

Lesson 1 : Navigate OpenShift Web Console

Navigate OpenShift Web Console

Administrative tasks

- Command Line Interface (CLI)
 - **oc** Command
 - **kubectl** Command
 - Can be scripted
- Graphical User Interface – Web Console
 - Uses Kubernetes API and OpenShift extension APIs
 - Ease of access and management

The Web Consoles

Kubernetes

- Web-based
 - Not deployed by default
 - Minimal security permissions
 - Accepts only token-based authentication
 - Require Proxy setup

OpenShift

- Web-based
 - fully deployed
 - Additional operators extend features and functionality

Accessing the OpenShift Web Console

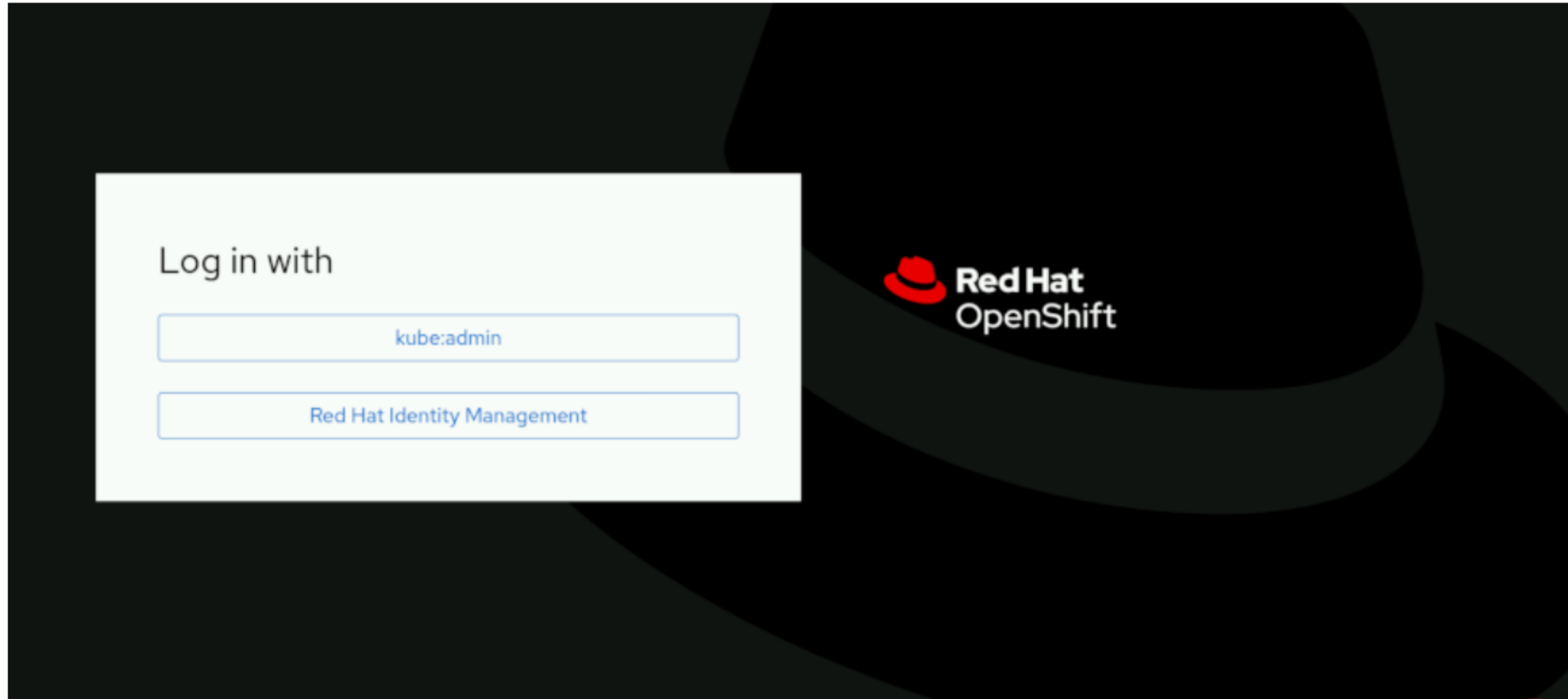
```
[user@host ~]$ oc login -u user -p password https://api.ocp4.example.com:6443  
Login successful.
```

...output omitted...

