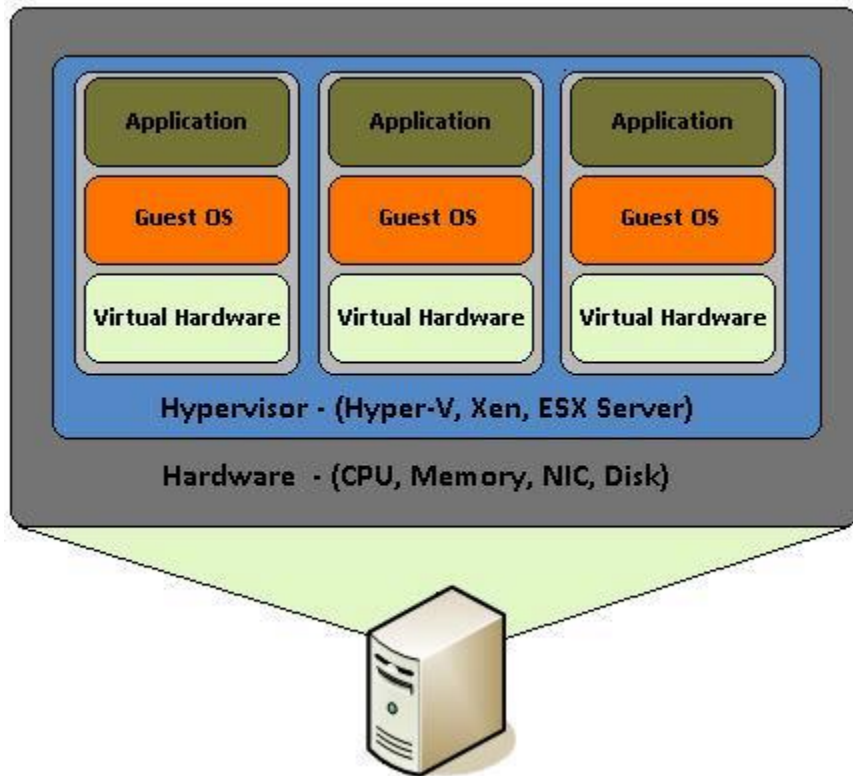
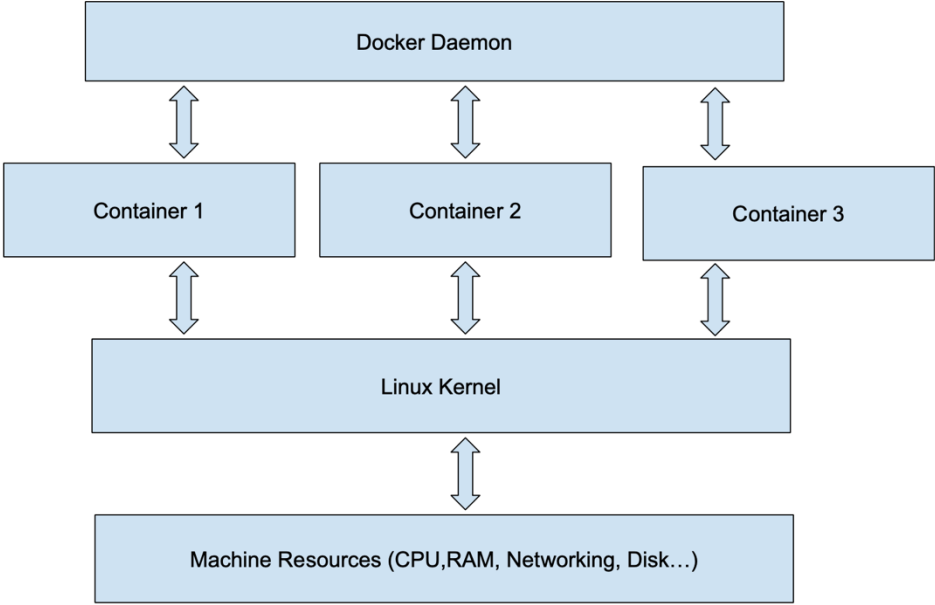


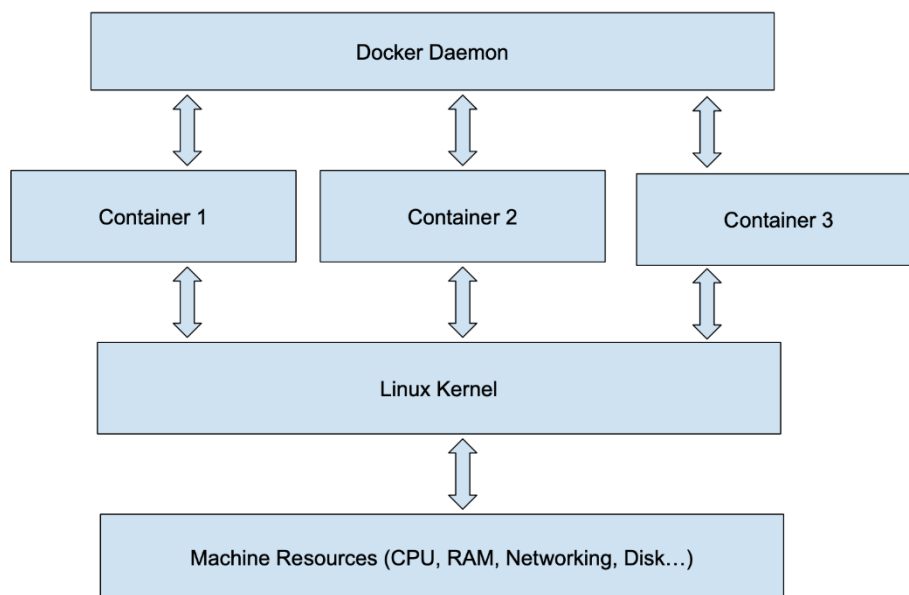
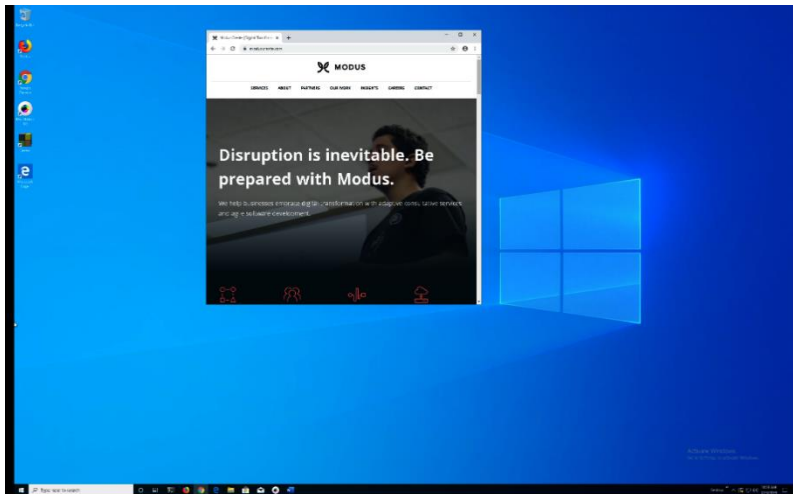
## Chapter 1: Introduction to Docker







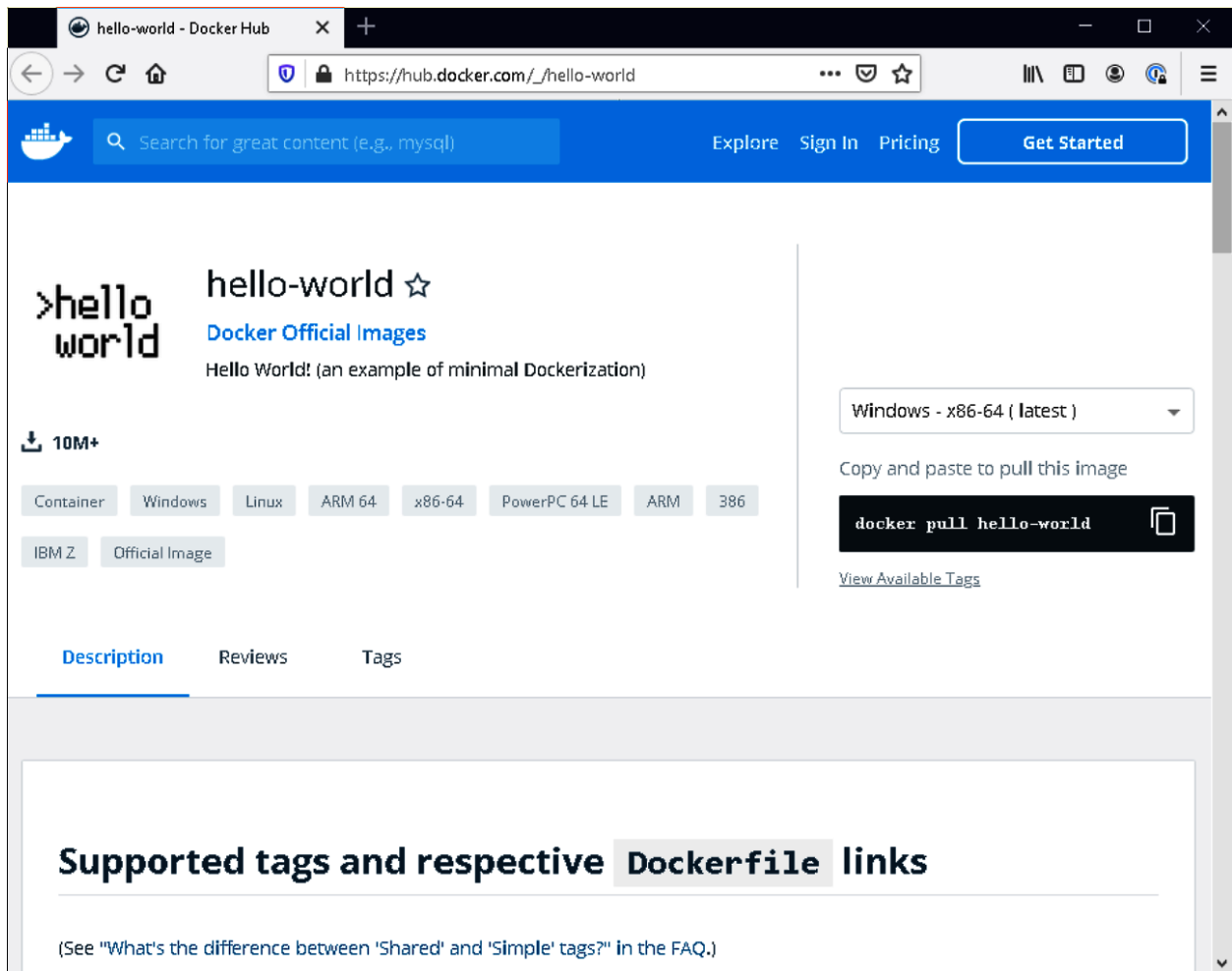
## Chapter 2: Using VirtualBox and Docker Containers for Development



```
localhost:8080/app/index.js x  
localhost:8080/app/index.js 50%  
Hello, world  
Counterx: 1
```

```
Hello, world  
Counterx: 5
```

