



# openSUSE でおうちクラウド @openSUSE mini Summit 2018

Masayuki Igawa

masayuki@igawa.io

masayukig on Freenode, GitHub,  
Twitter, LinkedIn

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<https://github.com/masayukig/cheap-cloud>

# Agenda

- ▶ Who I am?
- ▶ What is “the OpenStack”?
- ▶ What I did
- ▶ Why do I need it?
- ▶ How to build it?
- ▶ Benefits
- ▶ Issues
- ▶ Conclusion
- ▶ Demo

## DISCLAIMER

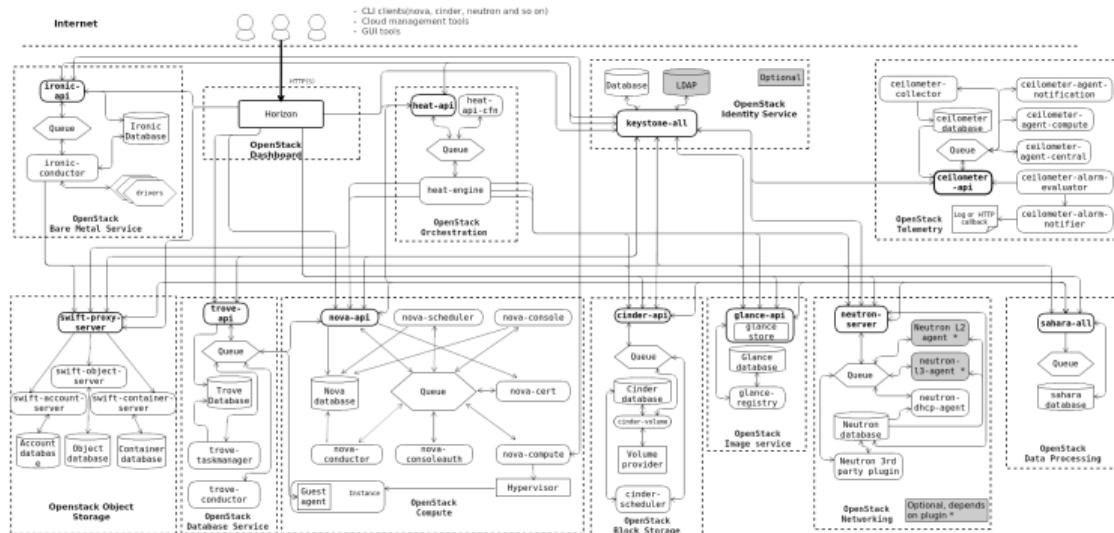
These slides are my own opinion

# Who I am?

- ▶ Company : 2017.3- SUSE/Novell Japan
  - ▶ SUSE OpenStack Cloud QE(Quality Engineering) Team (I'm the only one person who are in Japan and Japanese)  
“SUSE Acquires OpenStack IaaS and Cloud Foundry PaaS Talent and Technology Assets from HPE to Accelerate Growth and Entry into New Markets”
- ▶ Job: Senior Software Engineer/Open Source Programmer
  - ▶ OpenStack QA Up/Downstream development, Core Reviewer  
(Tempest, OpenStack-Health, Subunit2SQL, Stackvizi)
  - ▶ stackalytics.com/?user\_id=igawa
  - ▶ github.com/masayukig
- ▶ Books
  - ▶ OpenStack Cloud Integration (OpenStack クラウドインテグレーション (オープンソースクラウドによるサービス構築入門))
  - ▶ Infra CI Pragmatic Guide (インフラ CI 実践ガイド (Ansible/GitLabを使ったインフラ改善サイクルの実現)) (as a reviewer)

# What is “the OpenStack”?

- Open Source Cloud OS Software: Apache License Version 2.0
- Written in Python
- There are a lot of ‘OpenStack’ projects: 65 projects(2018-06-18)
- Released every 6 month: Latest version is called ‘Queens’
- Users: AT&T, AA, BBVA, Bloomberg, CERN, China Mobile, Gap, VEXXHOST, Volkswagen, WALMART, etc.. <https://www.openstack.org/user-stories/>