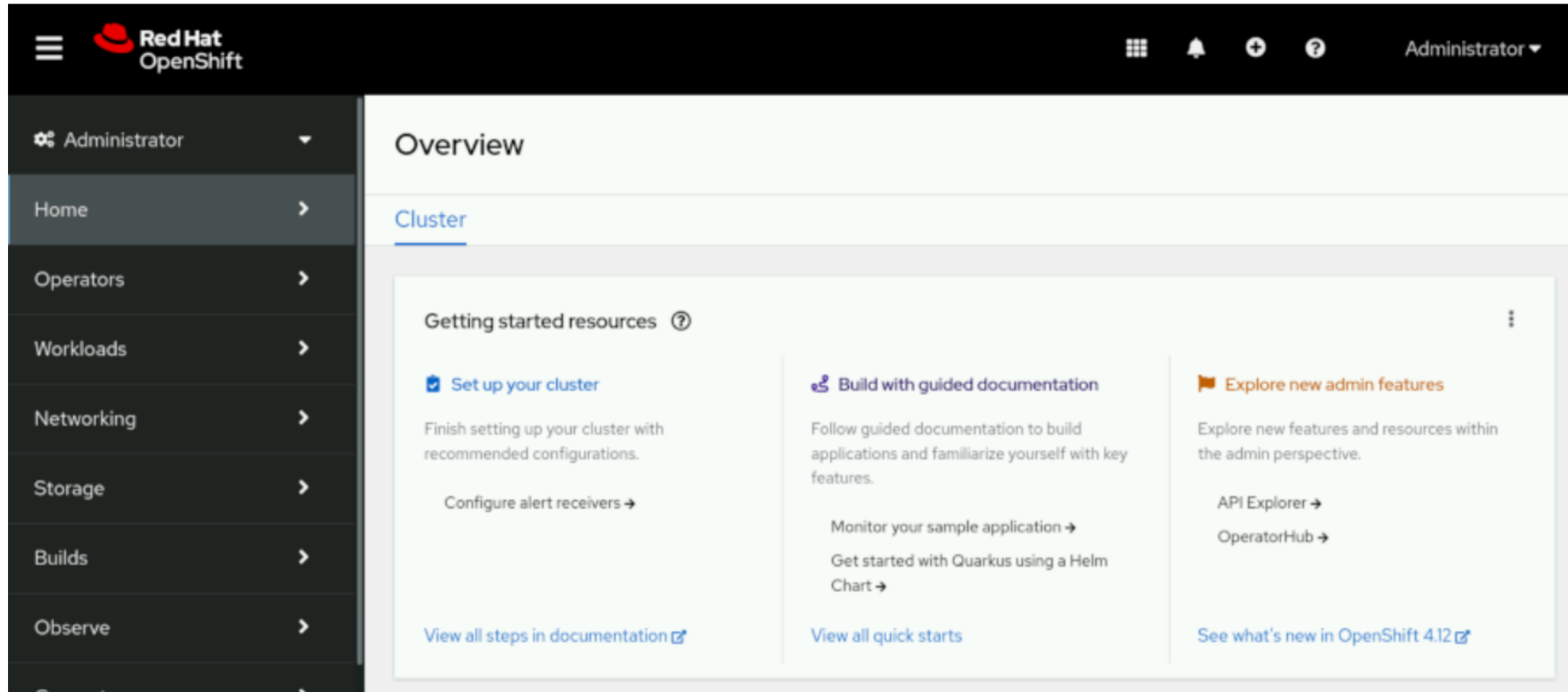
Then, you execute the `oc whoami --show-console` command to retrieve the web console URL:

```
[user@host ~]$ oc whoami --show-console  
https://console-openshift-console.apps.ocp4.example.com
```

