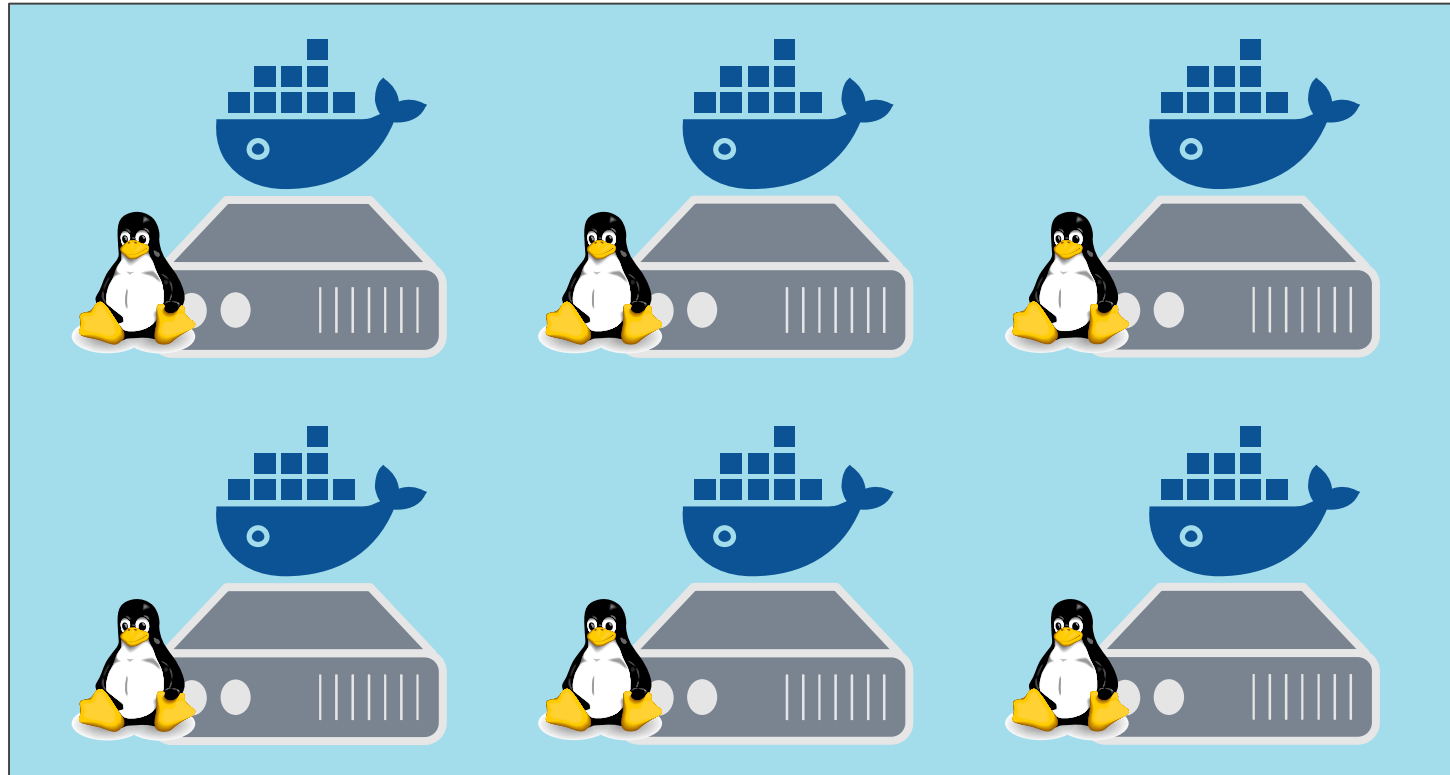
Building a Swarm

 Requires Docker 1.12 or later



Building a Swarm

3 x Managers



3 x Workers

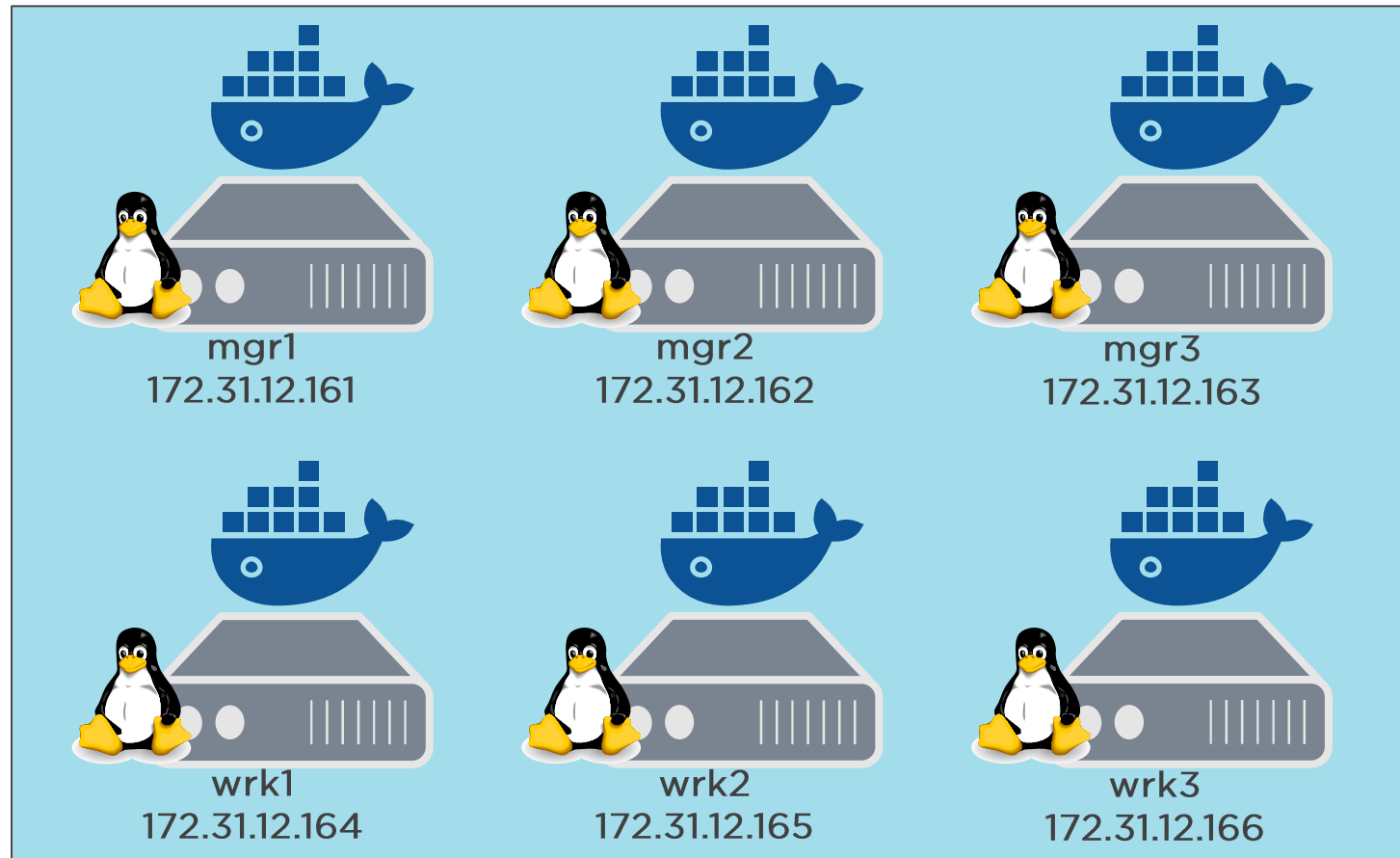