## What I did

- ▶ Got 1U servers \* 3
- ▶ Set up the servers
- ▶ Installed openSUSE
- ▶ Installed OpenStack
- ▶ Using VMs

# Why do I need the private Cloud?

- ▶ Very Good Excercise to learn Computer, Network, Storage
- ▶ Understand the Cloud architecture
- ▶ Use VMs for sandboxes such as k8s, mesos, etc.
- ▶ **FUN!!**

# How to get cheap servers?

# Yahoo! Auction



すべてのカテゴリ > コンピュータ

## ▼ カテゴリ

コンピュータ (706)

周辺機器 (331)

モニタ (106)

サブノート (136)

ノート (51)

デスク (1)

パソコン (27)

ワームストーナン (11)

▼ 価格帯

~13,999円 (30)

14,000円~27,999円 (94)

28,000円~53,999円 (24)

54,000円~79,999円 (10)

80,000円~237,999円 (16)

238,000円~504,999円 (1)

価格帯

円

青色表示

緑色表示

▼ 価格帯

すべての条件から絞る

## ▼ オクション

NOW

決済保証

送り手登録

コメント返信

## ▼ 出品者

すべてのストア (1人)

出品者登録 (0人)

青色

緑色

すべての検索条件を表示

保存された検索条件

ログインして検索条件を保存

削除することもできます

検索の検索条件を表示

保存した検索条件を表示

1~20件目

おすすめ順 売先価格 購入者名 入札 戻り状態

お気に入り

# ヤフオク!

ログイン  
IDでもっと便利に新規取得

フリマ オークション すべて

1u

すべてのカテゴリ > コンピュータ > サーバー

検索条件 この条件を保存

## ▼ カテゴリ

解除

コンピュータ

サーバー (145)

サーバー本体 (134)

サーバーラック (7)

その他 (4)

検索結果 約145件

検索対象: タイトル キーワード: 1u X

1u ラック luxman p-1u p-lu wh-1u で検索

落札相場を調べる おすすめ順とは?

お気に入り

# Get 1U servers \* 3

## ► Yahoo! Auction!!

Dell PowerEdge R410 \* 3: 59.58k JPY

☆Dell PowerEdge R410 [2\*X L5640-2.27GHz(6C)/32GB/2\*250GB] !

落札価格: **18,520 円**

入札件数: **18** (入札履歴)

残り時間	終了
入札単位	500円
商品状態	中古
終了日時	2017年9月18日 22時59分

1U, Xeon L5640(6cores \* 2CPU HT), 32GB RAM, 250GB HDD\*2  
(Cost: 18.52k JPY \* 3 servers = 55.56k, 4.02k (for a rental car))