## Chapter 3: Sharing Containers Using Docker Hub



The screenshot shows the Docker Hub interface for the 'hello-world' image. The browser address bar shows the URL `https://hub.docker.com/_/hello-world`. The page header includes a search bar, navigation links for 'Explore', 'Sign In', 'Pricing', and a 'Get Started' button. The main content area features the 'hello-world' logo, the text 'hello-world ☆', and 'Docker Official Images'. Below this, it says 'Hello World! (an example of minimal Dockerization)'. A download count of '10M+' is shown. A horizontal list of architecture tags includes 'Container', 'Windows', 'Linux', 'ARM 64', 'x86-64', 'PowerPC 64 LE', 'ARM', '386', 'IBM Z', and 'Official Image'. On the right, a dropdown menu is set to 'Windows - x86-64 ( latest )', and a code block contains the command `docker pull hello-world`. Below the code block is a link for 'View Available Tags'. At the bottom, there are tabs for 'Description', 'Reviews', and 'Tags'. The 'Description' tab is active, showing the heading 'Supported tags and respective Dockerfile links' and a note: '(See "What's the difference between 'Shared' and 'Simple' tags?" in the FAQ.)'

mongo - Docker Hub

https://hub.docker.com/\_/mongo

(See "What's the difference between 'Shared' and 'Simple' tags?" in the FAQ.)

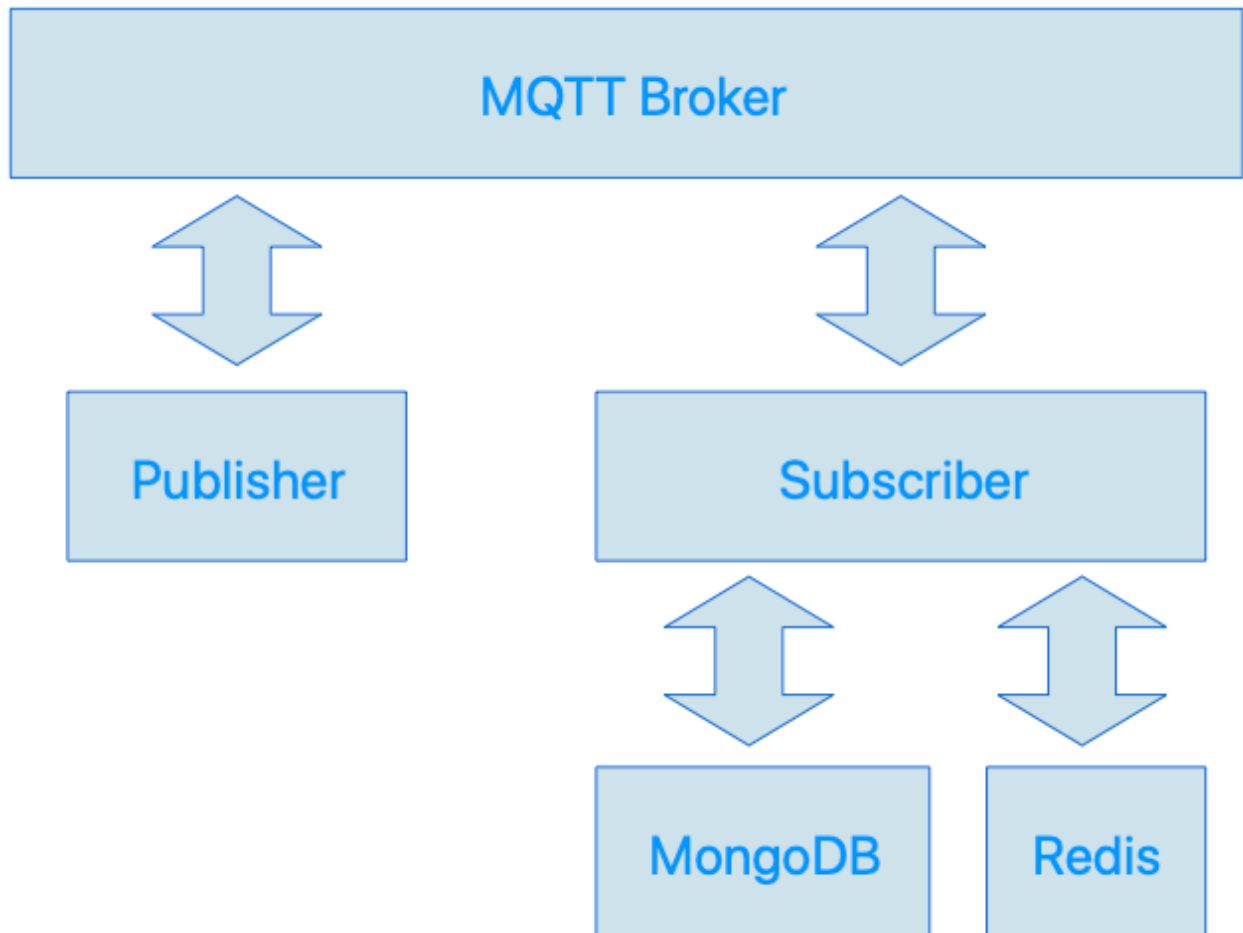
## Simple Tags

- 3.4.23-xenial , 3.4-xenial
- 3.4.23-windowsservercore-ltsc2016 , 3.4-windowsservercore-ltsc2016
- 3.6.16-xenial , 3.6-xenial , 3-xenial
- 3.6.16-windowsservercore-ltsc2016 , 3.6-windowsservercore-ltsc2016 , 3-windowsservercore-ltsc2016
- 4.0.13-xenial , 4.0-xenial
- 4.0.13-windowsservercore-ltsc2016 , 4.0-windowsservercore-ltsc2016
- 4.0.13-windowsservercore-1809 , 4.0-windowsservercore-1809
- 4.2.2-bionic , 4.2-bionic , 4-bionic , bionic
- 4.2.2-windowsservercore-ltsc2016 , 4.2-windowsservercore-ltsc2016 , 4-windowsservercore-ltsc2016 ,  
windowsservercore-ltsc2016
- 4.2.2-windowsservercore-1809 , 4.2-windowsservercore-1809 , 4-windowsservercore-1809 , windowsservercore-1809

## Shared Tags

- 3.4.23 , 3.4 :
  - 3.4.23-xenial

## Publisher/Subscriber Architecture



```

% mqtt publish -t "publisher" -m "mongo-add foo"
% mqtt publish -t "publisher" -m "mongo-list foo"
% mqtt publish -t "publisher" -m "mongo-count foo"
%

2020-03-06T17:45:03.741Z publisher
send MQTT messages with topic publisher and any message you like
2020-03-06T18:08:08.962Z mqtt-traffic <<< MESSAGE topic publisher message mongo-add
foo
2020-03-06T18:08:08.962Z mqtt-traffic >>> topic subscriber/mongo-add message foo
2020-03-06T18:08:08.972Z mqtt-traffic <<< MESSAGE topic publisher/mongo-add message
{"result":{"ok":1,"n":1},"ops":[{"text":"foo", "_id":"5e62918872880001cfd0be"}],"in
sertedCount":1,"insertedIds":{"0":"5e62918872880001cfd0be"}}
2020-03-06T18:08:08.973Z publisher result mongo-add = {
  result: { ok: 1, n: 1 },
  ops: [ { text: 'foo', _id: '5e62918872880001cfd0be' } ],
  insertedCount: 1,
  insertedIds: { '0': '5e62918872880001cfd0be' }
}
2020-03-06T18:08:24.438Z mqtt-traffic <<< MESSAGE topic publisher message mongo-list
foo
2020-03-06T18:08:24.438Z mqtt-traffic >>> topic subscriber/mongo-list message foo
2020-03-06T18:08:24.443Z mqtt-traffic <<< MESSAGE topic publisher/mongo-list message
[{"_id":"5e289168c79039918a8b47db","text":"foo"},{"_id":"5e62918872880001cfd0be",
"text":"foo"}]
2020-03-06T18:08:24.443Z publisher result mongo-list = [
  { _id: '5e289168c79039918a8b47db', text: 'foo' },
  { _id: '5e62918872880001cfd0be', text: 'foo' }
]
2020-03-06T18:08:35.240Z mqtt-traffic <<< MESSAGE topic publisher message mongo-coun
t foo
2020-03-06T18:08:35.243Z mqtt-traffic >>> topic subscriber/mongo-count message foo
2020-03-06T18:08:35.243Z publisher result mongo-count = 2

yarn run v1.16.0
$ node ./index.js
2020-03-06T18:07:15.252Z subscriber connecting to MongoDB mongodb://192.168.0.21:27017
(node:28) DeprecationWarning: current Server Discovery and Monitoring engine is depreca
ted, and will be removed in a future version. To use the new Server Discover and Monito
ring engine, pass option { useUnifiedTopology: true } to the MongoClient constructor.
2020-03-06T18:07:15.265Z subscriber Connected to mongodb server mongodb://192.168.0.21:
27017
2020-03-06T18:07:15.266Z subscriber
2020-03-06T18:07:15.266Z subscriber connecting to MQTT broker mqtt://192.168.0.21 1883
2020-03-06T18:07:15.293Z subscriber connected to mqtt://192.168.0.21 port 1883
2020-03-06T18:07:15.293Z subscriber
2020-03-06T18:07:15.293Z subscriber WAITING FOR MESSAGES FROM PUBLISHER
2020-03-06T18:08:08.963Z subscriber <<< topic subscriber/mongo-add message foo
2020-03-06T18:08:08.964Z subscriber --- mongodb add foo
2020-03-06T18:08:08.970Z subscriber >>> topic: publisher/mongo-add message: {
  result: { ok: 1, n: 1 },
  ops: [ { text: 'foo', _id: '5e62918872880001cfd0be' } ],
  insertedCount: 1,
  insertedIds: { '0': '5e62918872880001cfd0be' }
}
2020-03-06T18:08:24.439Z subscriber <<< topic subscriber/mongo-list message foo
2020-03-06T18:08:24.443Z subscriber >>> topic: publisher/mongo-list message: [
  { _id: '5e289168c79039918a8b47db', text: 'foo' },
  { _id: '5e62918872880001cfd0be', text: 'foo' }
]
2020-03-06T18:08:35.241Z subscriber <<< topic subscriber/mongo-count message foo
2020-03-06T18:08:35.241Z subscriber --- mongodb count foo
2020-03-06T18:08:35.242Z subscriber >>> topic: publisher/mongo-count message: 2

```



# Publisher

MongoDB

Redis

VALUE

List

Count

Add

Remove

Flush

# Result

## Chapter 5: Alternatives for Deploying and Running Containers in Production



# Chapter 7: Continuous Deployment with Jenkins

Getting Started

## Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log ([not sure where to find it?](#)) and this file on the server:

```
/var/lib/jenkins/secrets/initialAdminPassword
```

Please copy the password from either location and paste it below.

