OpenStack - Taiwan Hackathon Development Objective Description
“Future City”

By Taiwan OpenStack Community
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1. Date

- Start: 2016/03/18(Time: 17:30, registration start at 15:00)
- End: 2016/03/20(Time 17:30)

2. Target Audience

- Participants of March 2016 OpenStack Hackathon in Taiwan

3. Overview

- OpenStack is a unified suite of software tools used to build and manage public and private clouds suitable for a wide range of IT work loads. There are many components that create a cloud computing platform including compute, storage, networking, authentication, security, management and many more. The software is actively being developed by contributors and business from around the world with the current release, as of October 2015 being Liberty which is the 12th release.
- The OpenStack hackathon is an organized event for IT experts to collaborate in the development of a cloud-based application in support of the event’s target use case. The hackathon use case is currently under development but will incorporate a uniquely

Taiwan-centric project that encompasses innovation, scale, social, and mobility. The participating teams compete to produce an application that embodies the theme of the event and can comprise individuals from various disciplines such as cloud architects, programmers, graphic and interface designers.

4. Theme

- Future City -- Smart Commerce

5. Objectives

The OpenStack hackathon has five main objectives:

- Advocacy - we would like to promote the adoption of OpenStack and foster development efforts targeted for this platform,
- Education - provide a challenging environment that accelerates the learning and creativity required to build an OpenStack application,
- Build community of support and knowledge - provide a community of support that encourages innovative applications that take advantage of the efficiencies of cloud computing,
- Business networking and development by bringing together partners and developers to identify areas of mutual business opportunities;
- Generate a spirit of camaraderie through teamwork.
- The Taiwan OpenStack hackathon is planned for 18, 19, 20 March 2016. We intend to invite a wide range of participants to develop an application over a three day period. The application development objective will involve writing code that runs on an OpenStack system and will need to scale to support a potentially broad base of users. The target platform maybe some form of IoT (internet of things) or other intelligent consumer electronics that is mobile and social. The innovative application should harness the advantages of developing on a cloud computing platform. It is our goal to develop an application that may justify further refinement and customization either by the developing team or by the owner of the target development platform. The developers will all be given the same objectives, tools, and access the same resources. At the end of the three days each of the teams will be asked to present and demonstrate their application to a panel of judges.
- The judging panel will evaluate each of the submissions against an agreed set of criteria and award the top entrant.

6. Resources

- Venue - Open 24 hours

- Power - Free power supply. Standard Taiwanese power outlets. Bring your own adapter to convert the shape of your home power plugs to the shape of the outlets in the venue.
- Network - Free wired and wireless network onsite. Only one network cable for wired network at each desk, bring your own switch and cables if wired network is preferred.
- Food - Meals, drinks, and snacks provided throughout entire event
- Mentors - Mentoring desk will be set up in the venue. Mentor volunteers will be onsite from 9am-10pm during the event. 24 hours remote mentoring support is also available via IRC channel or Google hangouts chat room. (remote support time zone coverage: AUS, TW, India, Europe)
- Learning resources - Free training materials for you to learn beforehand about OpenStack and application development on top of it:
    - Documents
        - Write your first app guide
        - Sample for you
    - Videos
        - Devstack installation
        - OpenStack python SDK example
        - Openstack operations
- Training workshop - There will be pre-event tutorials hosted by local user community and OpenStack Foundation to offer attendees the opportunities to learn about:
    - Writing your first OpenStack application
    - Learning OpenStack SDK with examples
    - OpenStack dev environment setup
    - Basic Openstack operations
- Sessions during event
    - OpenStack Operation
    - Sahara
    - Swift
    - Murano
    - IOT
    - Big data analysis
    - III API session
- OpenStack cloud platform
    - Each team will be assigned cloud user credentials to access to cloud resources exclusive to each team.
    - Resource quotas for each team on the cloud platform:
        - 10 cores, 20GB ram, 400GB disk.
        - networks, volumes, keys, firewalls, security group and images.
    - OpenStack services available for each team:
        - OpenStack Horizon to provide each team the cloud platform dashboard
        - OpenStack Sahara service to create Hadoop VMs
        - OpenStack Heat service to auto orchestrate cloud resources
        - OpenStack Swift service as object storage to store data

- OpenStack SDKs. The following SDKs will be installed on cloud platform:
    - Curl command
    - JAVA
    - GO
    - Python
    - Android
    - .NET/C#
    - Node.js/JS
    - PHP
    - Ruby
- Reference resources:
    - 4G smart commerce use case
- Open datasets:
    -
- Available devices:
    - MTK 7688

7. Development Environment

- OpenStack cloud platform specification
    - Openstack platform
        - version: Kilo
        - Provide services: nova, neutron, cinder, glance, heat, swift, sahara, ceilometer, keystone, murano, horizon
        - Deploy tool: Fuel 7.0
        - Hypervisor: KVM
        - Account:
            - One account per team
            - In separated tenant
            - With separate environment for each account
        - [Doc]: Simple Operation guide
            - Origin
                - End User Guide
            - Other
                - [Mandarin]Unofficial User Guide
- Software specification
    - Hadoop
    - OpenStack SDK
        - Master version of SDK
        - Beware that some SDK may still contain bugs that requiring to be fixed
- Device configuration
    - MTK 7688 with default setting

8. Judging

- Judging process
    - Judging template form will be provided
    -
- Judging criteria

  Applications will be judged based on the criteria below and weighted accordingly:
    - Technical (40% the weights should be discussed)
        - OpenStack usage (API, components, etc)
        - Scalability
        - Automation
        - Modularity
        - Technical difficulty
        - Software architecture design
        - System performance
    - Design (40% the weights should be discussed)
        - Innovation
        - Impressiveness
        - Future city theme involvement (data collaboration)
        - Practicality
    - Demos (20% the weights should be discussed)
        - Short demos, no more than five minutes per hack including questions.

- Rewards
    - All expense paid round-trip ticket to OpenStack Summit (Austin, TX, USA)
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9. Q&A

Terminology used in this document

Additional Resources

Pre-Hackathon

Homework

Test platform

What You can bring

- Your own devices
- Anything that make you happy during hacking for this three days(Only if it won't affect others)

What you can not bring

- Any unfriendly items or controlled items

Keeping it fair for everyone

- Fair resources
    - Each team will provide with same resource set. Same specs of environments.
- Fair Judgement
    - We have a group of professional judge from all different region. With judge guide provided to judges, we can make judges able to make more unified judgements.
- Fair Start Point
    - We shall also judge on the works that each team input through these three days. We discourage any team bring their previous works to the event and only trying to win the result without doing any improvement on it.