# Install the servers

## Problem

- ▶ Stack on the floor? -> Hard to move
- ▶ Rack? -> Too expensive

LackRack: <https://wiki.eth0.nl/index.php/LackRack>



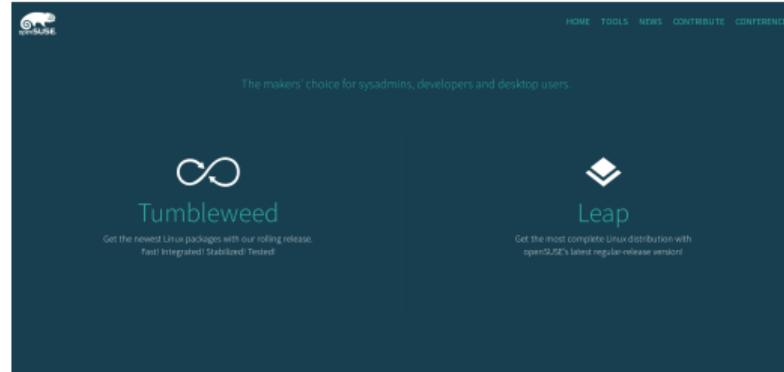
# Implemented



# Install openSUSE

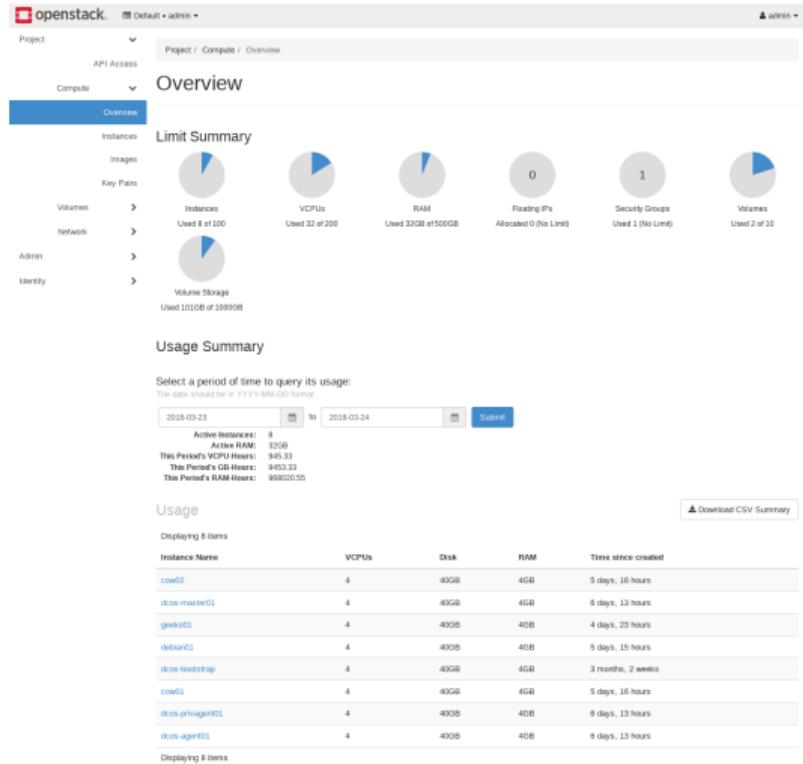
No automation such as autoyast, ansible, puppet, etc

- ▶ Download image and burn it to a USB stick  
(<https://software.opensuse.org/distributions/leap>)
- ▶ Install from that media
- ▶ Update it to the latest: \$ sudo zypper dup