Requires Docker 1.12 or later



Building a Swarm

3 x Managers



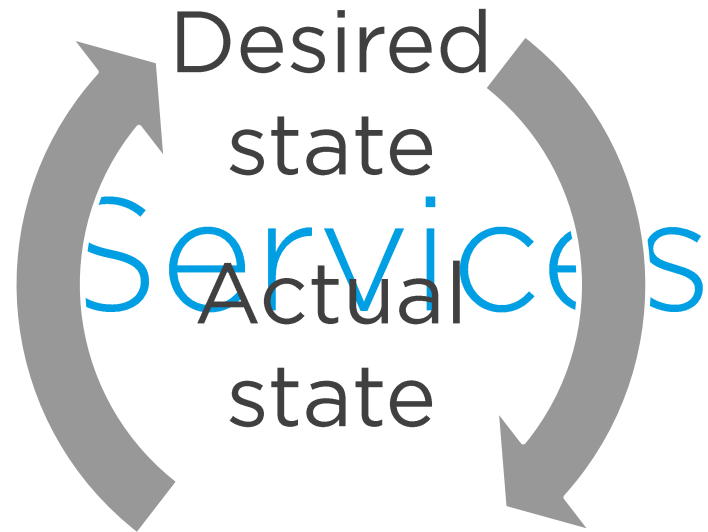
3 x Workers



Let's get into Services!



