Developing with Red Hat Container Development Kit

This section covers creating a development environment using the CDK version 3. The CDK can be downloaded from the technologies section of the Red Hat Developer Program website. The **`minishift`** binary comes in three different forms: Linux, MacOS, and Windows. Download the appropriate binary for your system.

In addition to the CDK binary, you need to install and configure virtualization software compatible with the operating system. The following is a list of the supported hypervisors, sorted by operating system.

Hypervisors supported by Minishift

OS	Hypervisor
MacOS	xhyve (default)
	VirtualBox
	VMware Fusion (supported in upstream Minishift only)
GNU/Linux	KVM (default)
	VirtualBox
Windows	Hyper-V (default)
	VirtualBox

The following procedures assume that the CDK is running on MacOS or GNU/Linux. Prepare the Minishift binary by renaming it to **`minishift`** and setting the execute permission using the **`chmod`** command. Run the following command to allow Minishift to do its required setup:

```
$ ./minishift setup-cdk
```

This command unpacks the RHEL 7 ISO file and OpenShift command line, **oc** , in the **~/.minishift/cache** directory. Make sure that **~/.minishift/cache/oc/v1.5.0** is in the environment **PATH** so that the OpenShift command-line interface can be executed. The version number in the path may vary with the specific version of the CDK.

The **./minishift config view** command shows all the properties that are set for the creation of the virtual machine and OpenShift cluster. To update values, use the **./minishift config set {property} {value}** command. The most common properties include:

- **vm-driver**

  Specify which virtual machine driver Minishift will use to create, run, and manage the VM in which Docker and OpenShift runs. See the documentation for valid values.

- **cpus**

  Specify the number of virtual CPUs the virtual machine will allocate.

- **memory**

  The amount of memory, in MB, that the virtual machine will allocate.

- **openshift-version**

  The specific version of OpenShift Origin to run. It is a string starting with the letter "v", for example, **v1.5.0**.

More options can be displayed with the **./minishift config** command.

To start an OpenShift cluster and create the virtual machine, run the following command:

```
$ ./minishift --username {RH-USERNAME} --password {RH-PASSWORD} start
Starting local OpenShift cluster using 'virtualbox' hypervisor...
-- Checking OpenShift client ... OK
-- Checking Docker client ... OK
-- Checking Docker version ... OK
-- Checking for existing OpenShift container ...
-- Checking for openshift/origin:v1.5.0 image ... OK
-- Checking Docker daemon configuration ... OK
-- Checking for available ports ... OK
-- Checking type of volume mount ...
Using Docker shared volumes for OpenShift volumes
-- Creating host directories ... OK
-- Finding server IP ...
Using 192.168.99.100 as the server IP
-- Starting OpenShift container ...
Starting OpenShift using container 'origin'
Waiting for API server to start listening
OpenShift server started
-- Removing temporary directory ... OK
-- Checking container networking ... OK
-- Server Information ...
OpenShift server started.
The server is accessible via web console at:
  https://192.168.99.100:8443

To login as administrator:
  oc login -u system:admin
```

The **RH-USERNAME** and **RH-PASSWORD** represent the user's Red Hat subscription credentials that allow Minishift to register the virtual machine to the Red Hat Customer Portal. These are required parameters and allow packages to be installed on the virtual machine. Developers can sign up for a developer account on the Red Hat Developer Program website.

The **oc** command can now be used to access the OpenShift cluster using the server address listed in the output of the **./minishift start** command. When the developer is finished with the cluster, the command **./minishift stop** can

Show with the cluster, the command ./minishift

be issued. To destroy the virtual machine and lose all work, run the **`./minishift delete`** command. If the developer needs access to the virtual machine directly, run the **`./minishift ssh`** command. To determine the status of the virtual machine, run the **`./minishift status`** command.

To launch the web console in the default browser, run the **`./minishift console`** command.