On The Edge Software Consulting

Always On The Edge of Technology

Enterprise Application Development in the Cloud Workshop - Architecture Overview

v0.6

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 - Redhat OpenShift or Microsoft Azure or Google Cloud (on PaaS)
  - ★ Cloud based Source Control System - Github
  - ★ Cloud based Automated Build System - Redhat Openshift (using Jenkins or GitLab)
  - ★ Cloud based DevOps Automation - Jenkins or GitLab, JUnit, Maven, JMeter (using flood.io)

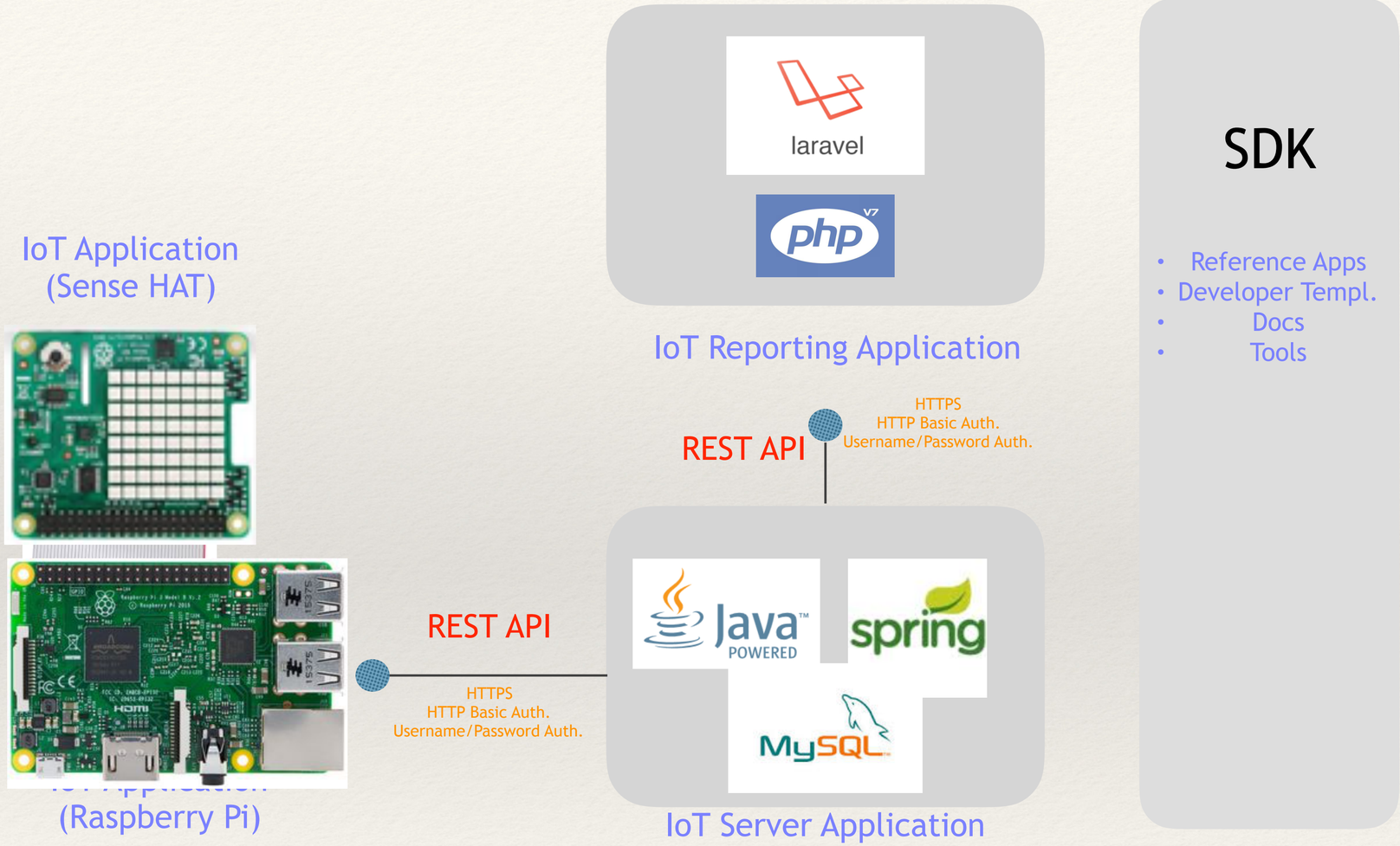
Reference Architecture and SDK

- The Workshop will leverage a Reference Architecture as a teaching tool:
  - ★ Fully functioning end to end system (using one IoT application and two enterprise applications)
  - ★ Applications written in Java and PHP (languages the students already know)
  - ★ Fully documented (providing an example of engineering rigor and discipline used to build a SDK)
  - ★ Will be used as guide and for a reference within the class materials
  - ★ Will provide the students with all the scaffolding to get their Cloud development started:
    - ✓ Spring Frame application template (can be cloned from a GIT repository)
    - ✓ Laravel Application application template (can be cloned from a GIT repository)
    - ✓ Requirements and Documentation
    - ✓ Step by step instructions for how to get started