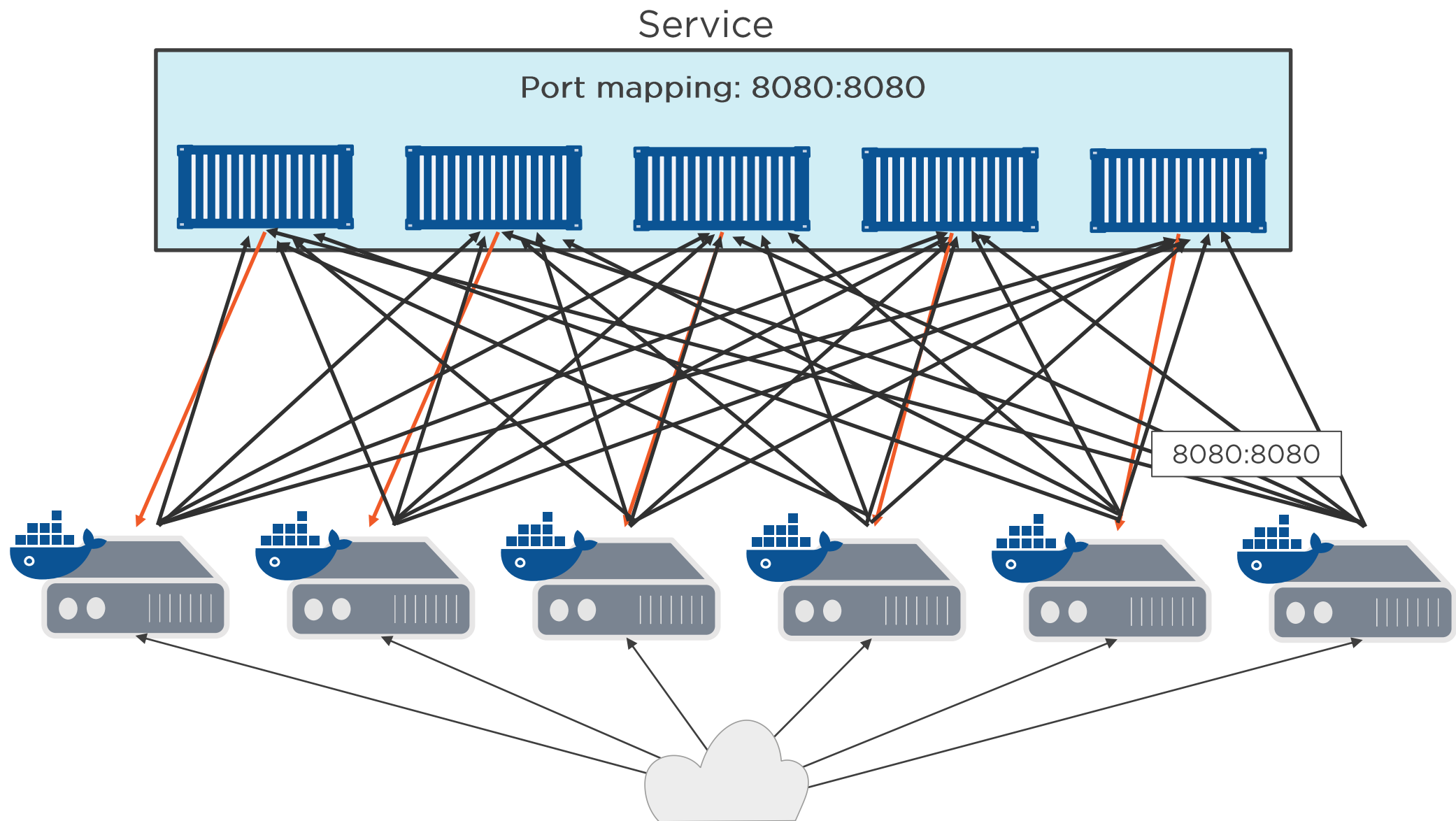
Declarative



```
$ docker service <create | ls | tasks | inspect | update | rm>
```

 Requires Docker 1.12 or later





Coming up next....