First page – The authentication



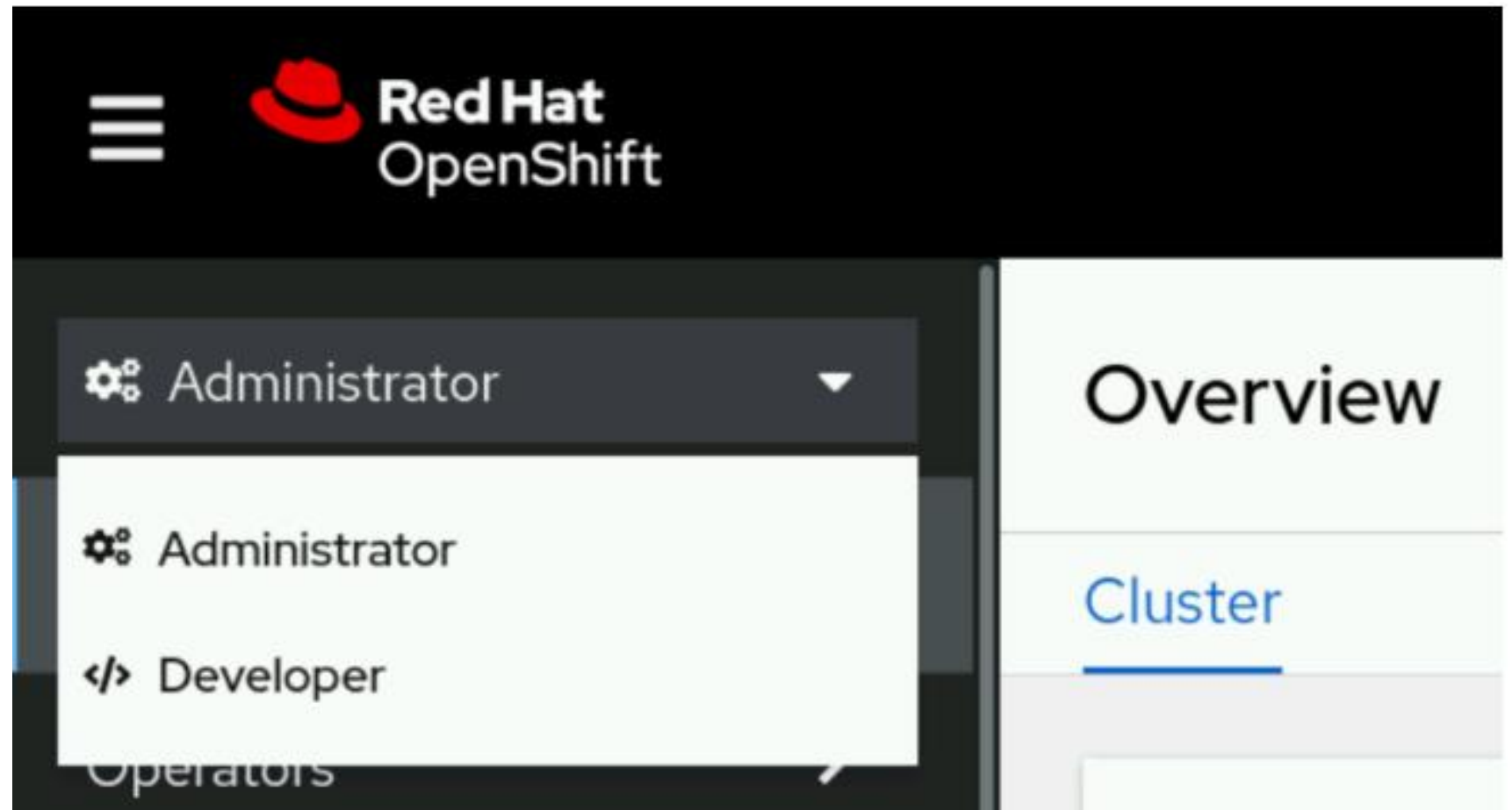
OpenShift home page



Web Console Perspective

Administrator perspective

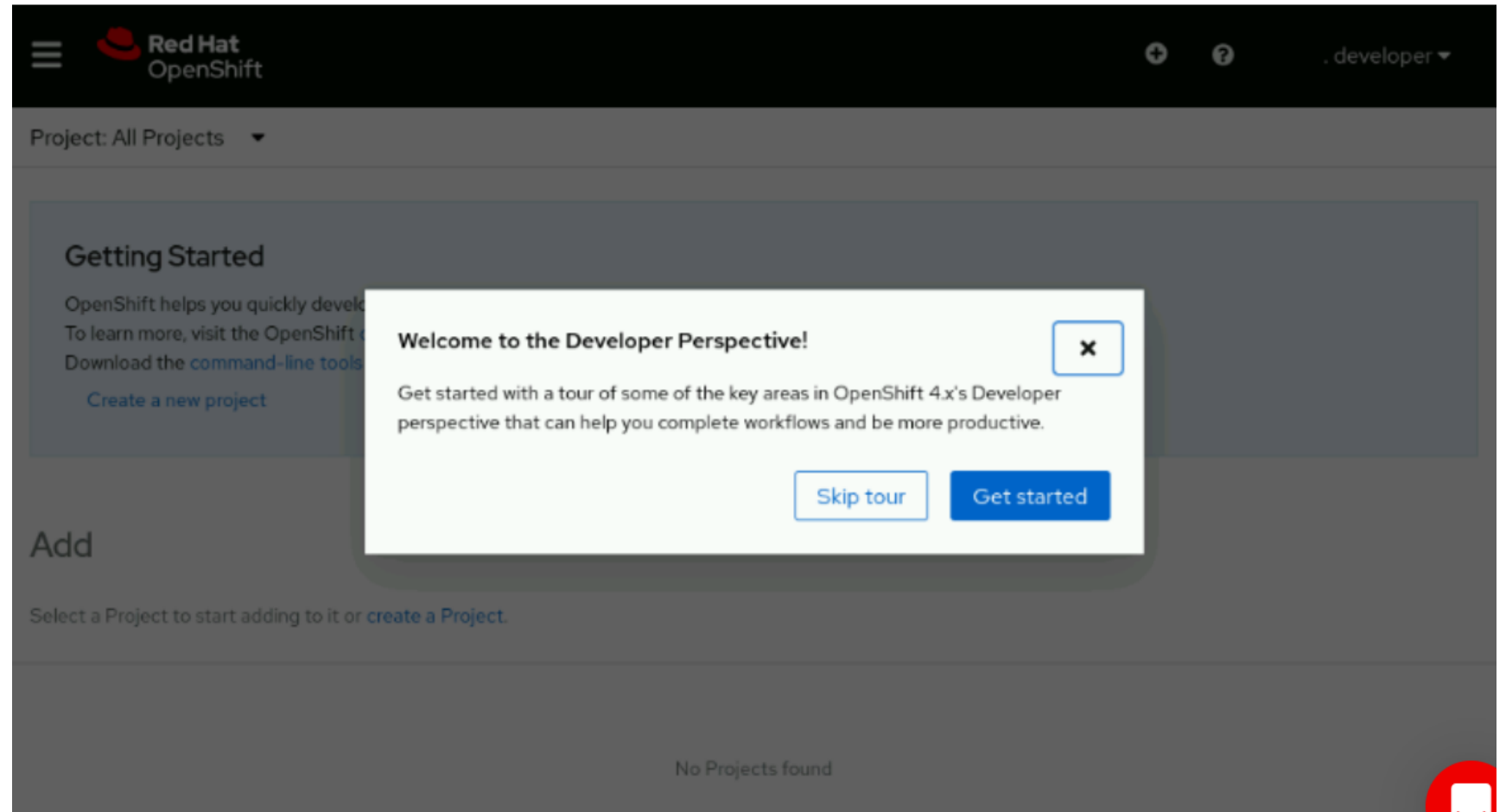
- cluster configuration
- operations of clusters
- creating deployments
- running workloads



Developer perspective

- creating deployment
- running workloads

Short information tour



Install Operator

Install your Operator by subscribing to one of the update channels to keep the Operator up to date. The strategy determines either manual or automatic updates.