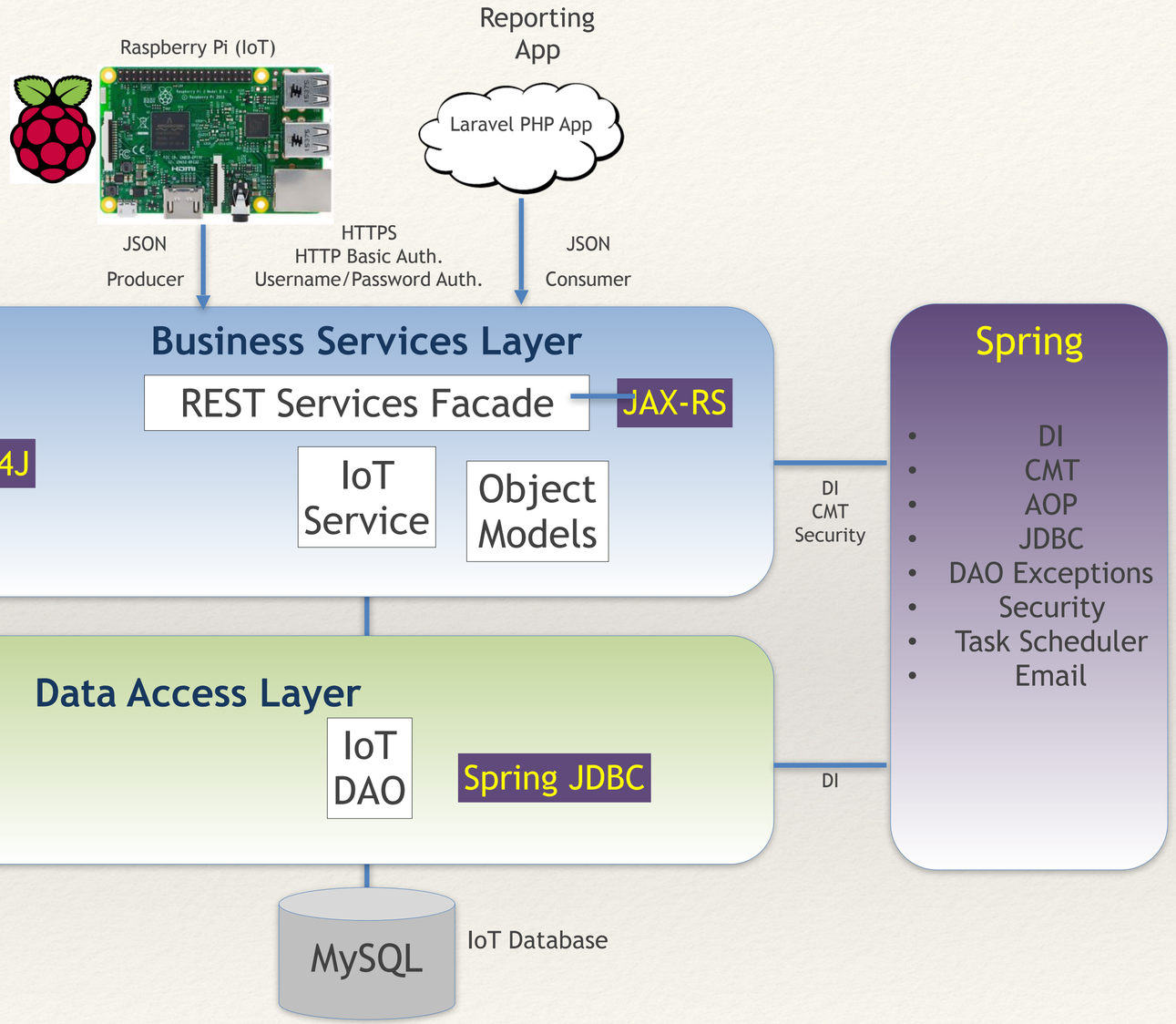
Reference Applications

- The following applications will be built in the Workshop using the Cloud based Development Platform:
  - ★ IoT Services App - Using Apache Tomcat or Redhat Wildfly or Apache Jetty written in Java leveraging JAX-RS, JSON, and the Spring Framework
  - ★ IoT Reporting App - Responsive browser based written in PHP leveraging Bootstrap (for responsive support), Guzzle (for HTTP Client for REST API), LavaCharts (for charting), and the Laravel Framework
    - ✳ An IoT App using a Raspberry Pi 3 written in Python consuming a REST API published on the IoT Server will be available for use in the Development Platform. The IoT application will be developed on the standard Raspberry Pi development environment outside of the Workshop.