Desired state & scaling



Coming up next

Rolling Updates



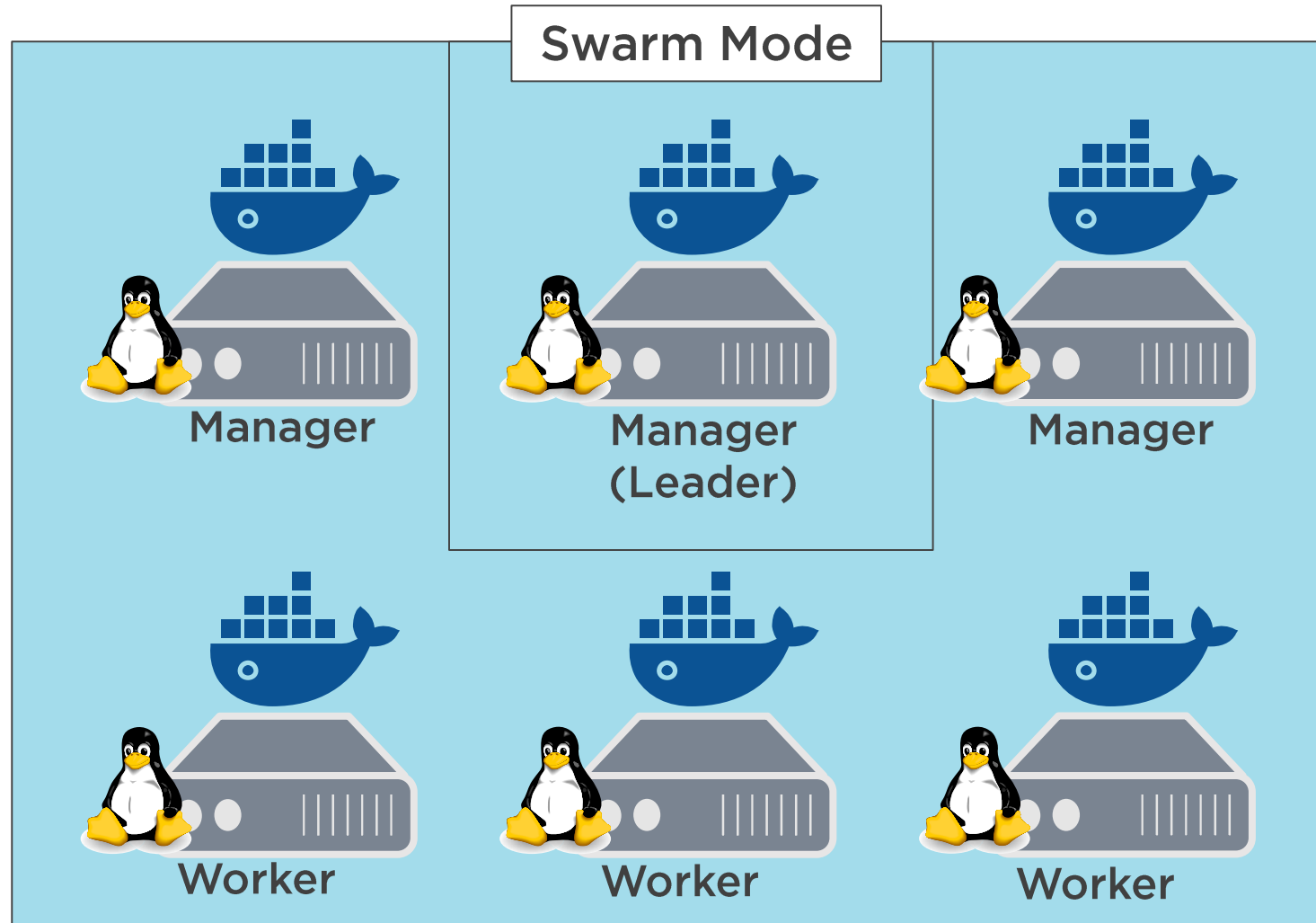
Coming up next....

