



# Red Hat OpenShift on Azure Workshop

Level 101

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2018/03/28

# AGENDA

## OpenShift on Azure Workshop

### OpenShift Architecture Overview

- What's Container
- OpenShift Architecture
- Deep Dive a bit~

Lab1 - TestDrive & oc client

Lab2 - Quickstart

Lab3 - Explore Web Console

Lab4 - Source-to-Image (S2I)

Lab5 - Add Database

# Before we start

## Provision OpenShift on Azure TestDrive

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Red Hat OpenShift Container Platform

Overview Plans

Red Hat OpenShift Container Platform

Red Hat OpenShift Container Platform manage container-based cloud infrastructures. OpenShift and IT operations teams development processes.

OpenShift Highlights:

- Simple to use with
- For traditional, stateful, and cloud-native applications
- Built on proven open source technologies including Red Hat Enterprise Linux, Kubernetes, and Docker
- Enterprise-grade security, compliance, and container management
- Expanded applications support with new and updated runtimes

This offering includes one bastion host, three master nodes, three infrastructure nodes, and a customizable number and size of application nodes.

- Three master nodes are using E2s, v3 instances
- Three infrastructure nodes are using D4s, v4 instances

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Apps ▸ Red Hat OpenShift Container Platform ▸ Test Drive

### Test Drive



## Red Hat OpenShift Container Platform by Red Hat



**Getting  
ready...**

This might take a few minutes. We'll email you when it's ready.

### Test Drive details

OpenShift is designed to provide one thing for Developers: Ease of Use without Worries. OpenShift's mission is to make your job easier by taking care of all the messy IT aspects of app development and allowing you to focus on your job: Coding your Application and satisfying your customers. This is a great way to learn about building, deploying, and managing containerized services and applications with RedHat OpenShift Container Platform on Microsoft Azure. In this 4-hour Azure test drive, you'll get an overview of how OpenShift can help provide a secure, flexible, and easy-to-manage application infrastructure. Start the test drive and use the manual below to get started!

### Documentation

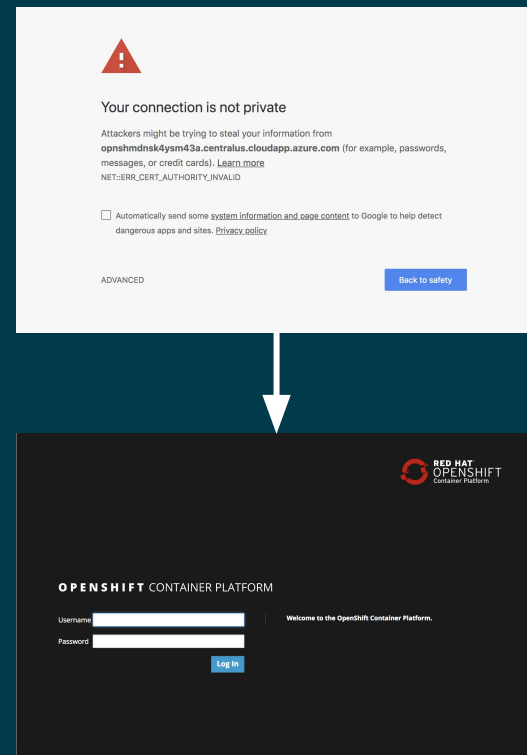
[Test Drive User Manual](#)

# OpenShift Architecture Overview

# Lab1 - TestDrive & oc client

1. Provision OpenShift on [Azure TestDrive](#)
2. Download oc client (OS must be 64bits)
  - a. [Windows](#)
  - b. [Mac](#)
  - c. [Linux](#)
3. Set PATH
  - a. `export PATH=$PATH:~/OpenShift`
4. Command:
  - a. `oc version`
  - b. `oc login https://{openshift on azure host}:8443`
    - i. ID/PW: testdrive / password

Reference [manual](#)



