Enterprise Application Development in the Cloud Workshop

Executive Deck v0.2

Introduction

- The next generation Development Platform for developing Enterprise Applications will be browser and cloud based.
- This Workshop will demonstrate what this Development Platform will look like and give students a hands on opportunity to experience this platform.
- The Development Platform will consist of the following components:
  - ★ Cloud based IDE - Codenvy
  - ★ Cloud based Development Runtimes - Codenvy
  - ★ Cloud based Production Runtimes - Microsoft Azure and/or Redhat OpenShift (on PaaS)
  - ★ Cloud based Source Control System - Github
  - ★ Cloud based Automated Build System - Redhat Openshift (using Jenkins)
  - ★ Cloud based DevOps Automation - Jenkins, JUnit, Maven, JMeter (using flood.io)

Student Learning Objectives

- The Workshop will focus on the following learning objectives:
  - ★ Teach students how to develop Enterprise Application using a Cloud based IDE
  - ★ Teach students how to deploy Enterprise Application to a PaaS Cloud
  - ★ Teach students how to build responsive applications using Bootstrap and Laravel Framework
  - ★ Teach students how to build REST based API's using Spring Framework, Java, and Tomcat/Wildfly
  - ★ Teach students how to build Performance Load Tests using JMeter and Flood.io
  - ★ Teach students how to apply DevOps automation principles using Maven, JUnit, and Jenkins

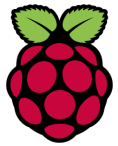
Student Learning Opportunities

- The Reference Architecture used in the Workshop demonstrates MANY programming languages, frameworks, and tools already taught to our students as part of the GCU CSET Computer Programming program.
- The Reference Architecture used in the Workshop will provide a fantastic learning opportunity for the students by gaining hands on expertise with a number of additional new technologies.

Apply Prior Learned Knowled
(Languages and Frameworks)

New Learning Opportunity:
(Languages and Frameworks)

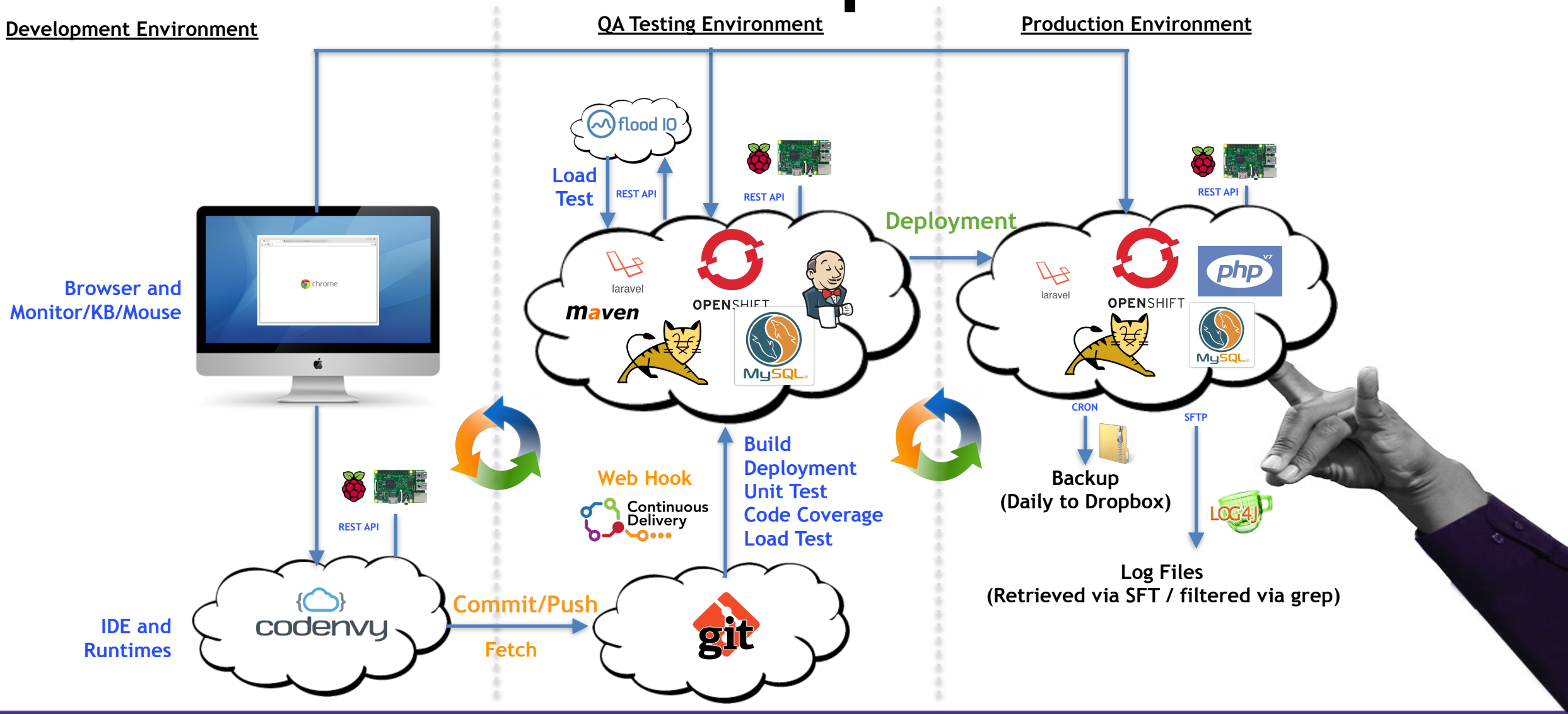
New Learning Opportunity:
(Cloud and Tools)



