Tutorial 3 Minishift & python cgi with database

CSCI 4140: Open-Source Software Project Development Spring 2018



Outlines

- Minishift (a local version for openshift)
- Build source into image and database connection
- XAMPP (set up local server)
- Basic Python CGI programming with MySql



Minishift

- Why MiniShift?
 - OpenShift online (starter plan) can has only one project
 - It is better to test your application before pushing it online



• Minishift is a tool that helps you run OpenShift locally by running a single-node OpenShift cluster inside a VM.



Get started

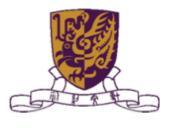
- Go to here (https://docs.openshift.org/latest/minishift/getting-started/installing.html) to choose the installer (including virtual machine and MiniShift)
- For mac (e.g.):
 - brew cask install minishift (it will install the command line tool as well)
 - \$ brew install docker-machine-driver-xhyve
 - \$ sudo chown root:wheel \$(brew --prefix)/opt/docker-machine-driver-xhyve/bin/docker-machine-driver-xhyve
 - \$ sudo chmod u+s \$(brew --prefix)/opt/docker-machine-driver-xhyve/bin/docker-machine-driver-xhyve

• After done, go to (https://docs.openshift.org/latest/minishift/getting-started/quickstart.html) for a quickstart.



Some key commands

- minishift start
- eval \$(minishift oc-env)
- oc login/logout
- oc new-project [your_code_url | -f local_template | image~your_code_url]
- oc new-app https://github.com/openshift/nodejs-ex -l name=myapp
- oc logs -f bc/nodejs-ex
- oc rsh [pod]
- minishift console
- minishift openshift service nodejs-ex --in-browser
- minishift stop



Some key commands

- oc <action> <object_type> <object_name>
 - oc describe svc docker-registry
 - oc get svc [service_name]
 - oc delete project [project_name]
- Object Types

Object Type	Abbreviated Version
build	
buildConfig	bc
deploymentConfig	dc
service	SVC
imageStream	is
•••	



Build source into image and database connection

Two examples for each topic

- https://github.com/OpenShiftDemos/os-sample-python
- https://blog.openshift.com/adding-database-openshift-online-3/
- Build source into image:
 - Set upr emvironment variable in .s2i/environment
 - (e.g.) oc new-app python:2.7~https://github.com/OpenShiftDemos/os-sample-python.git
- Database connection
 - Communicate to the database using environment variables (added in the Deploymentconfig)
 - (e.g.) oc env dc phpdatabase -e MYSQL_USER=myuser -e MYSQL_PASSWORD=mypassword -e MYSQL_DATABASE=mydatabase



XAMPP & MySql

- Simulate a web server locally on your computer
 - https://www.apachefriends.org/download.html
- Installing the MySQL Connector
 - https://dev.mysql.com/downloads/connector/python/
 - Note it supports python 2 only





Python cgi with database

- Start the http server and mysql server
- Several notes:
 - Make your script is executable (chmod 705)
 - Make sure the correct python address (#!usr/bin/python)
 - Place your codes in htdocs directory under XAMPP folder
- Python MySQL Database Access
 - https://www.tutorialspoint.com/python/python_database_access.htm
 - db = MySQLdb.connect("localhost","testuser","test123","TESTDB")
 - cursor = db.cursor()
 - sql = "sql commands"
 - cursor.execute(sql)
 - db.commit()
 - db.close()



Thanks for listening!