# Lab2 - Quickstart

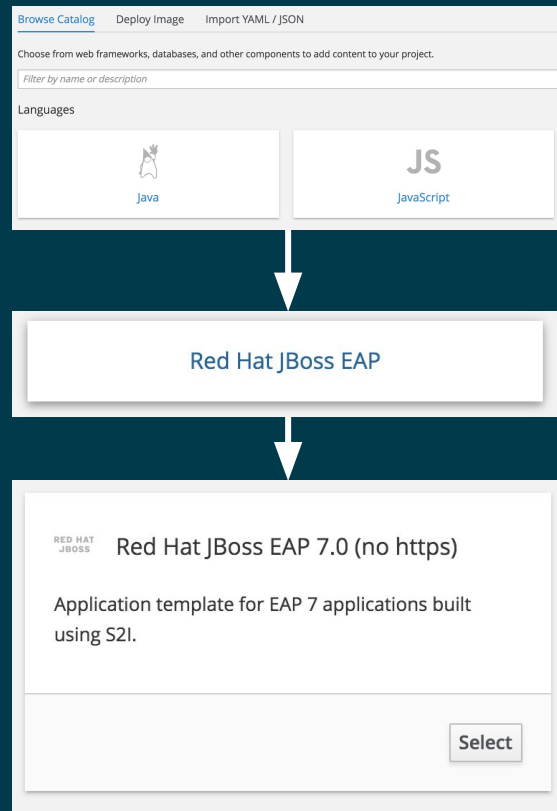
1. Create project
  - a. `oc new-project usertestdrive-guestbook`
2. Switch project
  - a. `oc get projects`
  - b. `oc projects {Project ID}`
3. Deploy Image from DockerHub
  - a. `oc new-app kubernetes/guestbook`
4. Check following resource:
  - a. Pod
  - b. Service
  - c. DeploymentConfig / Deployment
5. Access App
  - a. Route

# Lab3 - Explore Web Console

1. Checkout following features on web console
  - a. Remote access to container
  - b. Scale pods
  - c. Self-healing
  - d. Health Check
    - i. Readiness: delay-10
    - ii. Liveness: delay-20
  - e. Resource Limit
  - f. Autoscaler\*

# Lab4 - Source-to-Image (S2I)

1. Using EAP7.0 template to deploy S2I Application
  - a. Template: Red Hat JBoss EAP 7.0 (no https)
  - b. App Name: nationalpark
  - c. Source: <https://gitlab.com/gshipleynationalparks.git>
    - i. Branch: master
    - ii. Context dir: /
  - d. **Hint: ImageStreamTag change to latest**
2. Checkout following items
  - a. Build & Build Logs
  - b. Input & Output Images
3. Challenge:
  - a. revise source to personal github repo and modify source.  
Trigger new build to see how things go.





# Lab5 - Add Database

1. Add MongoDB from service catalog
  - a. Template: MongoDB (Ephemeral)
  - b. Environments:
    - i. MONGODB\_USER: mongodb
    - ii. MONGODB\_PASSWORD: mongodb
    - iii. MONGODB\_DATABASE: mongodb
    - iv. MONGODB\_ADMIN\_PASSWORD: mongodb
2. Edit Nationalpark app's DeploymentConfig
  - a. Environments:
    - i. MONGODB\_USER: mongodb
    - ii. MONGODB\_PASSWORD: mongodb
    - iii. MONGODB\_DATABASE: mongodb
    - iv. MONGODB\_ADMIN\_PASSWORD: mongodb

## Data Stores 2



### MongoDB (Ephemeral)

MongoDB database service, without persistent storage. For more information about using this template, including OpenShift considerations, see <https://github.com/sclorg/mongodb-container/blob/master/3....>

Select



#### \* Database Service Name

The name of the OpenShift Service exposed for the database.

#### \* MongoDB Connection Username

Username for MongoDB user that will be used for accessing the database.

#### \* MongoDB Connection Password

Password for the MongoDB connection user.