Stacks and DABs



Recap



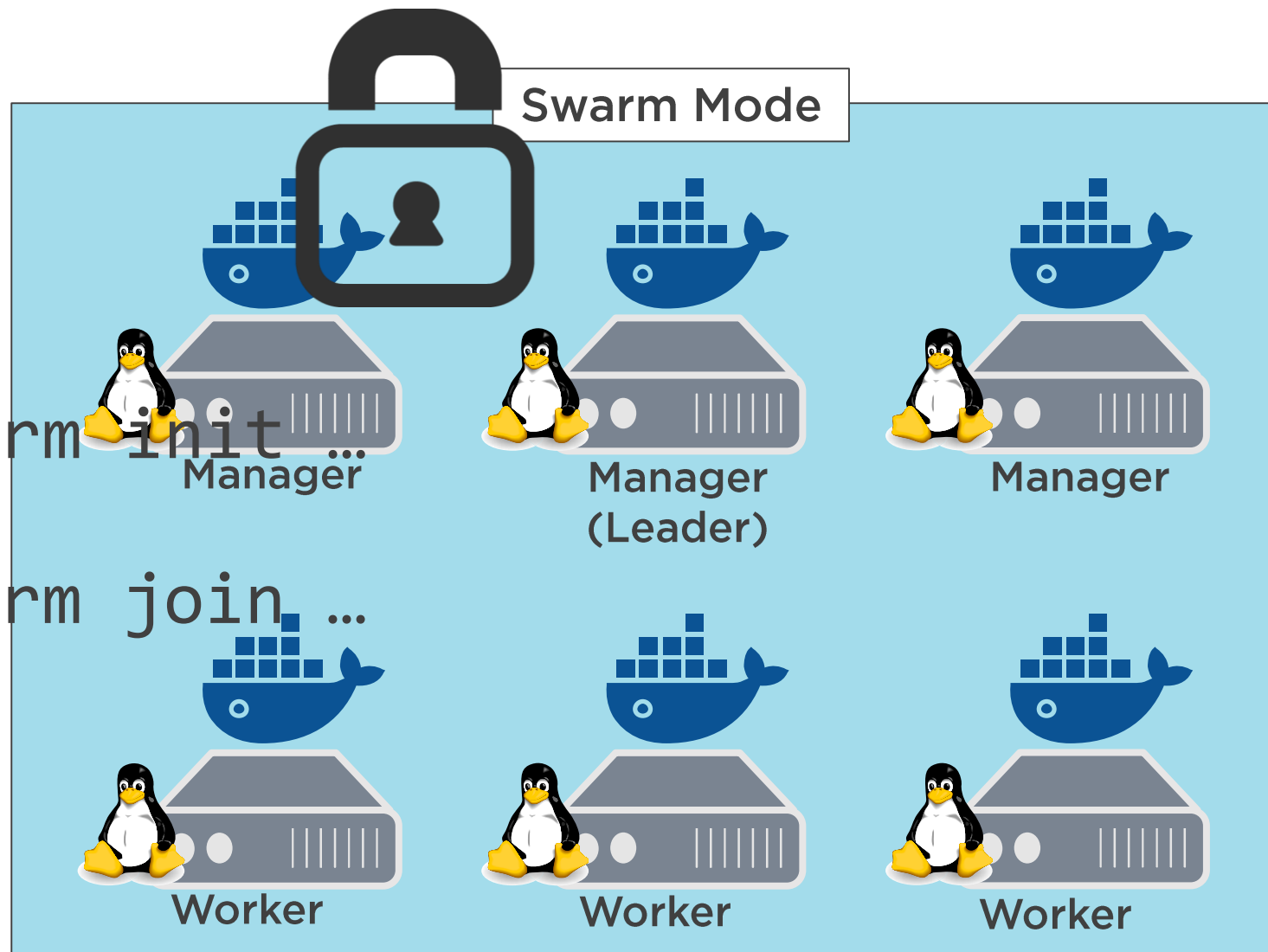


⚠ Everything we did in this module required Docker 1.12 or later



```
$ docker swarm init
```

```
$ docker swarm join ...
```