IoT Logical Architecture

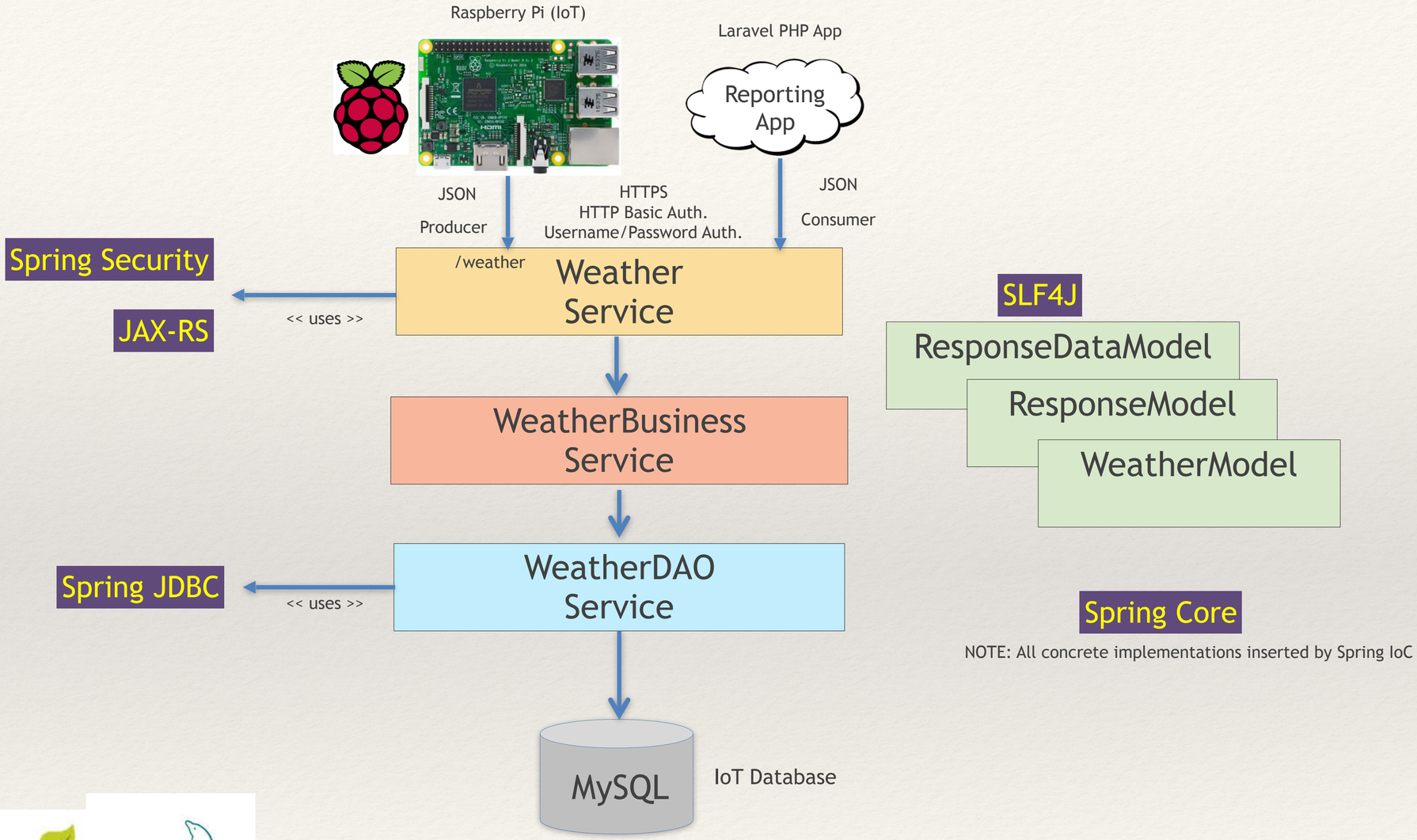


IoT Services Application Logical Architecture