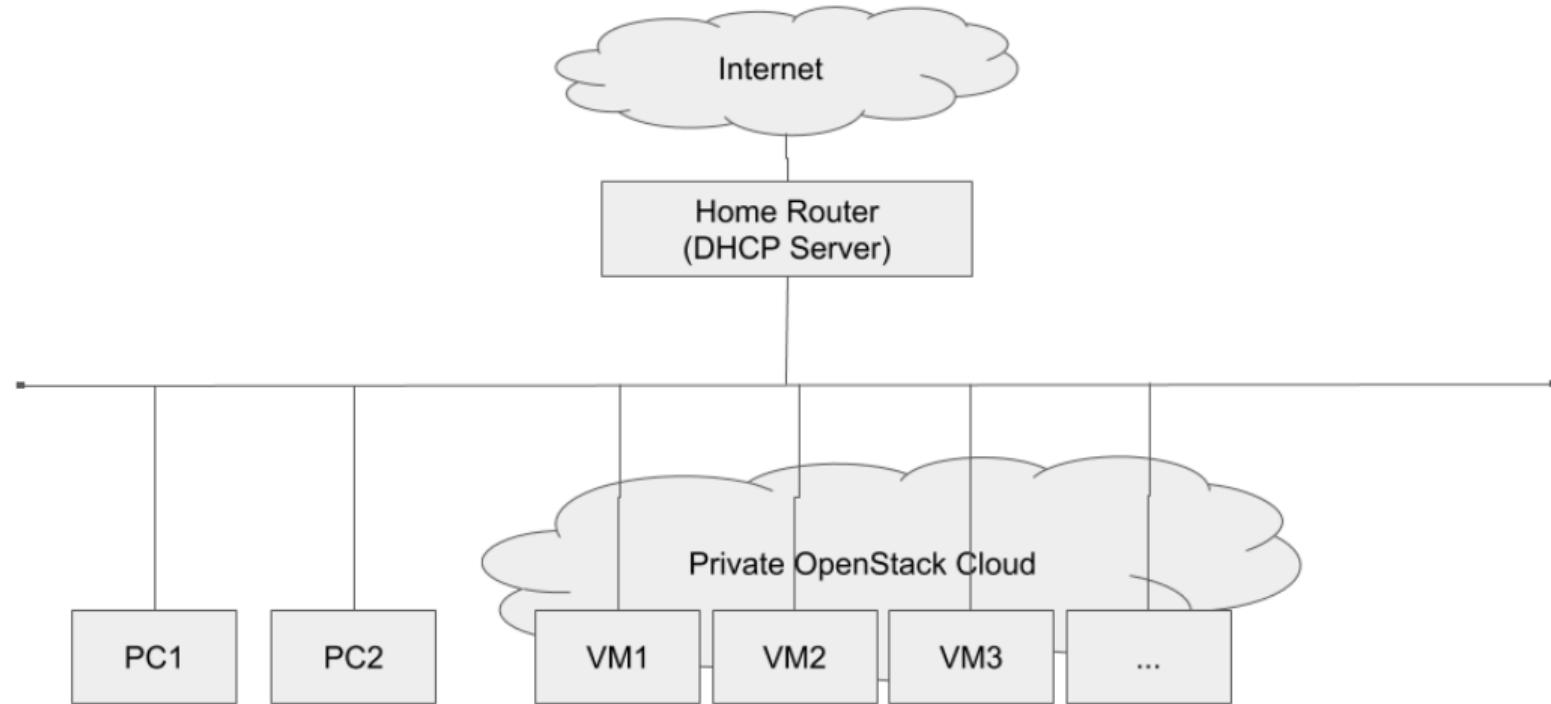


# Install OpenStack: Use openSUSE rpm packages

- ▶ Read the Doc (e.g. <https://docs.openstack.org/install-guide/>)
- ▶ Install from the openSUSE repo
- ▶ Configure