**Administrator password**



Continue



# Customize Jenkins

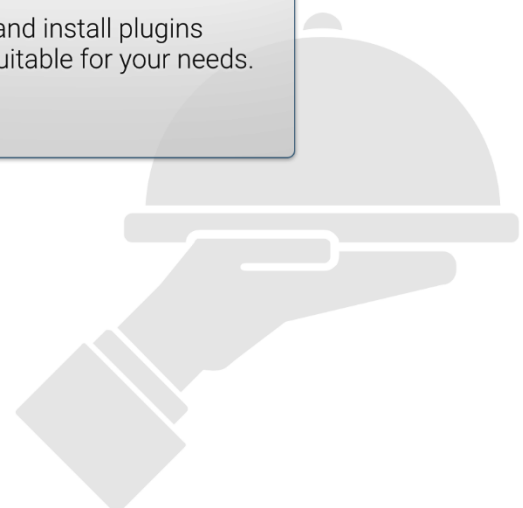
Plugins extend Jenkins with additional features to support many different needs.

## Install suggested plugins

Install plugins the Jenkins community finds most useful.

## Select plugins to install

Select and install plugins most suitable for your needs.



### Enter an item name

Hello Docker

*» Required field*



#### Freestyle project

This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.



#### Pipeline

Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.



#### Multi-configuration project

Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.



#### Folder

Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.



#### GitHub Organization

Scans a GitHub organization (or user account) for all repositories matching some defined markers.



#### GitHub Organization

Scans a GitHub organization (or user account) for all repositories matching some defined markers.



#### Multibranch Pipeline

Creates a set of Pipeline projects according to detected branches in one SCM repository.

If you want to create a new item from other existing, you can use this option:



Copy from

Type to autocomplete

OK

- [Back to Project](#)
- [Status](#)
- [Changes](#)
- Console Output**
  - [View as plain text](#)
- [Edit Build Information](#)
- [Delete build '#1'](#)
- [Docker Fingerprints](#)
- [Restart from Stage](#)
- [Replay](#)
- [Pipeline Steps](#)
- [Workspaces](#)
- [Next Build](#)

## Console Output

```

Started by user Admin
Running in Durability level: MAX_SURVIVABILITY
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in /var/lib/jenkins/workspace/Hello Docker
[Pipeline] {
[Pipeline] isUnix
[Pipeline] sh
+ docker inspect -f . alpine:20191114
.
[Pipeline] withDockerContainer
Jenkins does not seem to be running inside a container
$ docker run -t -d -u 997:993 -w "/var/lib/jenkins/workspace/Hello Docker" -v
"/var/lib/jenkins/workspace/Hello Docker:/var/lib/jenkins/workspace/Hello
Docker:rw,z" -v "/var/lib/jenkins/workspace/Hello Docker@tmp:/var/lib/jenkins
/workspace/Hello Docker@tmp:rw,z" -e ***** -e ***** -e ***** -e
***** -e ***** -e ***** -e ***** -e ***** -e ***** -e *****
***** -e ***** -e ***** -e ***** -e ***** -e ***** -e ***** -e
***** -e ***** -e ***** -e ***** -e ***** -e ***** -e *****
alpine:20191114 cat
$ docker top 240902358b3b5be67d24e741e5724fc4fe70da9c06d1fc7bf5ee5d95b32bd55f
-eo pid,comm
[Pipeline] {
[Pipeline] stage
[Pipeline] { (build)
[Pipeline] sh
+ echo 'Hello, World (Docker for Developers Chapter 7)'
Hello, World (Docker for Developers Chapter 7)
[Pipeline] }
[Pipeline] // stage
[Pipeline] }
$ docker stop --time=1
240902358b3b5be67d24e741e5724fc4fe70da9c06d1fc7bf5ee5d95b32bd55f
$ docker rm -f 240902358b3b5be67d24e741e5724fc4fe70da9c06d1fc7bf5ee5d95b32bd55f
[Pipeline] // withDockerContainer
[Pipeline] }
[Pipeline] // node
[Pipeline] End of Pipeline
Finished: SUCCESS
    
```



[Back to credential domains](#)

[Add Credentials](#)

Kind

Scope

ID

Description

Username

Private Key  Enter directly

Key

```

zVsyyfVUcQ1GqVkJLpdsY2vfjeldS8hU2RGc/lhriePyWwgQAAAEAwai10/Vo42JUMY/i
JJdBQOEnnYcEf1UZ1yomgHkcLet7hg2VileJsyaYEALvINhc4j9RrcjsjH2b3F/YzLcrwd
g1bbOPLe6TFOrSOt9WYt1fza01zPQVp2Y6tTUVxmiFGAwvdBm0ETPfsJVTQFiSJT2S+7H
1Ibni2DOHvZ86DEAAAAUcmJ1bGxpbmdAQ29kZkxgubG9jYWwBAgMEBQYH
-----END OPENSsh PRIVATE KEY-----

```

Passphrase

### Enter an item name

SSH to Production

» Required field



#### Freestyle project

This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.



#### Pipeline

Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.



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Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.



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Creates a set of Pipeline projects according to detected branches in one SCM repository.

If you want to create a new item from other existing, you can use this option:



Copy from

Type to autocomplete

OK



Resource root URL



Without a resource root URL, resources will be served from the main domain with Content-Security-Policy set.

**Global properties**

Disable deferred wipeout on this node



Environment variables

List of variables

Name

Value

Delete

Name



Value

Delete

Add

Tool Locations

**Pipeline Speed/Durability Settings**

Save

Apply

- Up
- Status
- Changes
- Build Now
- View Configuration
- Full Stage View
- GitHub
- Pipeline Syntax

**Build History** trend ▾

x

- #3 Apr 6, 2020 2:32 AM
- #2 Apr 6, 2020 2:05 AM
- #1 Apr 5, 2020 8:20 PM

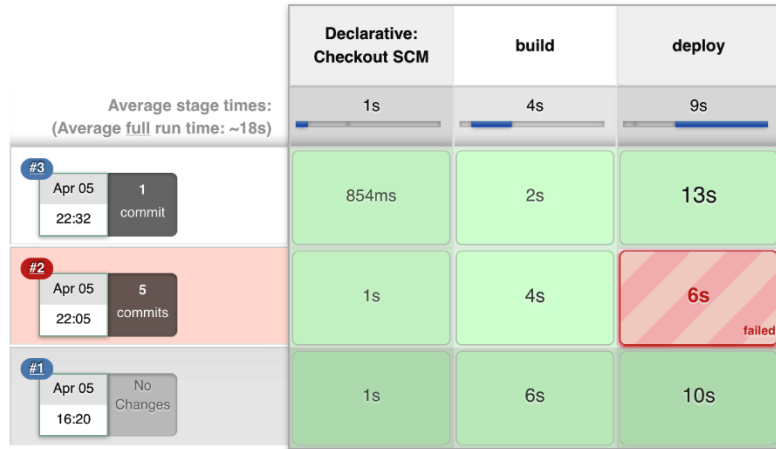
Atom feed for all
 Atom feed for failures