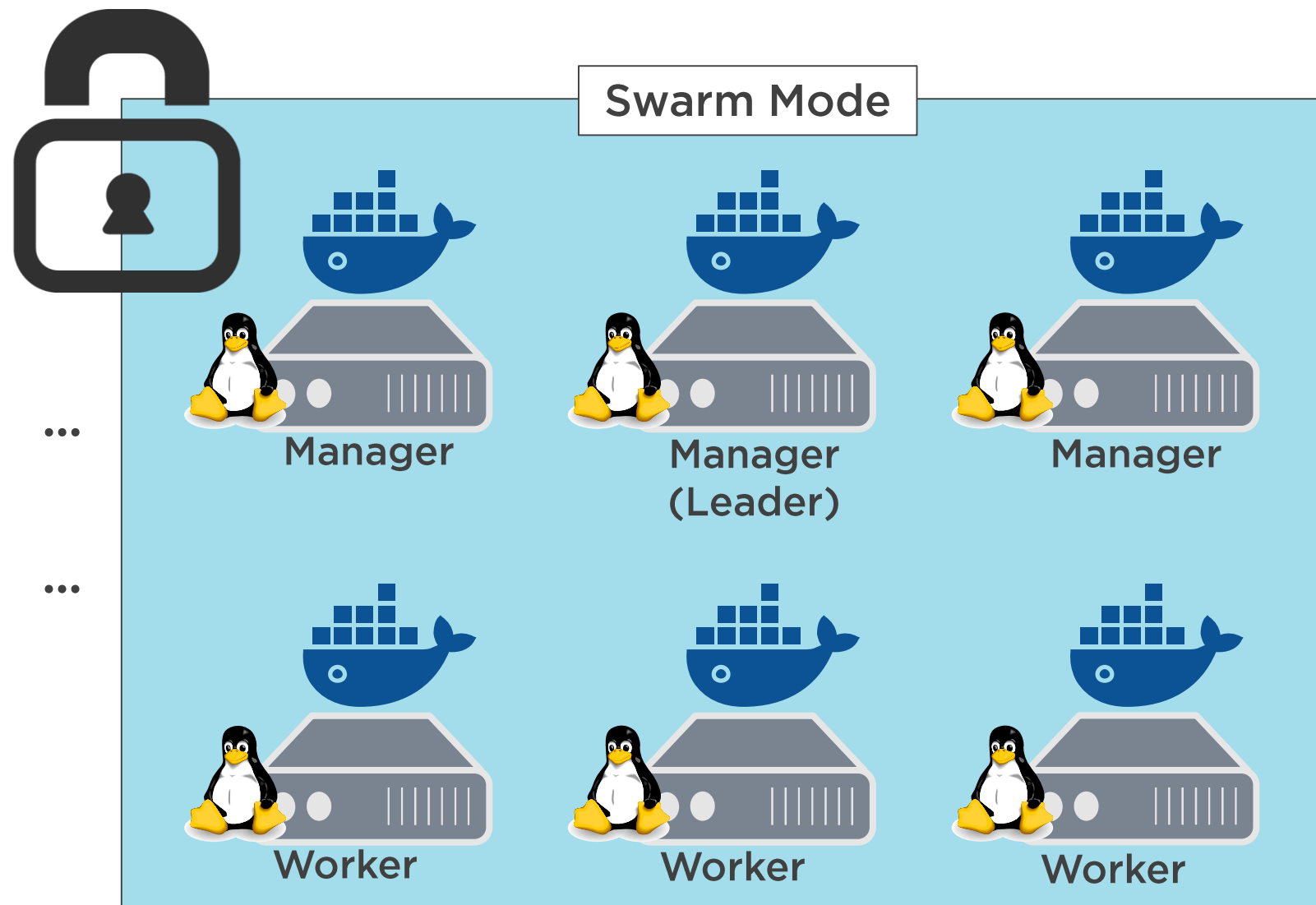


⚠ Everything we did in this module required Docker 1.12 or later



```
$ docker swarm init ...
```

```
$ docker swarm join ...
```