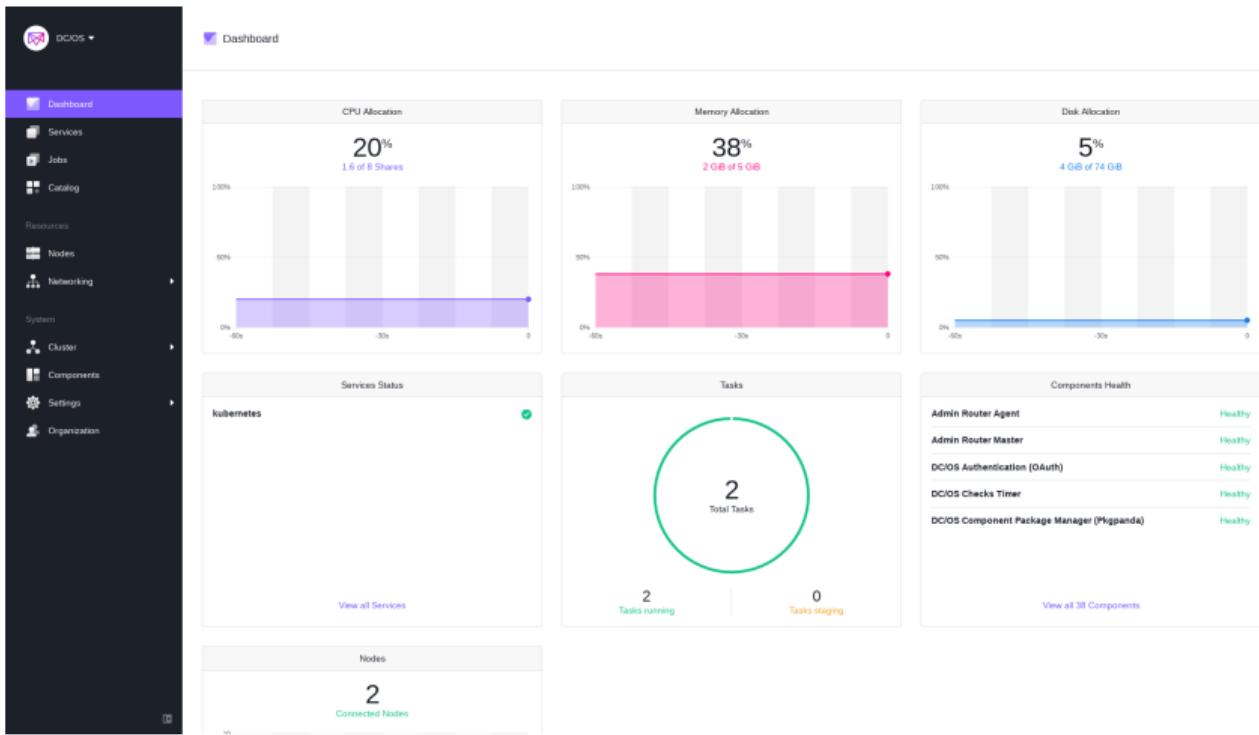
# My Cloud Network



# Update OpenStack

- ▶ Update the repo and just zypper update
- ▶ **No configuration change!**

# Use VMs: Mesos DC/OS



# Use VMs: Rancher

The screenshot shows the Rancher interface with two hosts listed:

- Host 1: cow01.novalocal**
  - IP: 172.17.0.1 | Version: 17.09.1-ce
  - OS: RancherOSv1.3.0-rc1 (4.15.9)
  - CPU: 4x3.4 GHz | RAM: 3.85 GiB | Storage: 7.43 GiB
  - Stack: healthcheck**
    - ..healthcheck-1 IP: 10.42.177.204
  - Stack: ipsec**
    - ..cni-driver-1 None
    - ..ipsec-1 IP: 10.42.101.159
    - Sidekicks**: ..cni-driver-2 (None), ..ipsec-2 IP: 10.42.59.40
- Host 2: cow02.novalocal**
  - IP: 10.0.0.63 | Version: 17.09.1-ce
  - OS: RancherOSv1.3.0-rc1 (4.15.9)
  - CPU: 4x3.4 GHz | RAM: 3.85 GiB | Storage: 7.43 GiB
  - Stack: ipsec**
    - ..cni-driver-2 None
    - ..ipsec-2 IP: 10.42.59.40
    - Sidekicks**: ..cni-driver-2 (None), ..ipsec-2 IP: 10.42.59.40
  - Namespace: kube-system**
    - tiller-deploy-cc9... Failed to find lab...
    - Containers**: ..tiller-deploy-cc9... (Warning)

# Benefits

- ▶ Free to use!!!
- ▶ Low Cost to start
- ▶ Powerful
- ▶ Low Network Latency
- ▶ Warm (in winter)

## Issues

- ▶ Electricity cost: 10,000 JPY/month (Expensive)
- ▶ Noise (Imagin a server room)
- ▶ Space (Expensive in Tokyo)
- ▶ Failures (HDD, Power Unit... Expensive)
- ▶ Abandonment (Expensive)

## Demo (if possible...)

- ▶ Boot an Instance or Cloud Native something?

## Future work

- ▶ Replace the broken HDD to SSD (WIP)
- ▶ Upgrade openSUSE to Leap 15.0 (WIP)
- ▶ Use a RaspberryPi as a controller node
- ▶ Automation

# Conclusion

- ▶ Initial cost can be low but **EXPENSIVE** to maintain and **NOISY**
- ▶ Freedom of cloud usage
- ▶ Own physical servers and play with it is super **FUN!**