Student Activities

- The Workshop will be held as a series of weekly hands on Explore More sessions:
  - ★ Students will be given an introduction to the Reference Architecture and SDK
  - ★ Students will design and build the IoT back end based application using the Spring Framework
  - ★ Students will design and build the Reporting front end application using the Laravel framework
  - ★ Students will do all development in the Cloud using Codenvy and deploy to OpenShift/Azure:
    - ❖ A Github account can be setup for free
    - ❖ A Codenvy account can be setup for free
    - ❖ A Redhat OpenShift and Microsoft Azure developer account can be setup for free
    - ❖ The students will simply need a laptop with only a browser installed
    - ❖ Note: My Raspberry Pi and IoT application will be provided for use in the Workshop

Cloud Based Development Platform

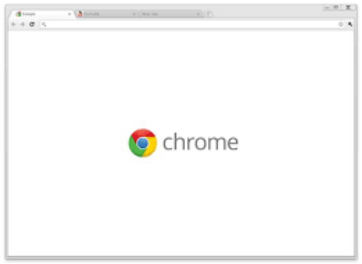


Physical Cloud Architecture

Client Tier

Raspberry Pi (for IoT Application)

Browser (for Client Application)

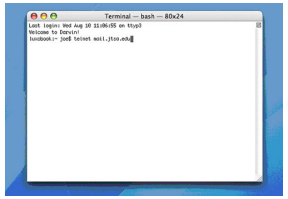


Server Monitoring

UptimeRobot

New Relic

SSH (for OpenShift Access)



Internet

HTTPS Port 443

HTTPS Port 443

SSH Port 22

Web-App Tier and Database Tier

Cloud PaaS Container

Apache Web Server

HTTP Port 8080

Tomcat

TCP Port 3306

MySQL

Cron Job

HA Enabled
2 CPU x 1G RAM

Powered By

OPENSHIFT Apache Tomcat MySQL

HTTPS Port 443

HTTPS Port 443

Cloud PaaS Container

Apache Web Server

HTTP Port 8080

PHP

HA Enabled
1 CPU x 1G RAM

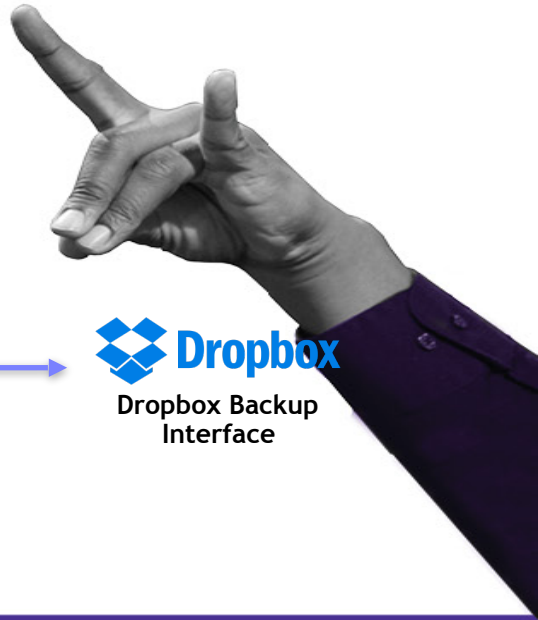
Powered By

OPENSHIFT php laravel

Internet

HTTPS Port 443

Integration Tier



Dropbox

Dropbox Backup Interface