## Branch master

Full project name: Packt-Publishing/Docker-for-Developers/master



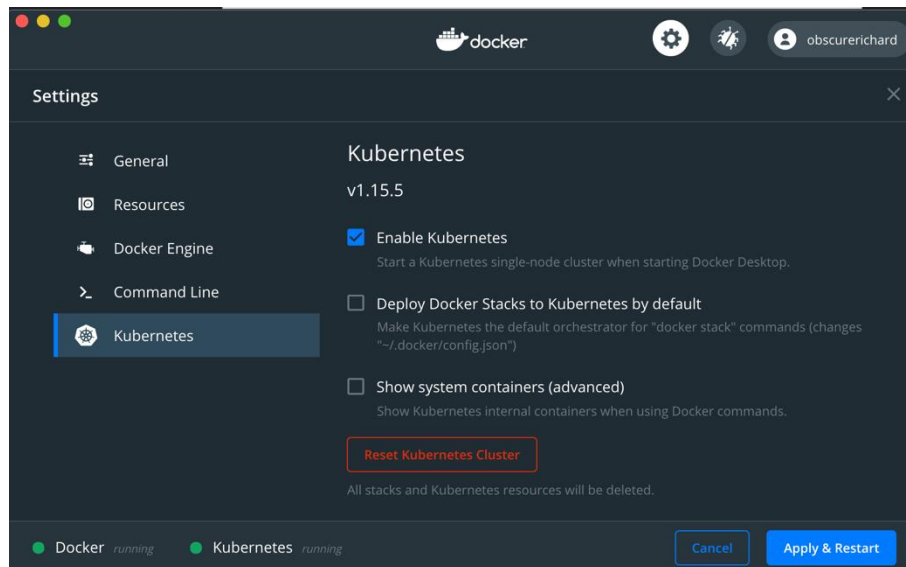
### Stage View



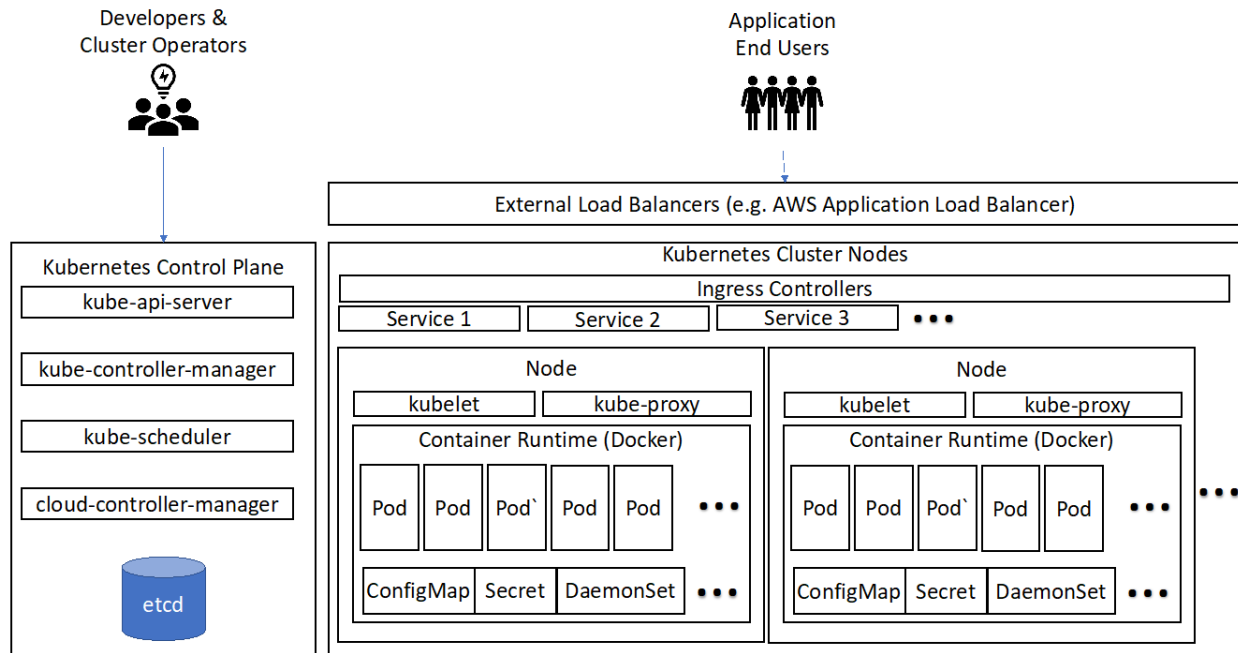
### Permalinks

- [Last build \(#3\), 3.7 sec ago](#)
- [Last stable build \(#1\), 6 hr 11 min ago](#)

## Chapter 8: Deploying Docker Apps to Kubernetes



```
$ kubectl get pods -A
NAMESPACE   NAME                                     READY   STATUS    RESTARTS   AGE
docker      compose-78f95d4f8c-6q47g              1/1     Running   0           13d
docker      compose-api-6ffb89dc58-xmc7g          1/1     Running   0           13d
kube-system  coredns-5644d7b6d9-trt7s             1/1     Running   0           13d
kube-system  coredns-5644d7b6d9-x7z5f             1/1     Running   0           13d
kube-system  etcd-docker-desktop                  1/1     Running   0           13d
kube-system  kube-apiserver-docker-desktop         1/1     Running   0           13d
kube-system  kube-controller-manager-docker-desktop 1/1     Running   0           13d
kube-system  kube-proxy-9mq8k                     1/1     Running   0           13d
kube-system  kube-scheduler-docker-desktop         1/1     Running   0           13d
kube-system  storage-provisioner                   1/1     Running   1           13d
kube-system  vpnkit-controller                     1/1     Running   0           13d
```



```
$ kubectl get secrets
```

NAME	TYPE	DATA	AGE
default-token-sm7kn	kubernetes.io/service-account-token	3	15d
nginx-ingress-backend-token-slkjf	kubernetes.io/service-account-token	3	3h43m
nginx-ingress-token-v5jjp	kubernetes.io/service-account-token	3	3h43m
sample-secret	Opaque	1	15m
secex	Opaque	1	12m
sh.helm.release.v1.nginx-ingress.v1	helm.sh/release.v1	1	3h43m
sh.helm.release.v1.shipitclicker.v1	helm.sh/release.v1	1	3h30m
sh.helm.release.v1.shipitclicker.v2	helm.sh/release.v1	1	3h1m
sh.helm.release.v1.shipitclicker.v3	helm.sh/release.v1	1	112m
sh.helm.release.v1.shipitclicker.v4	helm.sh/release.v1	1	104m
sh.helm.release.v1.shipitclicker.v5	helm.sh/release.v1	1	102m
shipitclicker-secrets	Opaque	1	102m
shipitclicker-token-lc9qv	kubernetes.io/service-account-token	3	3h30m

```
$ kubectl describe secrets/shipitclicker-secrets
```

```
Name:          shipitclicker-secrets
Namespace:     default
Labels:        <none>
Annotations:   <none>
```

```
Type: Opaque
```

```
Data
```

```
====
```

```
SESSION_SECRET: 12 bytes
```

aws Services Resource Groups EC2 IAM CloudFormation CloudWatch

Identity and Access Management (IAM)

Users > Administrator

## Summary

**User ARN** arn:aws:iam::1[REDACTED]:user/Administrator

**Path** /

**Creation time** 2020-04-27 00:05 EDT

aws Services Resource Groups EC2 IAM IAM CloudFormation CloudWatch

Identity and Access Management (IAM)

Users > Administrator

## Summary

[Delete user](#) [?](#)

**User ARN** arn:aws:iam::[REDACTED]:user/Administrator

**Path** /

**Creation time** 2020-04-27 00:05 EDT

Permissions Groups (1) Tags **Security credentials** Access Advisor

### Sign-in credentials

**Summary**

- Console sign-in link: [https://\[REDACTED\].signin.aws.amazon.com/console](https://[REDACTED].signin.aws.amazon.com/console)
- MFA is required when signing in. [Learn more](#)

**Console password** Enabled (last signed in 9 days) | [Manage](#)

**Assigned MFA device** arn:aws:iam::[REDACTED]:mfa/Administrator (Virtual) | [Manage](#)

**Signing certificates** None

### Access keys

Use access keys to make secure REST or HTTP Query protocol requests to AWS service APIs. For your protection, you should never share your secret keys with anyone. As a best practice, we recommend frequent key rotation. [Learn more](#)

[Create access key](#)

Access key ID	Created	Last used	Status
---------------	---------	-----------	--------

```
$ aws sts get-caller-identity
{
  "UserId": "AIDASDBKOBZBUC3RCCP42",
  "Account": "143970405955",
  "Arn": "arn:aws:iam::143970405955:user/Administrator"
}
```

aws Services Resource Groups EC2 DockerBook - Admin Ohio Support

New EC2 Experience  
Tell us what you think

EC2 Dashboard New

Events New

Welcome to the new EC2 console!  
We're redesigning the EC2 console to make it easier to use. We encourage you to try the new console screens periodically. We encourage you to try the new console screens periodically. We encourage you to try the new console screens periodically.

US East (N. Virginia) us-east-1

US East (Ohio) us-east-2

US West (N. California) us-west-1

aws Services Resource Groups EC2 DockerBook - Admin Ohio Support



CloudFormation > Stacks > Create stack

Step 1  
Specify template

Step 2  
Specify stack details

Step 3  
Configure stack options

Step 4  
Review

## Create stack

### Prerequisite - Prepare template

#### Prepare template

Every stack is based on a template. A template is a JSON or YAML file that contains configuration information about the AWS resources you want to include in the stack.

Template is ready

Use a sample template

Create template in Designer

### Specify template

A template is a JSON or YAML file that describes your stack's resources and properties.

#### Template source

Selecting a template generates an Amazon S3 URL where it will be stored.

Amazon S3 URL

Upload a template file

#### Amazon S3 URL

Amazon S3 template URL

S3 URL: <https://s3.amazonaws.com/aws-quickstart/quickstart-amazon-eks/templates/amazon-eks-master.template.yaml>

[View in Designer](#)

Cancel

Next



Stacks (11)

Refresh Delete Update Stack actions Create stack

Filter by stack name Active View nested

Stack name	Status	Created time	Description
<input type="radio"/> Amazon-EKS-EKSStack-16HIS1XPVPX... <small>NESTED</small>	<span>✔ CREATE_COMPLETE</span>	2020-05-02 17:26:55 UTC-0400	Deploys an EFS file system
<input type="radio"/> Amazon-EKS-EKSStack-16HIS1XPVPX... <small>NESTED</small>	<span>✔ CREATE_COMPLETE</span>	2020-05-02 17:25:17 UTC-0400	Deploys EKS nodes into an
<input type="radio"/> Amazon-EKS-EKSStack-16HIS1XPVPX... <small>NESTED</small>	<span>✔ CREATE_COMPLETE</span>	2020-05-02 17:25:17 UTC-0400	LinuxBastion+VPC Nov,19,2
<input type="radio"/> Amazon-EKS-EKSStack-16HIS1XPVPX... <small>NESTED</small>	<span>✔ CREATE_COMPLETE</span>	2020-05-02 17:25:17 UTC-0400	Deploys the grafana helm c
<input type="radio"/> Amazon-EKS-EKSStack-16HIS1XPVPX... <small>NESTED</small>	<span>✔ CREATE_COMPLETE</span>	2020-05-02 17:25:17 UTC-0400	Deploys the prometheus he
<input type="radio"/> Amazon-EKS-EKSStack-16HIS1XPVPX... <small>NESTED</small>	<span>✔ CREATE_COMPLETE</span>	2020-05-02 17:07:08 UTC-0400	Deploys the EKS control pla
<input type="radio"/> Amazon-EKS-EKSStack-16HIS1XPVPX... <small>NESTED</small>	<span>✔ CREATE_COMPLETE</span>	2020-05-02 17:04:02 UTC-0400	Deploys Lambda functions
<input type="radio"/> Amazon-EKS-EKSStack-16HIS1XPVPX... <small>NESTED</small>	<span>✔ CREATE_COMPLETE</span>	2020-05-02 17:01:21 UTC-0400	Deploys IAM roles and polic
<input type="radio"/> Amazon-EKS-EKSStack-16HIS1XPVPX15 <small>NESTED</small>	<span>✔ CREATE_COMPLETE</span>	2020-05-02 17:00:52 UTC-0400	Deploys an EKS cluster into
<input type="radio"/> Amazon-EKS-VPCStack-6PBRTQZD8W... <small>NESTED</small>	<span>✔ CREATE_COMPLETE</span>	2020-05-02 16:57:17 UTC-0400	This template creates a Mu
<input type="radio"/> Amazon-EKS	<span>✔ CREATE_COMPLETE</span>	2020-05-02 16:57:11 UTC-0400	Deploys an EKS cluster in a

# Create repository

## Repository access and tags

Repository name

143970405955.dkr.ecr.us-east-2.amazonaws.com/

dockerfordevelopers/shipitclicker

A namespace can be included with your repository name (e.g. namespace/repo-name).