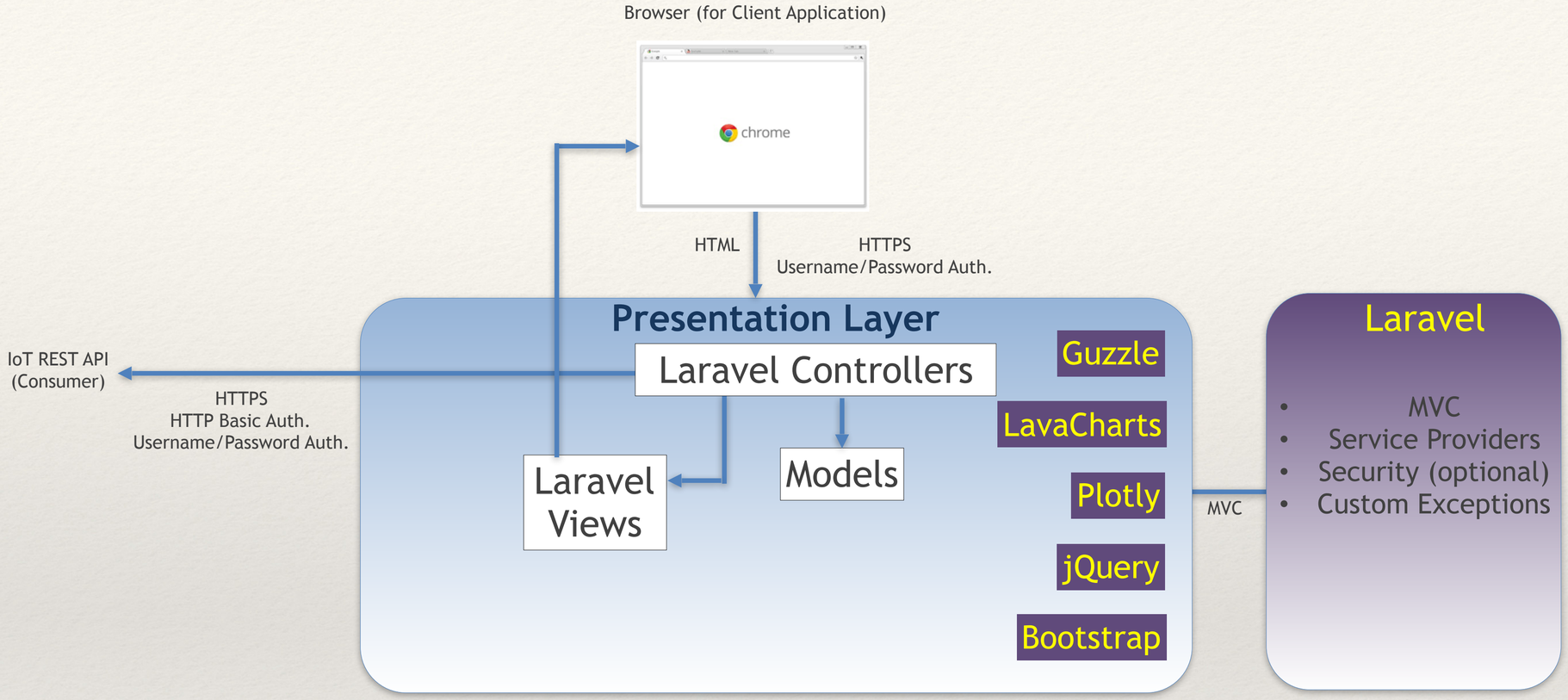
Powered By

IoT Services Application Logical Architecture



