

# Distributed computing

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# Contents

Preface	2
I Ansible	3
1 Ansible	4
II Kubernetes	5
2 Kubernetes	6
III Amazon Web Services	8
3 Amazon Web Services (aws)	9

# Preface

This is a live document, and is full of gaps, mistakes, typos etc.

**Part I**

**Ansible**

# Chapter 1

## Ansible

### 1.1 Introduction

#### 1.1.1 Introduction

basically send scripts for remote computer to run. installed on users pc, not destination.

set up things like users, apt commands etc

configured in playbooks

/etc/ansible/hosts

ansible command

ansible-inventory command

ansible-playbook command

#### 1.1.2 Module: apt

#### 1.1.3 Module: git\_config

#### 1.1.4 Module: git

#### 1.1.5 Module: template

# **Part II**

# **Kubernetes**

## Chapter 2

# Kubernetes

### 2.1 Introduction

#### 2.1.1 Introduction

Pods are collections of docker containers. Can be just one docker container or more

Nodes are where pods are deployed. Could be one node, or more.

Cluster is a collection of nodes

#### 2.1.2 Kubernetes (k8s)

#### 2.1.3 minikube

Developed by developers of k8s.

#### 2.1.4 k3s

Developed by Rancher

```
systemctl status k3s
systemctl stop k3s
systemctl start k3s
```

#### 2.1.5 microk8s

Developed by Canonical.

Might need to change firewall rules

<https://ubuntu.com/tutorials/install-a-local-kubernetes-with-microk8s#2-deploying-microk8s>

If need to hard reset

```
sudo microk8s reset --destroy-storage
sudo microk8s kubectl delete --all deployments --namespace=foo
```

Enable things. Registry allows the use of local Docker builds.

```
sudo microk8s enable dns dashboard storage registry
```

check all running

```
microk8s kubectl get all --all-namespaces
```

read off ip of dashboard. go to <https://ip:443>

get token

```
sudo microk8s config
```

Enable loadbalancer. Separate as asks questions.

```
sudo microk8s enable metallb
```

Run dashboard. Go to IP and port for service/kubernetes-dashboard.

```
sudo microk8s dashboard-proxy
```

### 2.1.6 Kompose

using kompose to convert docker-compose file to kubernetes file First convert the docker compose file to a kubernetes file.

```
kompose --file docker-compose.yml --build convert
```

But change image name to local

```
spec:
  containers:
    - image: localhost:32000/homepage-nodejs
```



## Part III

# Amazon Web Services

## Chapter 3

# Amazon Web Services (aws)

### 3.1 Introduction

#### 3.1.1 Introduction