### Tag immutability

Enable tag immutability to prevent image tags from being overwritten by subsequent image pushes using the same tag. Disable tag immutability to allow image tags to be overwritten.

Disabled

## Image scan settings

### Scan on push

Enable scan on push to have each image automatically scanned after being pushed to a repository. If disabled, each image scan must be manually started to get scan results.

Disabled

Cancel

Create repository

## Repositories (1)

View push commands Delete Edit Create repository

Find repositories

Repository name	URI	Created at	Tag immutability	Scan on push
<input type="radio"/> dockerfordevelopers/shipitclicker	143970405955.dkr.ecr.us-east-2.amazonaws.com/dockerfordevelopers/shipitclicker	05/21/20, 11:22:38 PM	Disabled	Disabled



```
$ docker push $REPO/$IMAGE:latest
The push refers to repository [143970405955.dkr.ecr.us-east-2.amazonaws.com/dockerfordevelopers/shipitclicker]
91886c2bec58: Pushed
803db8939aa3: Pushed
0e0a18348ee5: Pushed
62e05e3bb22a: Pushed
1348a1f0cfff: Pushed
f3acd9559398: Pushed
784ec316539a: Pushed
405463c769df: Pushed
ffac27138e4b: Pushed
da64c1c32e07: Pushed
latest: digest: sha256:c66f057ae0794e67705474fa480eaf653d0f8abe1eb6bd13354a23a4a1eefd89 size: 2409
```

# Chapter 9: Cloud-Native Continuous Deployment Using Spinnaker

aws Services Resource Groups EC2 IAM Administrator @ docker-for-de... Ohio Support

## Request a certificate

Step 1: Add domain names  
Step 2: Select validation method  
Step 3: Add Tags  
Step 4: Review  
**Step 5: Validation**

**Request in progress**  
A certificate request with a status of Pending validation has been created. Further action is needed to complete the validation and approval of the certificate.

### Validation

Create a CNAME record in the DNS configuration for each of the domains listed below. You must complete this step before AWS Certificate Manager (ACM) can issue your certificate, but you can skip this step for now by clicking **Continue**. To return to this step later, open the certificate request in the ACM Console.

Domain	Validation status
*.eks.shipitclicker.com	Pending validation

Add the following CNAME record to the DNS configuration for your domain. The procedure for adding CNAME records depends on your DNS service Provider. [Learn more.](#)

Name	Type	Value
_da3f59bf75c6c9a805c42afe72c0591.eks.shipitclicker.com.	CNAME	_d707355be64409e38f41714e6c487186.auiqraehs.acm-validations.aws.

**Note:** Changing the DNS configuration allows ACM to issue certificates for this domain name for as long as the DNS record exists. You can revoke permission at any time by removing the record. [Learn more.](#)

**Create record in Route 53** Amazon Route 53 DNS Customers ACM can update your DNS configuration for you. [Learn more.](#)

eks.shipitclicker.com	Pending validation
-----------------------	--------------------

Back to Hosted Zones Create Record Set Import Zone File Delete Record Set Test Record Set

Record Set Name Any Type Aliases Only Weighted Only Displaying 1 to 12 out of 12 Record Sets

Name	Type	Value	Evaluate Target Health	Health Check ID	TTL
shipitclicker.com.	A	34.238.248.192	-	-	300
shipitclicker.com.	NS	ns-1372.awsdns-43.org. ns-645.awsdns-16.net. ns-378.awsdns-47.com. ns-1842.awsdns-38.co.uk.	-	-	172800
shipitclicker.com.	SOA	ns-1372.awsdns-43.org. awsdns-hostmaster.amazo-	-	-	900
_77f0a533efe881a4b6f47b07d1d2e8b.shipitclicker.com.	CNAME	_3b23a3575547e689e6fde9ee5f3c1ac3.auiqraehs.	-	-	300
_da3f59bf75c6c9a805c42afe72c0591.eks.shipitclicker.com.	CNAME	_d707355be64409e38f41714e6c487186.auiqraehs.	-	-	300
shipit-staging.eks.shipitclicker.com.	A	ALIAS dualstack.9bbd6f9c-default-shipitsta-1229-15	No	-	-
shipit-v5.eks.shipitclicker.com.	A	ALIAS dualstack.9bbd6f9c-default-shipitv5e-051a-1f	No	-	-
spinnaker-gate.eks.shipitclicker.com.	A	ALIAS dualstack.9bbd6f9c-spinnaker-springat-712f-1	No	-	-
spinnaker.eks.shipitclicker.com.	A	ALIAS dualstack.9bbd6f9c-spinnaker-springat-5f03-	No	-	-
jenkins.shipitclicker.com.	A	ALIAS dualstack.7c44f812814d07c7eedb6efef8d39-	No	-	-
_b610b607efad4860fe18b40ed9369d.jenkins.shipitclicker.com.	CNAME	_e84c0f0cd3f571d3752c8b0350a74b.vhzmjpdqf.x.	-	-	300
staging.shipitclicker.com.	A	18.213.192.151	-	-	300

**Create Record Set**

Name: shipit-v5.eks.shipitclicker.com.

Type: A - IPv4 address

Aliases:  Yes  No

Alias Target: i99361.us-east-2.elb.amazonaws.com.

Alias Hosted Zone ID: Z3AADJG9KTTL2

You can also type the domain name for the resource. Examples:

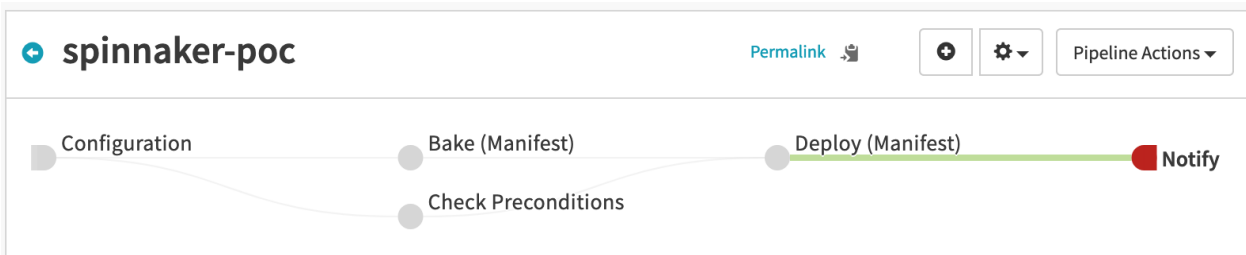
- CloudFront distribution domain name: d1111111abcde8f.cloudfront.net
- Elastic Beanstalk environment CNAME: example.elasticbeanstalk.com
- ELB load balancer DNS name: example-1.us-east-2.elb.amazonaws.com
- S3 website endpoint: s3-website-us-east-2.amazonaws.com
- Resource record set in this hosted zone: www.example.com
- VPC endpoint: example-us-east-2.vpc.amazonaws.com
- API Gateway custom regional API: d-abcde12345.execute-api.us-west-2.amazonaws.com
- Global Accelerator DNS name: a012345abc.awsglobalaccelerator.com

Routing Policy: Simple

Route 53 responds to queries based only on the values in this record. [Learn More](#)

Evaluate Target Health:  Yes  No

**Create**



```
NAME: spinnaker
LAST DEPLOYED: Sun May  3 14:33:10 2020
NAMESPACE: spinnaker
STATUS: deployed
REVISION: 1
TEST SUITE: None
NOTES:
1. You will need to create 2 port forwarding tunnels in order to access the Spinnaker UI:
  export DECK_POD=$(kubectl get pods --namespace spinnaker -l "cluster=spin-deck" -o jsonpath="{.items[0].metadata.name}")
  kubectl port-forward --namespace spinnaker $DECK_POD 9000

  export GATE_POD=$(kubectl get pods --namespace spinnaker -l "cluster=spin-gate" -o jsonpath="{.items[0].metadata.name}")
  kubectl port-forward --namespace spinnaker $GATE_POD 8084

2. Visit the Spinnaker UI by opening your browser to: http://127.0.0.1:9000

To customize your Spinnaker installation. Create a shell in your Halyard pod:

  kubectl exec --namespace spinnaker -it spinnaker-spinnaker-halyard-0 bash

For more info on using Halyard to customize your installation, visit:
  https://www.spinnaker.io/reference/halyard/

For more info on the Kubernetes integration for Spinnaker, visit:
  https://www.spinnaker.io/reference/providers/kubernetes-v2/
```

**Jenkins** 3 search Admin | log out

Jenkins > Admin

[People](#) [Status](#) [Builds](#) [Configure](#) [My Views](#) [Credentials](#)

Full Name  ?

Description  ?

**API Token**

Current token(s)

There are no registered tokens for this user.

?

- [Back to Dashboard](#)
- [Manage Jenkins](#)

Filter:

Updates	Available	Installed	Advanced
<b>Install</b> ↓			
		Name	Version
		<a href="#">Cisco Spark Notifier</a>	
<input type="checkbox"/>		Notify Cisco Spark spaces from build, post-build and pipeline steps using 'Secret text' credential containing bot or user token	1.1.1
		<a href="#">HashiCorp Vault</a>	
<input type="checkbox"/>		Jenkins plugin to populate environment variables from secrets stored in HashiCorp's Vault	3.4.1
		<a href="#">Amazon ECR</a>	
<input checked="" type="checkbox"/>		This plugin generates Docker authentication token from Amazon Credentials to access Amazon ECR.	1.6
		<a href="#">CloudBees AWS Credentials</a>	
<a href="#">Install without restart</a>		<a href="#">Download now and install after restart</a>	

Update information obtained: 21

- [Back to Dashboard](#)
- [Manage Jenkins](#)
- [Manage Plugins](#)

## Installing Plugins/Upgrades

### Preparation

- Checking internet connectivity
- Checking update center connectivity
- Success

### Variant

● Downloaded Successfully. Will be activated during the next boot

### Amazon Web Services SDK

● Installing

### CloudBees AWS Credentials

● Pending

### Amazon ECR

● Pending

### Restarting Jenkins

● Pending

➡ [Go back to the top page](#)  
(you can start using the installed plugins right away)

➡  Restart Jenkins when installation is complete and no jobs are running



[Back to credential domains](#)

## [Add Credentials](#)

Kind

Scope  [?](#)

ID  [?](#)

Description  [?](#)

Access Key ID  [?](#)

Secret Access Key

These credentials are valid but do not have access to the "AmazonEC2" service in the region "us-east-1". This message is not a problem if you need to access to other services or to other regions.  
 Message: "You are not authorized to perform this operation. (UnauthorizedOperation)"

IAM Role Support

[Advanced...](#)

[OK](#)

## Branch Sources

**GitHub** X

Credentials  Add ?