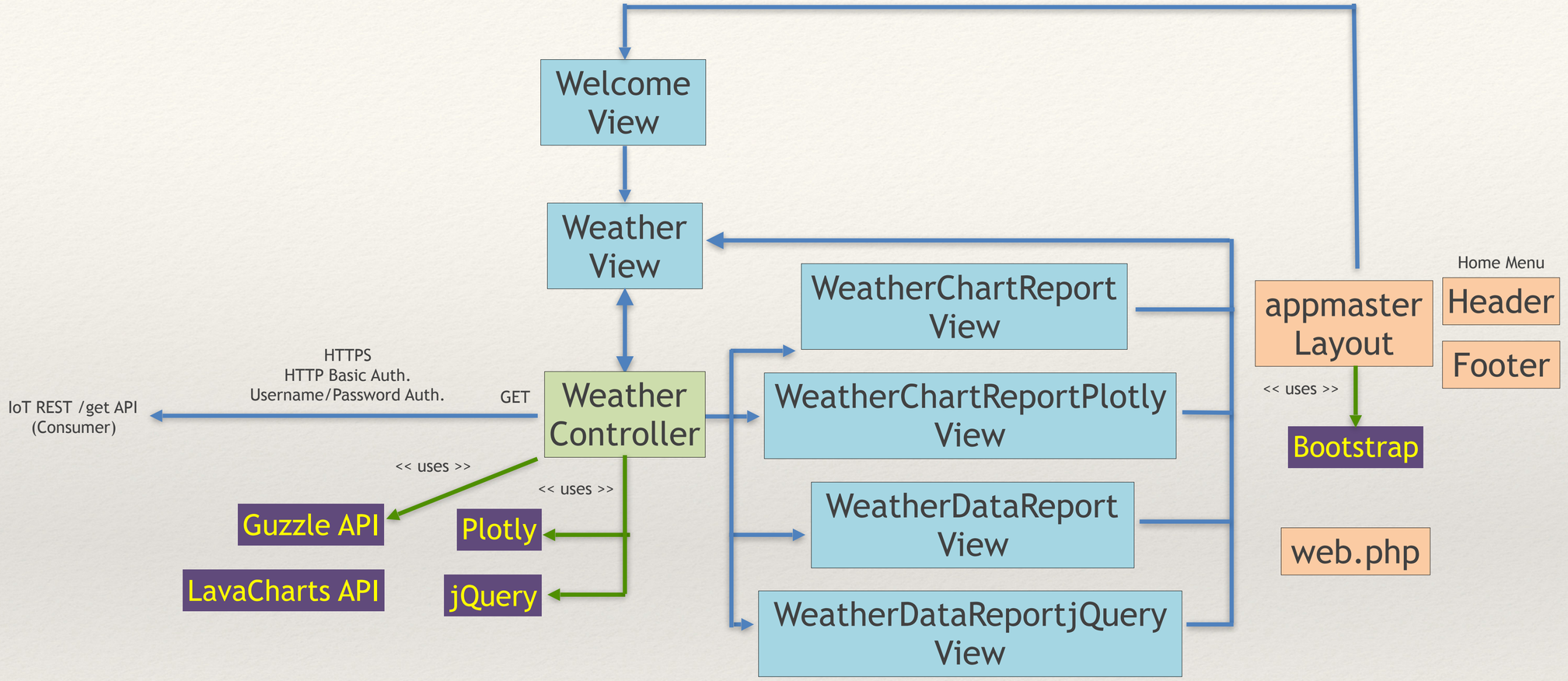
Powered By

IoT Reporting Application Logical Architecture



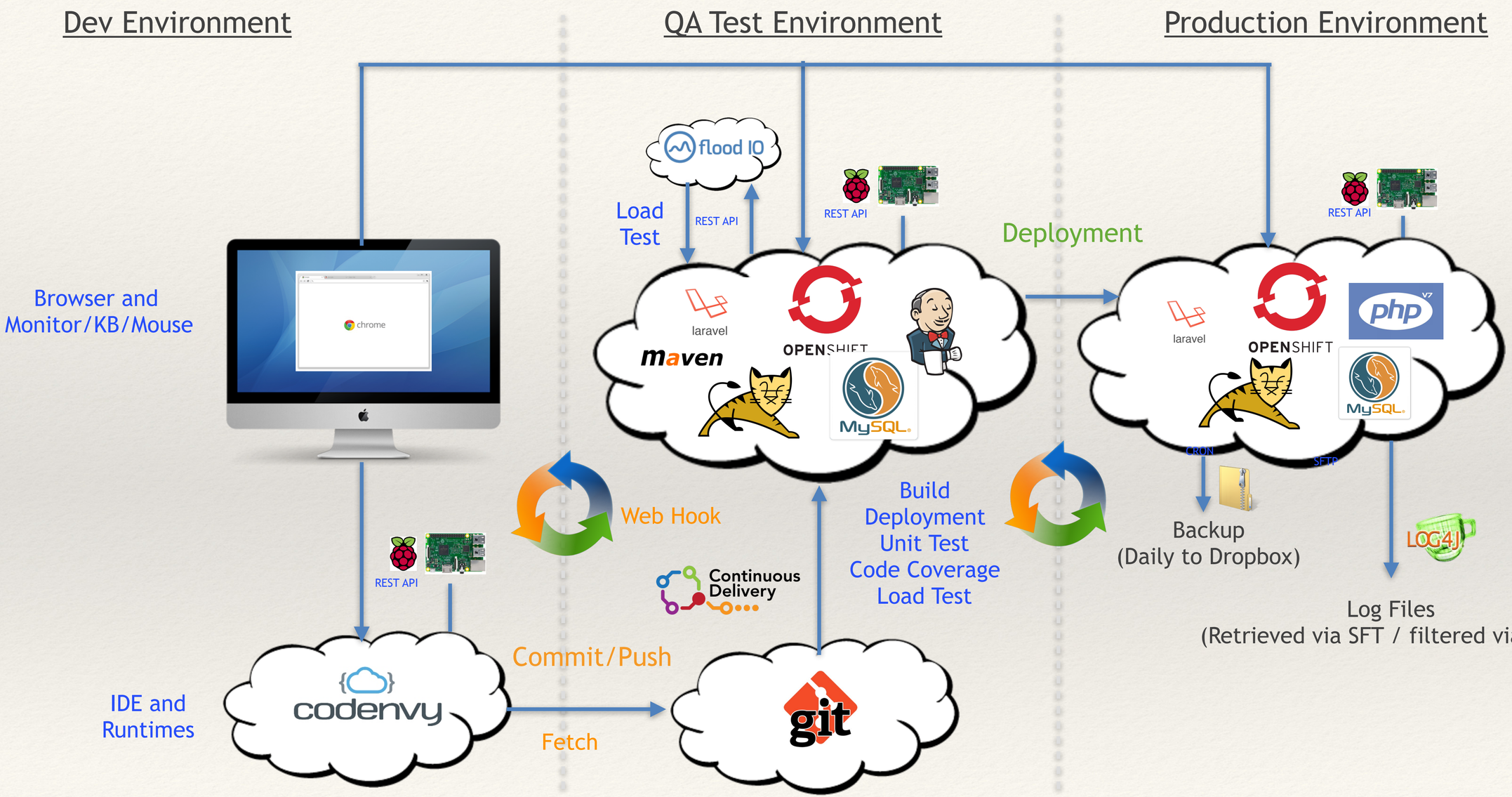