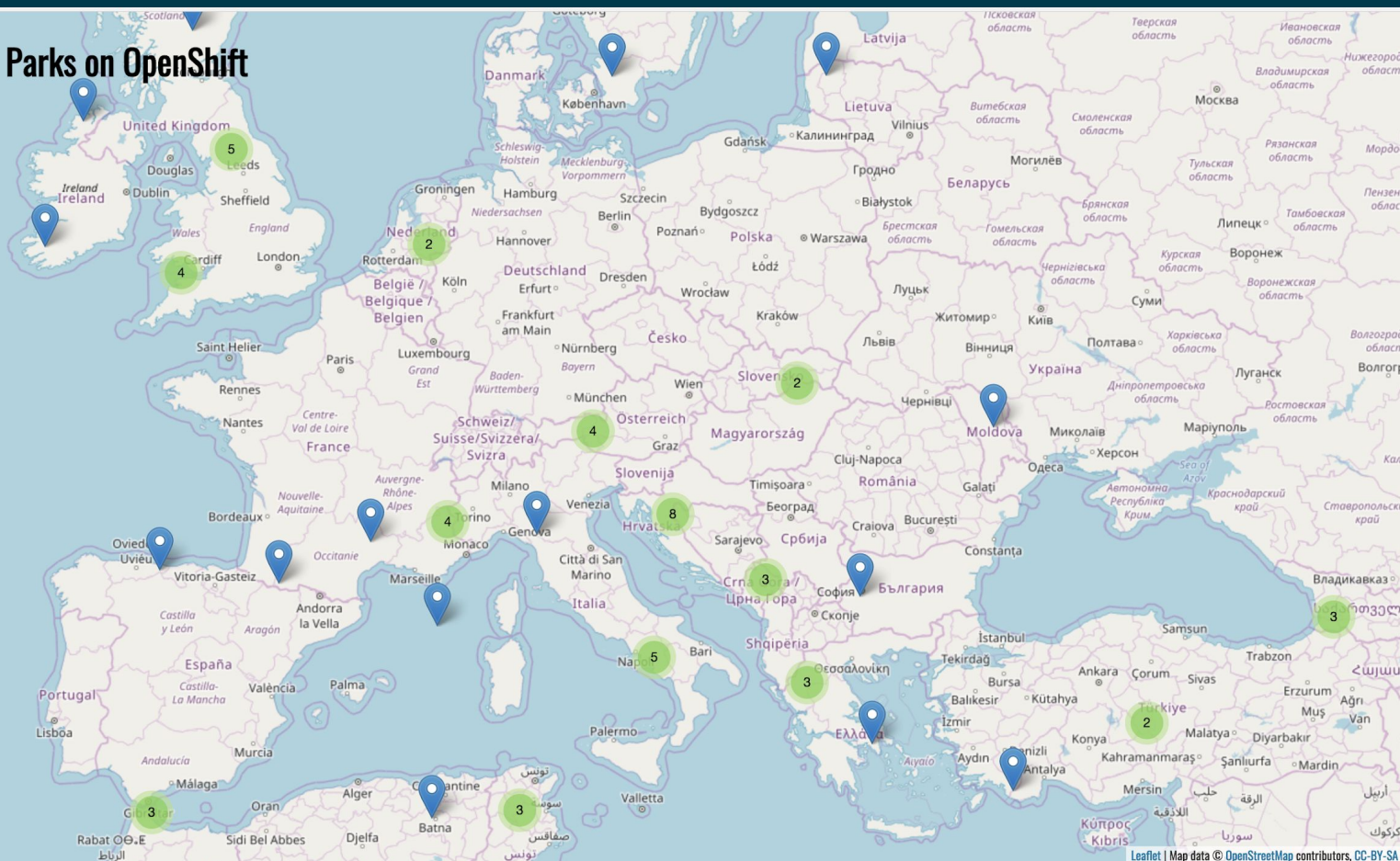
#### \* MongoDB Database Name

Name of the MongoDB database accessed.

#### \* MongoDB Admin Password

Password for the database admin user.

# National Parks on OpenShift



Leaflet | Map data © OpenStreetMap contributors, CC-BY-SA

# Bonus

## 1. Checkout

### a. MongoDB

- i. `oc exec -ti {Mongo POD} -- bash -c 'mongo -u mongodb -p mongodb mongodb'`
- ii. `db.parks.count();`
- iii. `db.parks.find();`

### b. JMX Console for Java app.

### c. Using Template deploying complex .NET app



# THANK YOU



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