User obscurerichard

Repository HTTPS URL

Repository HTTPS URL  ?

Repository Scan - Deprecated Visualization Validate

Save Apply

Behaviors

**Discover branches** X ?

Strategy  ?

**Discover pull requests from origin** X ?

Strategy  ?

**Discover pull requests from forks** X ?

Strategy  ?

Trust  ?

May not be supported on older versions of GitHub Enterprise. See help button.

Add

Property strategy  ?

Add property

Add source

### Build Configuration

Mode

Script Path  ?

SPINNAKER Search Projects Applications Search

### New Application

**Name \***

**Owner Email \***

**Repo Type**

**Repo Project**

**Repo Name**

**Description**

**Instance Health**

- Consider only cloud provider health when executing tasks
- Show health override option for each operation

**Instance Port**

**Pipeline Behavior**

- Enable restarting running pipelines
- Enable re-run button on active pipelines

\* Required

SPINNAKER Search Projects Applications Search

**shipandspin** PIPELINES INFRASTRUCTURE TASKS CONFIG

Group by Pipeline Show 20 executions per pipeline  stage durations

Match against

**Account**

**File path**

---

**Display name**

---

If missing

**Use Prior Execution**

**Use Default Artifact**


Default artifact

**Account**

**Content URL**

**Commit/Branch**

Match against 

 Remove artifact

**Account**

 obscurerichard 

**File path** 

chapter9/values-spin.yaml

**Display name**

values-spin.yaml

If missing 

**Use Prior Execution**

**Use Default Artifact**

Default artifact 

**Account**

 obscurerichard 

**Content URL** 

https://api.github.com/repos/PacktPublishing/Docker-for-Developer

**Commit/Branch** 

staging

## Automated Triggers

**Type**

Jenkins  



**Master**

my-jenkins-master  



**Job**

Spinnaker/job/staging  



**Property File** 

build.properties

**Artifact Constraints** 

Select... 

Trigger Enabled

 Add Trigger



## Bake (Manifest) Configuration

### Template Renderer

Render Engine  HELM2 

### Helm Options

Name shipit-staging

Namespace default

### Template Artifact



Expected Artifact   helm.tar.gz 

### Overrides

Expected Artifact  values-spin.yaml  

 Add value artifact

#### Overrides

Key	Value	
image.repository	<code>\${trigger["properties"]["ima</code>	
ingress.hosts[0].host	<code>shipit-staging.eks.example.c</code>	

 Add override

#### Expression Evaluation

Evaluate SpEL expressions in overrides at bake time

## Produces Artifacts

Match against <sup>?</sup>



**Kind**

b64 Base64 ▼

An artifact that includes its referenced resource as part of its payload.

**Name**

kube-templates.yaml

Assign to a matched artifact

**Display name**

kube-templates.yaml

If missing <sup>?</sup>

**Use Default Artifact**

➕ Add Artifact

## Deploy (Manifest) Configuration

### Basic Settings

**Account** <sup>?</sup>

default ▼

**Application** <sup>?</sup>

shipandspin

**Override Namespace**

**Namespace**

default ▼

### Manifest Configuration

**Manifest Source** <sup>?</sup>

Text

Artifact

**Manifest Artifact** <sup>?</sup>

b64 kube-templates.yaml ▼

**Expression Evaluation** <sup>?</sup>

Skip SpEL expression evaluation

**Required Artifacts to Bind** <sup>?</sup>

Select an artifact... ▼

### Rollout Strategy Options

**Enable** <sup>?</sup>

Spinnaker manages traffic based on your selected strategy



Group by

Pipeline

Show

20

executions per pipeline

stage durations



SEARCH

PIPELINES

- shipit-eks-staging
- shipit-eks-prod

Reorder Pipelines

STATUS

- Running
- Terminal
- Succeeded
- Not Started
- Canceled
- Stopped
- Paused
- Buffered

DEFAULT

shipit-eks-staging

Trigger: enabled

Configure

Start Manual Execution

BUILD #9

MANUAL START

[anonymous] (anonymous)  
25 minutes ago

00:02

00:16

Status: SUCCEEDED

Duration: 00:19



- [View All Artifacts \(3\)](#)
- [Execution Details](#)

BUILD #9

MANUAL START

[anonymous] (anonymous)  
about 1 hour ago

00:01

00:05

Status: TERMINAL

Duration: 00:07



- [View All Artifacts \(3\)](#)
- [Execution Details](#)

BUILD #9

MANUAL START

[anonymous] (anonymous)  
about 3 hours ago

00:15

-

Status: TERMINAL

Duration: 00:15



- [View All Artifacts \(3\)](#)
- [Execution Details](#)

# Chapter 10: Monitoring Docker Using Prometheus, Grafana, and Jaeger

### Build Configuration

Mode

Script Path

The screenshot shows the AWS CloudWatch Logs console. The left sidebar contains navigation options like CloudWatch, Dashboards, Alarms, Billing, Logs, and Settings. The main area displays a table of log groups with columns for Log group, Retention, Stored bytes, and Creation time.

Log group	Retention	Stored bytes	Creation time
/aws/eks/EKS-SPW7G0B/cluster	Never expire	4.36 GB	22 days ago
/aws/lambda/amazon-eks-EKSStack-16HIS-CleanupLoadBal...	Never expire	1.63 KB	22 days ago
/aws/lambda/amazon-eks-EKSStack-16HIS-CleanupSecurity...	Never expire	2.89 KB	22 days ago
/aws/lambda/amazon-eks-EKSStack-16HIS-DeleteBucketCo...	Never expire	1.63 KB	22 days ago
/aws/lambda/amazon-eks-EKSStack-16HIS-XPV-RegisterTy...	Never expire	2.34 KB	22 days ago
/aws/lambda/amazon-eks-EKSStack-16HIS-XPV-CreateVp...	Never expire	1.38 KB	22 days ago
/aws/lambda/amazon-eks-EKSStack-16HIS-XPVX-GetCall...	Never expire	1.62 KB	22 days ago
/aws/lambda/amazon-eks-EKSStack-16HIS-XPVX15-Copy...	Never expire	1.3 KB	22 days ago
/aws/lambda/amazon-eks-EKSStack-16HIS-XPVX15-Funct...	Never expire	84.59 KB	22 days ago
Amazon-EKS-EKSStack-16HIS-XPVX15-BastionStack-13RK...	Never expire	-	22 days ago
aws-eks-cluster-logs	Never expire	784.46 KB	28 days ago

Prometheus Alerts Graph Status Help

## Alerts

Inactive (1) Pending (0) Firing (0)


Show annotations


```
/etc/config/alerts > Kubernetes


InstanceDown (0 active)

alert: InstanceDown
expr: up == 0
for: 5m
labels:
  severity: page
annotations:
  description: '{{ $labels.instance }} of job {{ $labels.job }} has been down for more than 5 minutes.'
  summary: Instance {{ $labels.instance }} down
```

#docker-book-notices ★  
 4 | Add a topic [Edit](#) (i)

 **Richard Bullington-McGuire** 12:19 AM Today ▾  
 added an integration to this channel: [Prometheus](#) New

 **Prometheus** APP 1:03 AM  
 [FIRING:1] (Hello World)

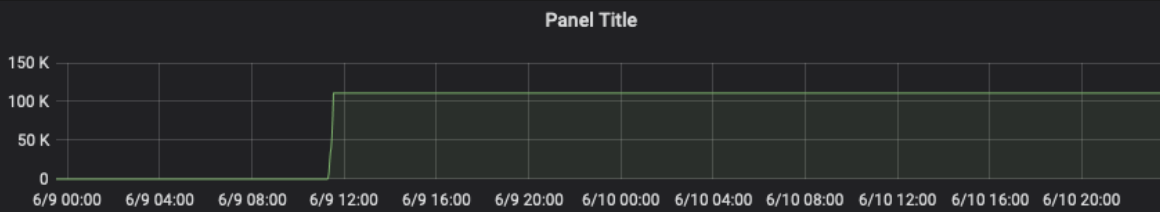
 **Richard Bullington-McGuire** 1:04 AM  
 👉 looks like the Prometheus Slack integration is working 🎉

Message #docker-book-notices

⚡ B I ↻ </> 🔗 ☰ ☷ ☹️ 📎 Aa @ 😊 📎 ▶

← New dashboard ▾ 📄 ⚙️ ⌚ Last 2 days ▾ 🔍 ↻ ▾

Panel Title



6/9 00:00 6/9 04:00 6/9 08:00 6/9 12:00 6/9 16:00 6/9 20:00 6/10 00:00 6/10 04:00 6/10 08:00 6/10 12:00 6/10 16:00 6/10 20:00

— shipitclicker\_deployments\_total{app\_kubernetes\_io\_instance="shipit-staging",app\_kubernetes\_io\_managed\_by="spinnaker",app\_kubernetes\_io\_name="shipitclie

Query default ▾ Add Query Query Inspector ?


