

Tutorial 3

Minishift & python cgi with database

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WANG, Yue
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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 up environment 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 !