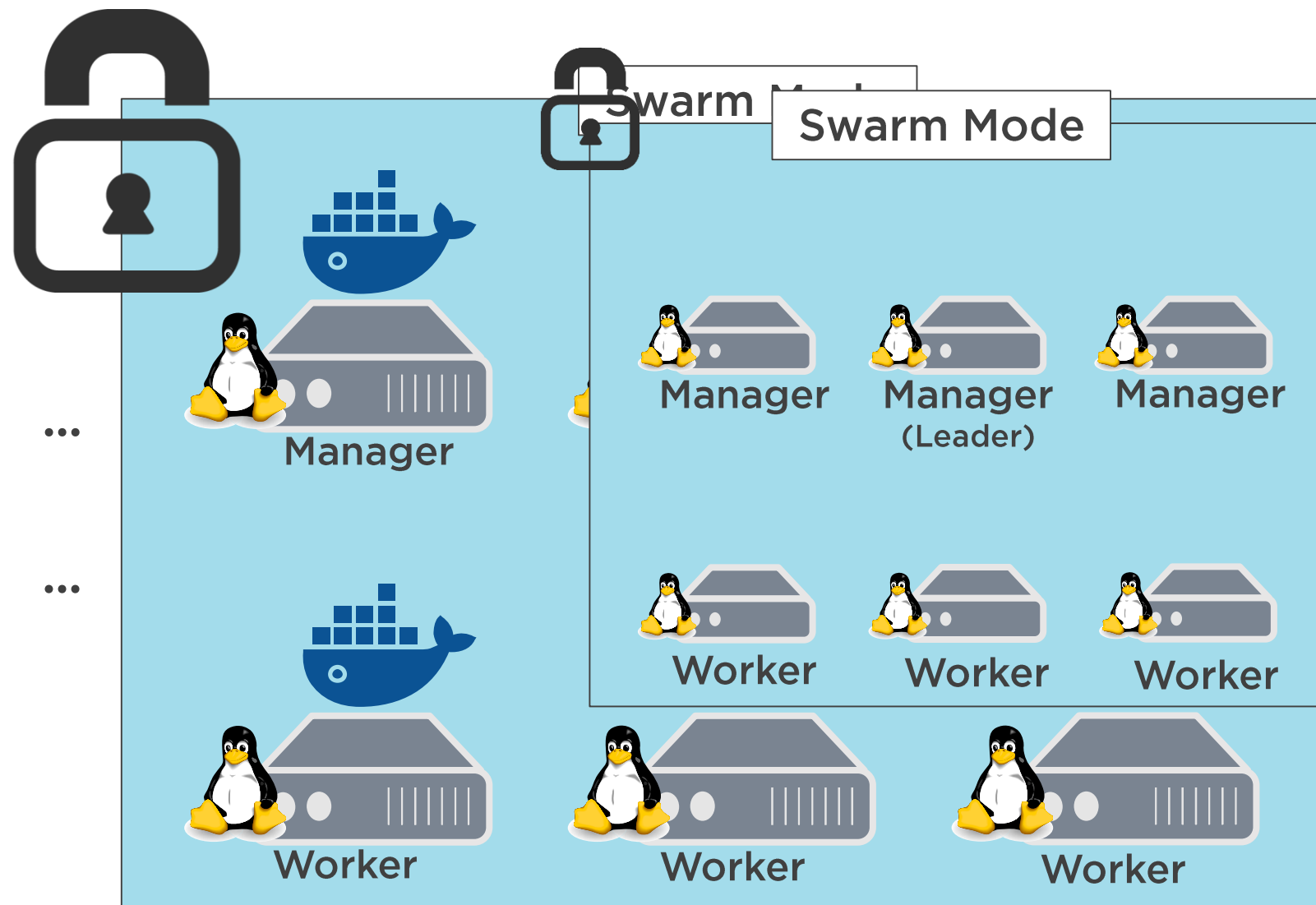


⚠ Everything we did in this module required Docker 1.12 or later




```
$ docker swarm init ...
```