▾ A ↓ ↑ 📄 👁 🗑

Metrics ▾ shipitclicker\_deployments\_total

Legend ⓘ legend format Min step ⓘ Resolution 1/1 ▾

Format Time series ▾ Instant  Prometheus ⓘ

Min time interval ⓘ 0 Relative time 1h Time shift 1h

 📄 New dashboard ▾ 📊 📄 ⚙️ 📺 ⌚ Last 2 days ▾ 🔍 ↻ ▾



**Search** JSON File

Service (1)  
jaeger-query

Operation (2)  
all

Tags ?  
http.status\_code=200 error=true

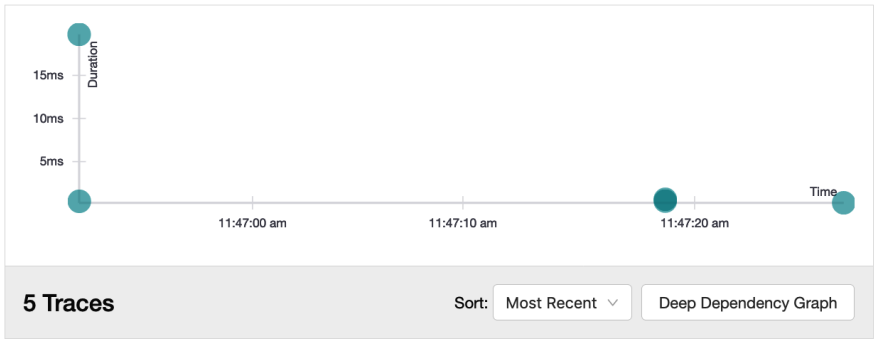
Lookback  
Last Hour

Min Duration  
e.g. 1.2s, 100ms, 500us

Max Duration  
e.g. 1.2s, 100ms, 500us

Limit Results  
20

Find Traces



Compare traces by selecting result items

- jaeger-query: /api/services/{service}/operations 260bc45 0.21ms  
 1 Span jaeger-query (1) Today | 11:47:27 am a few seconds ago
- jaeger-query: /api/services/{service}/operations 2a45a60 0.62ms  
 1 Span jaeger-query (1) Today | 11:47:19 am a few seconds ago
- jaeger-query: /api/services 365416a 0.42ms  
 1 Span jaeger-query (1) Today | 11:47:19 am a few seconds ago
- jaeger-query: /api/services/{service}/operations 7e89efa 0.39ms



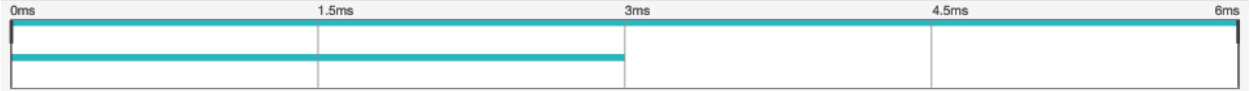
### shipitclicker-v7: /:id/:element e2b7e0b

Find...



Alternate Views

Trace Start June 13 2020, 20:14:42.587 Duration 6ms Services 1 Depth 2 Total Spans 2



#### Service & Operation

0ms 1.5ms 3ms 4.5ms 6ms

#### shipitclicker-v7 /:id/:element

### /:id/:element

Service: shipitclicker-v7 | Duration: 6ms | Start Time: 0ms

> **Tags:** http.method = PATCH | http.status\_code = 200 | http.url = /api/v2/games/KhvVkJkAkZYJLkoeQJB5LF1/score..

> **Process:** \${namespace}.version = 0.10.0 | client-uuid = e341a375-c7de-4944-af9c-2d664945de7e | hostname = 7d...

#### Logs (3)

> **0ms:** event = request\_received | payload = undefined

> **5ms:** key = KhvVkJkAkZYJLkoeQJB5LF1/score | msg = Game item Redis INCRBY complete | value = 553

> **6ms:** event = request\_finished | payload = undefined

Log timestamps are relative to the start time of the full trace.

SpanID: e2b7e0b3580aed11

#### shipitclicker-v7 redis

### redis

Service: shipitclicker-v7 | Duration: 3ms | Start Time: 0ms

> **Tags:** db.statement = INCRBY KhvVkJkAkZYJLkoeQJB5LF1/score 4 | db.type = redis | internal.span.format = jaeger..

> **Process:** \${namespace}.version = 0.10.0 | client-uuid = e341a375-c7de-4944-af9c-2d664945de7e | hostname = 7d...

#### Logs (1)

> **3ms:** result = 553

Log timestamps are relative to the start time of the full trace.

SpanID: f269aa8582430476

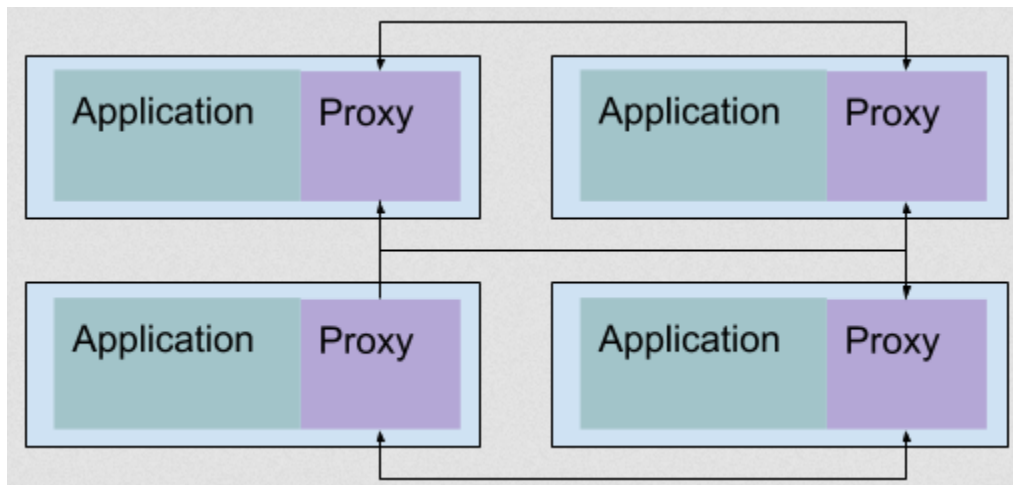
# Chapter 11: Scaling and Load Testing Docker Applications

## Number of nodes

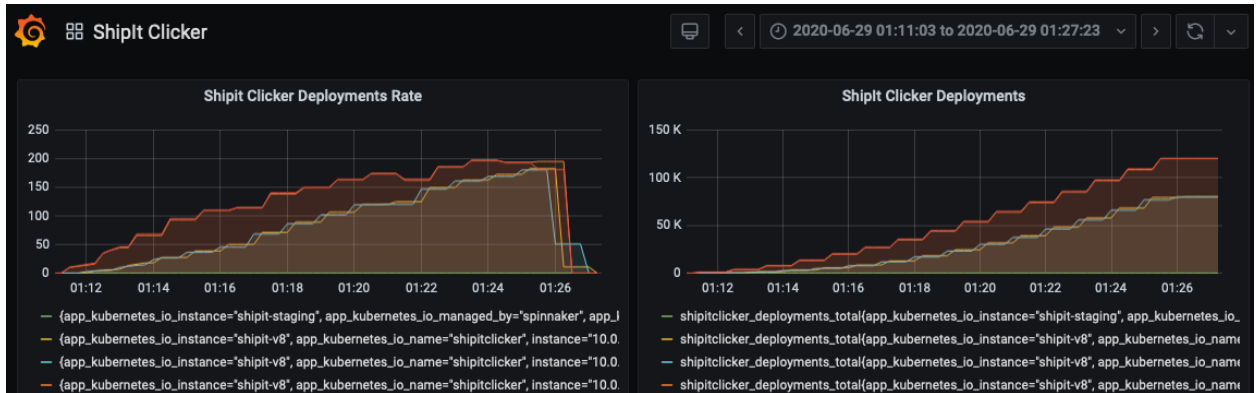
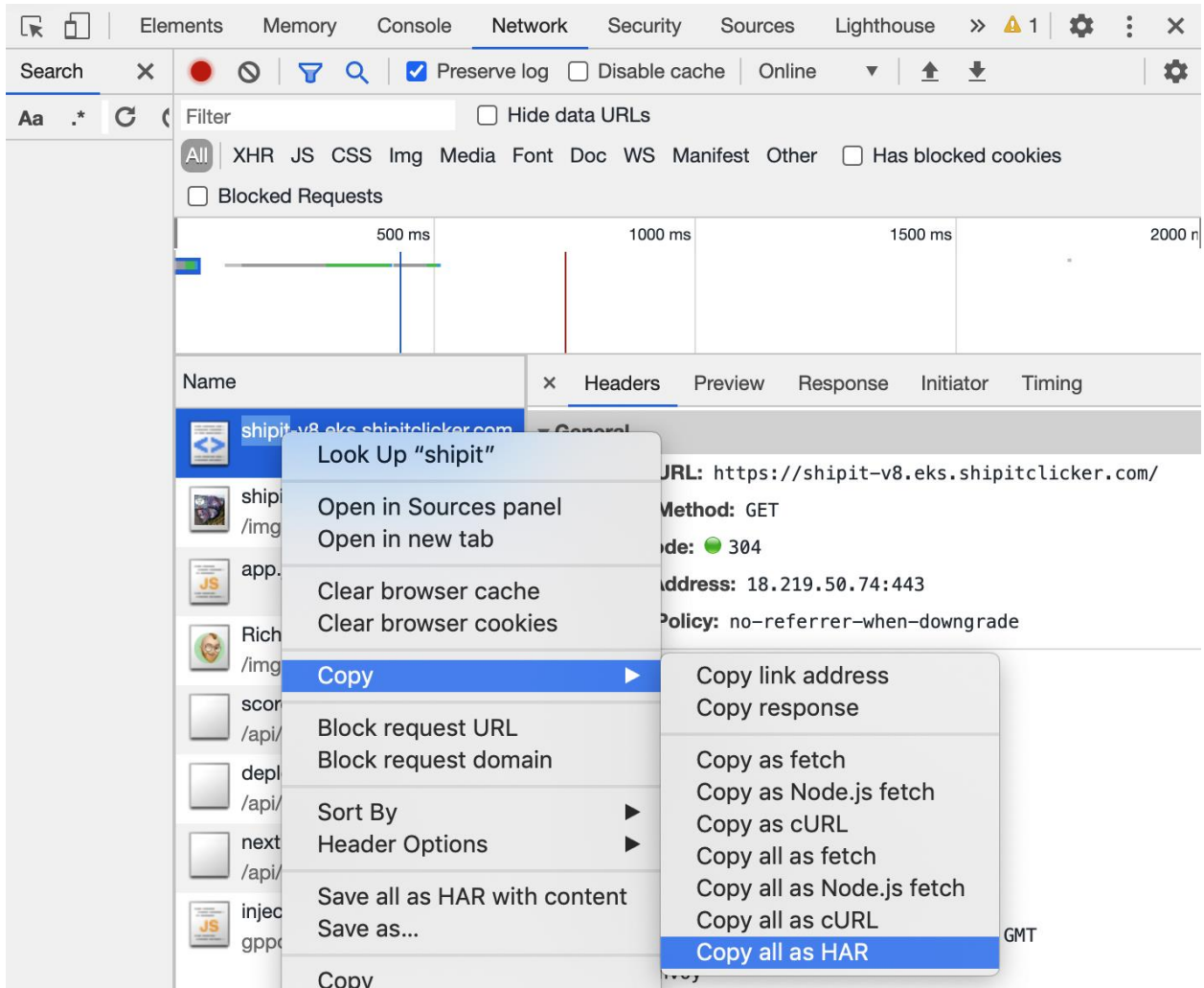
The number of Amazon EKS node instances. The default is one for each of the three Availability Zones.