Cluster in STS Mode

This cluster is using AWS Security Token Service to reach the cloud API. In order for this operator to take the actions it requires directly with the cloud API, you will need to provide a role ARN (with an attached policy) during installation. Manual subscriptions are highly recommended as steps should be taken prior to upgrade to ensure that the permissions required by the next version are properly accounted for in the role. Please see the operator description for more details.

role ARN * ?

arn:aws:iam::301721915996:role/oadpbucketoc

Update channel * ?

stable-1.2

Version *

1.2.2

Installation mode *



OADP Operator

provided by Red Hat

Provided APIs

BR BackupRepository

A backup repository is an indicator of a connection from the restic/kopia server to the backupstoragelocation.

B Backup

Backup is a Velero resource that represents the capture of Kubernetes cluster state at a point in time (API objects and associated volume state).

Access OperatorHub web console

- Explore operators from Kubernetes community or Red Hat partners

Access operatorHub using command line

```
get packagemanifests -n openshift-marketplace
```

sample output

NAME	CATALOG
3scale-operator	Red Hat Operators
advanced-cluster-management	Red Hat Operators
amq7-cert-manager	Red Hat Operators
...	
couchbase-enterprise-certified	Certified Operators
crunchy-postgres-operator	Certified Operators
mongodb-enterprise	Certified Operators
...	
etcd	Community Operators
jaeger	Community Operators
kubefed	Community Operators
...	

The Developer Catalog

- After installation of operators, their capabilities will appear in Developer Catalog

installation, the Operator capabilities will appear in the [Developer Catalog](#) providing a self-service experience.




The screenshot displays the Developer Catalog interface. On the left, a sidebar lists categories: All items, CI/CD, Databases, Languages, Middleware, Other, and a 'Type' section with counts for Builder Images (12), Devfiles (6), Helm Charts (51), and Operator Backed (2). The main area shows 'All items' with a search bar and a sort dropdown set to 'A-Z'. A total of '116 items' is displayed. Two featured cards are shown: one for '.NET Builder Images' provided by Red Hat, and another for '.NET Helm Charts' also provided by Red Hat. The Helm Charts card describes it as a chart to build and deploy .NET applications.

Red Hat OpenShift Key Concepts

- Pods: The smallest unit of a Kubernetes-managed containerized application. A pod consists of one or more containers
- Deployments: The operational unit that provides granular management of a running application.
- Projects: A Kubernetes namespace with additional annotations that provide multitenancy scoping for applications.
- Routes: Networking configuration to expose your applications and services to resources outside the cluster.
- Operators: Packaged Kubernetes applications that extend cluster functions.

These concepts are covered in more detail throughout the course. You can find these concepts throughout the web console as you explore the features of an OpenShift cluster from the graphical environment.



Guided Exercise: Navigate the OpenShift Web Console

You should be able to:

- Explore the features and components of Red Hat OpenShift by using the web console.
- Create a sample application by using the Developer perspective in the web console.
- Switch to the Administrator perspective and examine the resources that are created for the sample application.
- Use the web console to describe the cluster nodes, networking, storage, and authentication.
- View the default cluster operators, pods, deployments, and services.

Chapter Summary

In this chapter, you learned:

- Containers are an isolated application runtime created with very little overhead.
- A container image packages an application with all of its dependencies, making it easier to run the application in different environments.
- Applications such as Podman create containers using features of the standard Linux kernel.
- Container image registries are the preferred mechanism for distributing container images to multiple users and hosts.
- OpenShift orchestrates applications composed of multiple containers using Kubernetes.
- Kubernetes manages load balancing, high availability, and persistent storage for containerized applications.
- OpenShift adds to Kubernetes multitenancy, security, ease of use, and continuous integration and continuous development features.
- OpenShift routes enable external access to containerized applications in a manageable way.