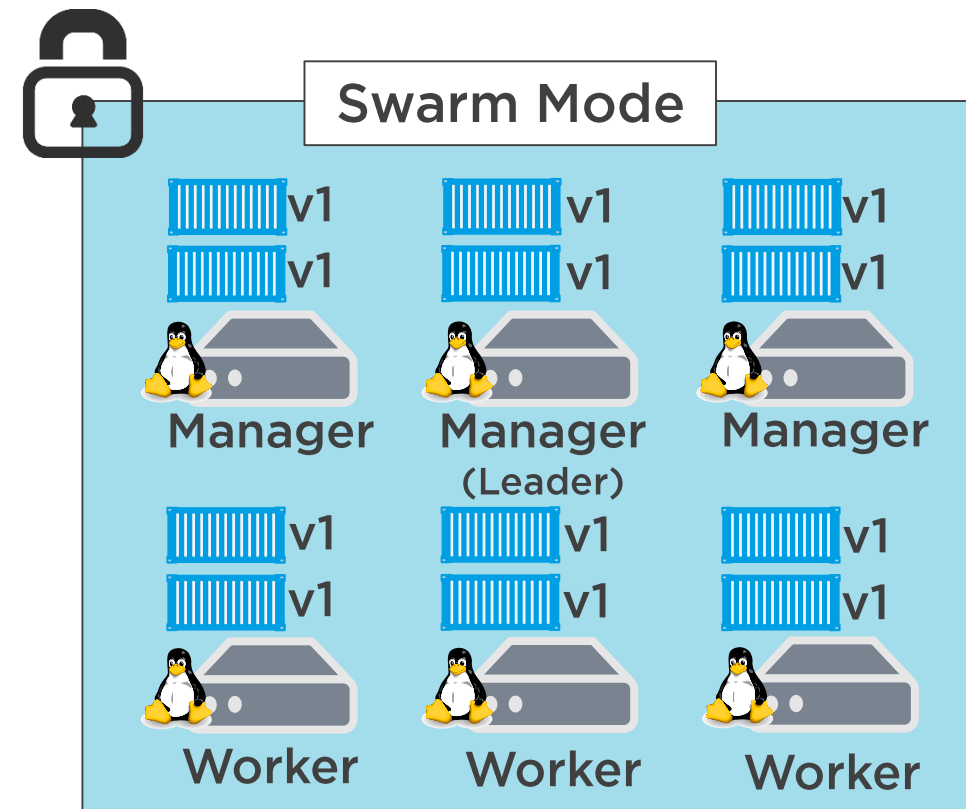
```
$ docker swarm join ...
```



⚠ Everything we did in this module required Docker 1.12 or later



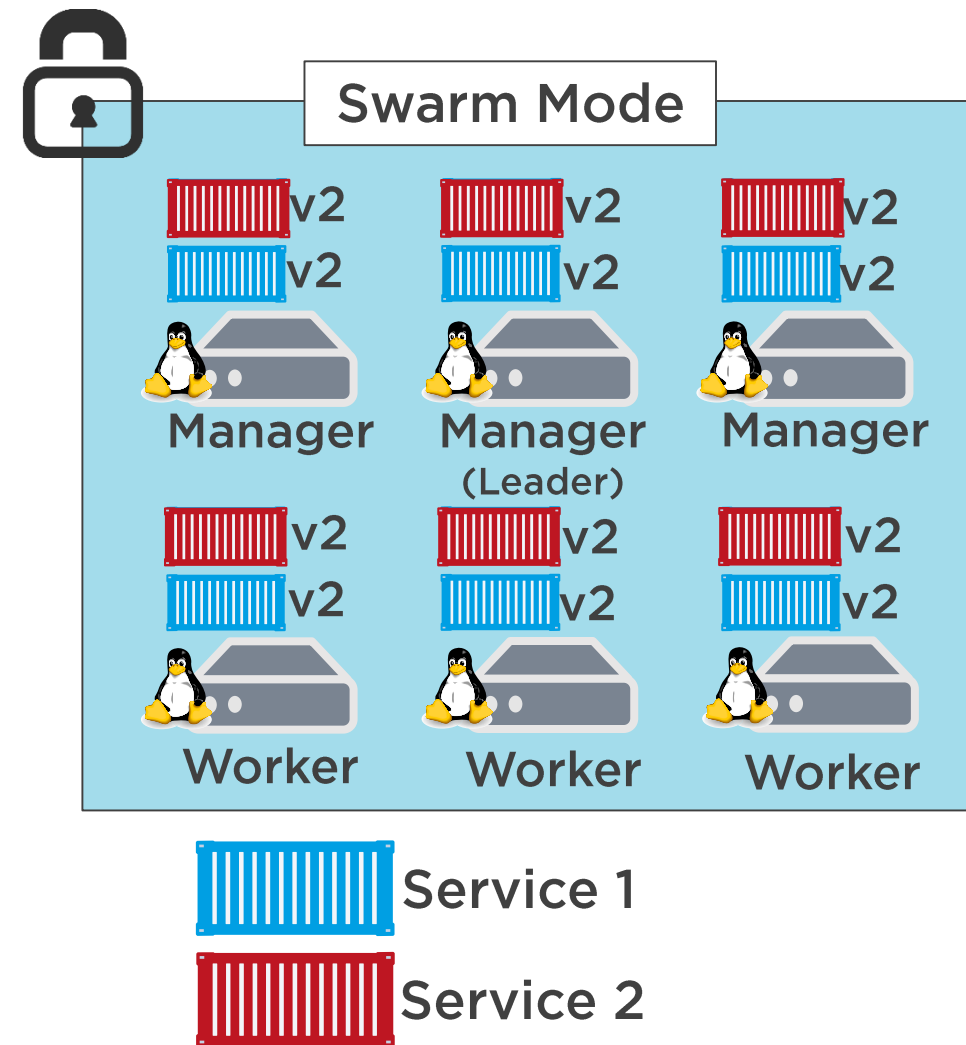
```
$ docker swarm init ...  
$ docker swarm join ...  
$ docker service create ...  
$ docker service scale ...  
$ docker service update ...
```



 Everything we did in this module required Docker 1.12 or later



```
$ docker swarm init ...  
$ docker swarm join ...  
$ docker service create ...  
$ docker service scale ...  
$ docker service update ...  
$ docker stack deploy ...
```



 Everything we did in this module required Docker 1.12 or later



Coming up next

What to do next...