## Maximum number of nodes

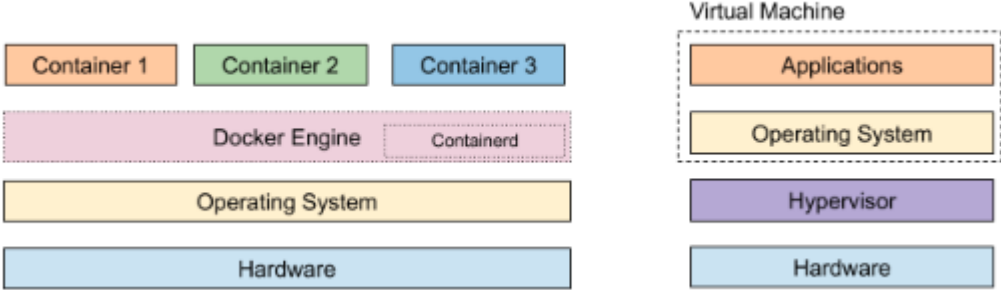
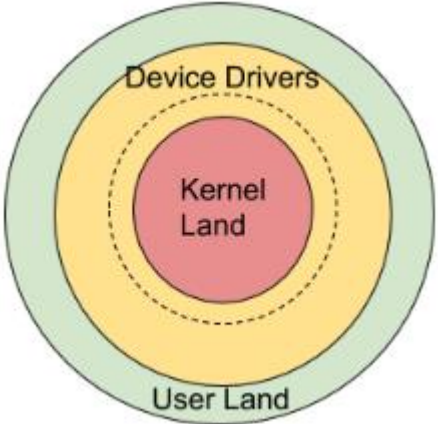
The maximum number of Amazon EKS node instances. The default is three nodes.







# Chapter 12: Introduction to Container Security



● Docker Desktop is running

About Docker Desktop

Preferences... ⌘,

Check for Updates...

Diagnose and Feedback...

Documentation

More of Docker ▶

Kitematic

Sign in / Create Docker ID

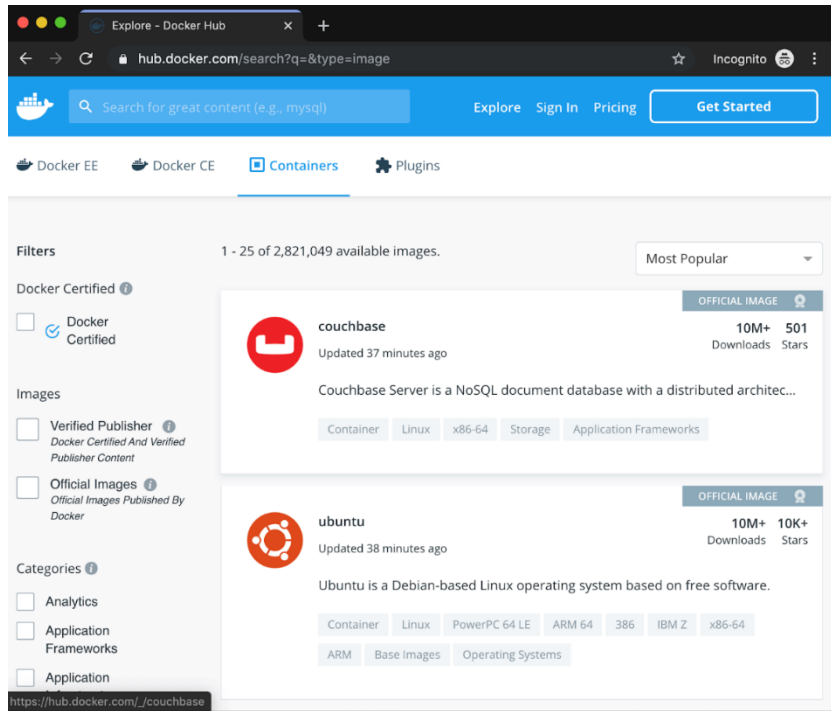
Repositories

Kubernetes

Restart ⌘R

Quit Docker Desktop ⌘Q

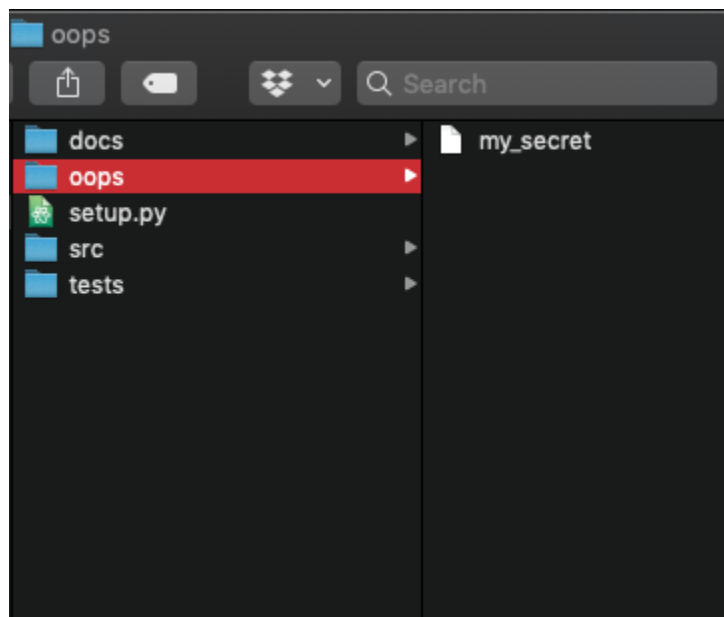
# Chapter 13: Docker Security Fundamentals and Best Practices



**dockerfordevelopers/shipitclicker:0.1**

DIGEST: sha256:39eda93d15866957feaae28f8fc5adb545276a64147445c64992ef69804dbf01

OS/ARCH	SIZE	LAST PUSHED
linux/amd64	2.68 MB	a few seconds ago by <a href="#">rpigui</a>



# Chapter 15: Scanning, Monitoring, and Using Third-Party Tools



/

root

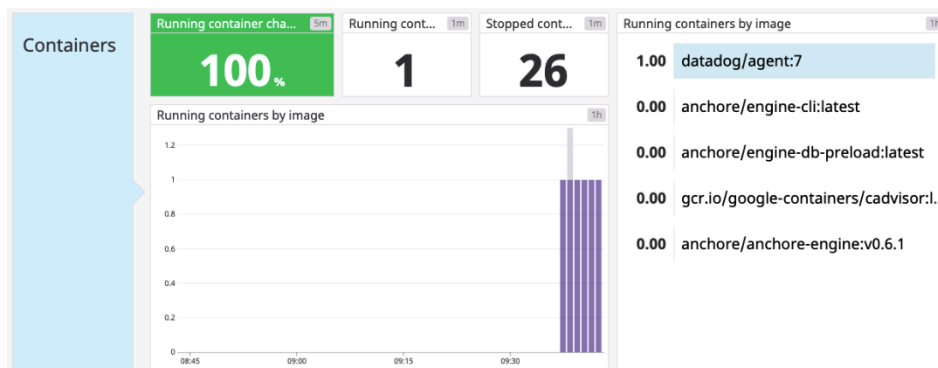
**Docker Containers**

**Subcontainers**

<a href="#">/000-metadata</a>
<a href="#">/001-sysfs</a>
<a href="#">/002-binfmt</a>
<a href="#">/003-sysctl</a>
<a href="#">/004-format</a>
<a href="#">/005-extend</a>
<a href="#">/006-mount</a>
<a href="#">/007-swap</a>
<a href="#">/008-move-logs</a>
<a href="#">/009-mount-docker</a>
<a href="#">/010-mount-kube-images</a>
<a href="#">/011-bridge</a>
<a href="#">/012-ip</a>
<a href="#">/docker</a>
<a href="#">/kmsg</a>
<a href="#">/kubepods</a>
<a href="#">/podruntime</a>
<a href="#">/systemreserved</a>
<a href="#">/write-and-rotate-logs</a>

**Isolation**

CPU
Shares 1024 shares
Allowed Cores 0 1 2 3



**Security Configuration | Detection Rules**

78 rules defined New Rule +

Q container Show disabled rules

Options

RULE ↑	SEVERITY	SOURCE	SCOPE
Container Image Vulnerability Detected <small>DEFAULT</small>	HIGH	twistlock	<input checked="" type="checkbox"/>
Container Violated Compliance Standards <small>DEFAULT</small>	HIGH	twistlock	<input checked="" type="checkbox"/>

```

NAME: datadog-agent
LAST DEPLOYED: Wed Jun 3 10:23:37 2020
NAMESPACE: default
STATUS: deployed
REVISION: 1
TEST SUITE: None
NOTES:
Datadog agents are spinning up on each node in your cluster. After a few
minutes, you should see your agents starting in your event stream:
https://app.datadoghq.com/event/stream

```



All Dashboards				
<input type="checkbox"/>	★ ↑	Name	Modified	Popularity
<input type="checkbox"/>	☆	Security Signals	Jun 3, 2020	
<input type="checkbox"/>	☆	Docker - Overview Preset	-	
<input type="checkbox"/>	☆	Host Counts Preset	-	
<input type="checkbox"/>	☆	Kubernetes - Overview Preset	-	
<input type="checkbox"/>	☆	Kubernetes Pods Overview Preset	-	
<input type="checkbox"/>	☆	System - Disk I/O Preset	-	
<input type="checkbox"/>	☆	System - Metrics Preset	-	
<input type="checkbox"/>	☆	System - Networking Preset	-	