Powered By

IoT Reporting Application Logical Architecture

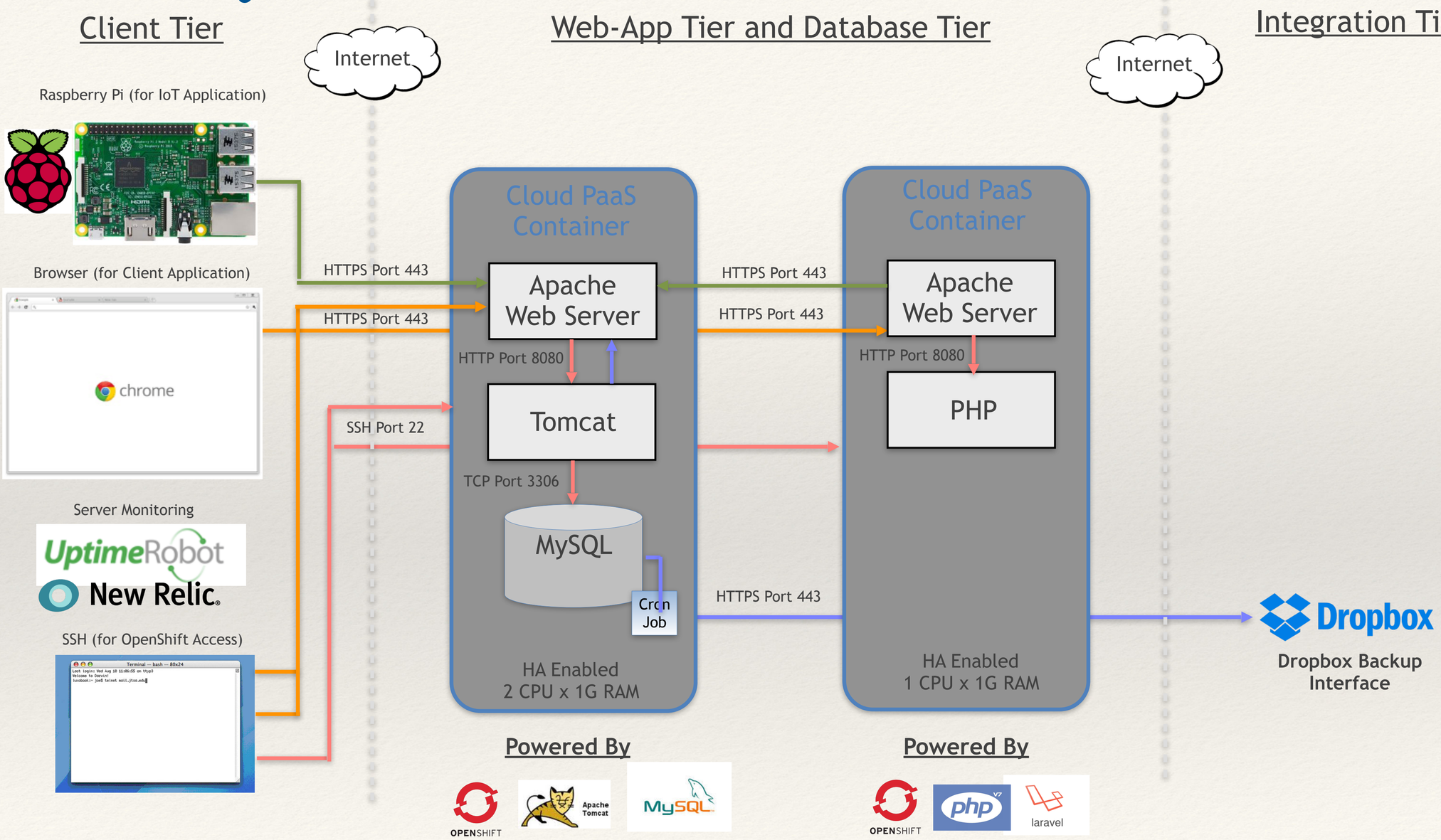


Powered By

Cloud Based Development Platform



Physical Cloud Architecture



DevOps Reference Architecture