Tutorial 3
Minishift & python cgi with database

CSCI 4140: Open-Source Software Project Development Spring 2018

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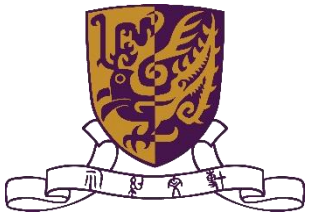
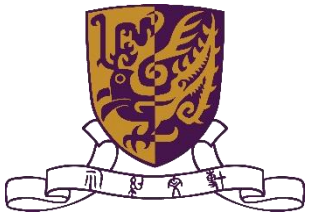


Outlines

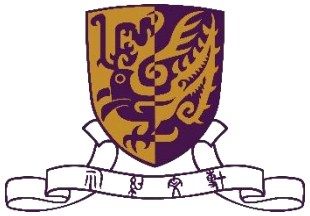
- Minishift (a local version for openshift)
- Build source into image and database connection
- XAMPP (set up local server)
- Basic Python CGI programming with MySql



Minishift

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

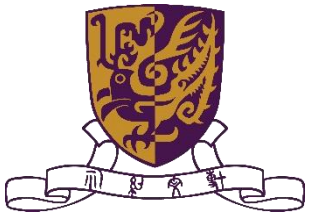
- Minishift is a tool that helps you run OpenShift locally by running a single-node OpenShift cluster inside a VM.



Get started

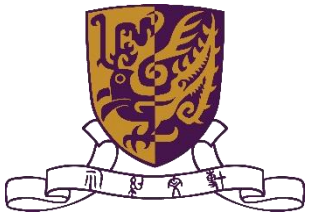
- Go to here (https://docs.openshift.org/latest/minishift/getting-started/installing.html) to choose the installer (including virtual machine and MiniShift)
- For mac (e.g.):
  - brew cask install minishift (it will install the command line tool as well)
  - $ brew install docker-machine-driver-xhyve
  - $ 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

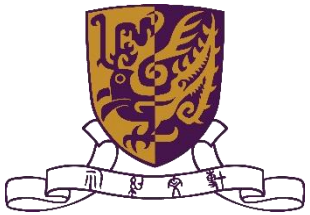
- minishift start
- eval $(minishift oc-env)
- oc login/logout
- oc new-project [project_name]
- oc new-app [your_code_url | -f local_template | image~your_code_url]
- oc logs -f bc/nodejs-ex
- oc rsh [pod]
- **minishift console**
- **minishift openshift service nodejs-ex --in-browser**
- minishift stop



Some key commands

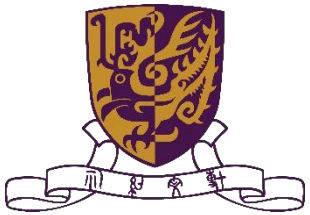
- oc <action> <object_type> <object_name>
  - oc describe svc docker-registry
  - oc get svc [service_name]
  - oc delete project [project_name]
- Object Types

Object Type	Abbreviated Version
build	
buildConfig	bc
deploymentConfig	dc
service	svc
imageStream	is
…	…



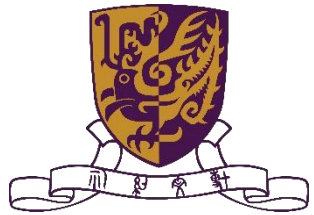
Build source into image and database connection

- 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



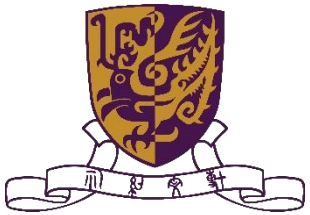
XAMPP & MySql

- 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
- Start the http server and mysql server



Python cgi with database

- 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
- Go to my github account to see examples for the demo (https://github.com/ayueei/demo_csci4140/tree/master/tutorial3)
- 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 !