

Bolted System: Auto-deployment Cloud Project (Sprint 5)

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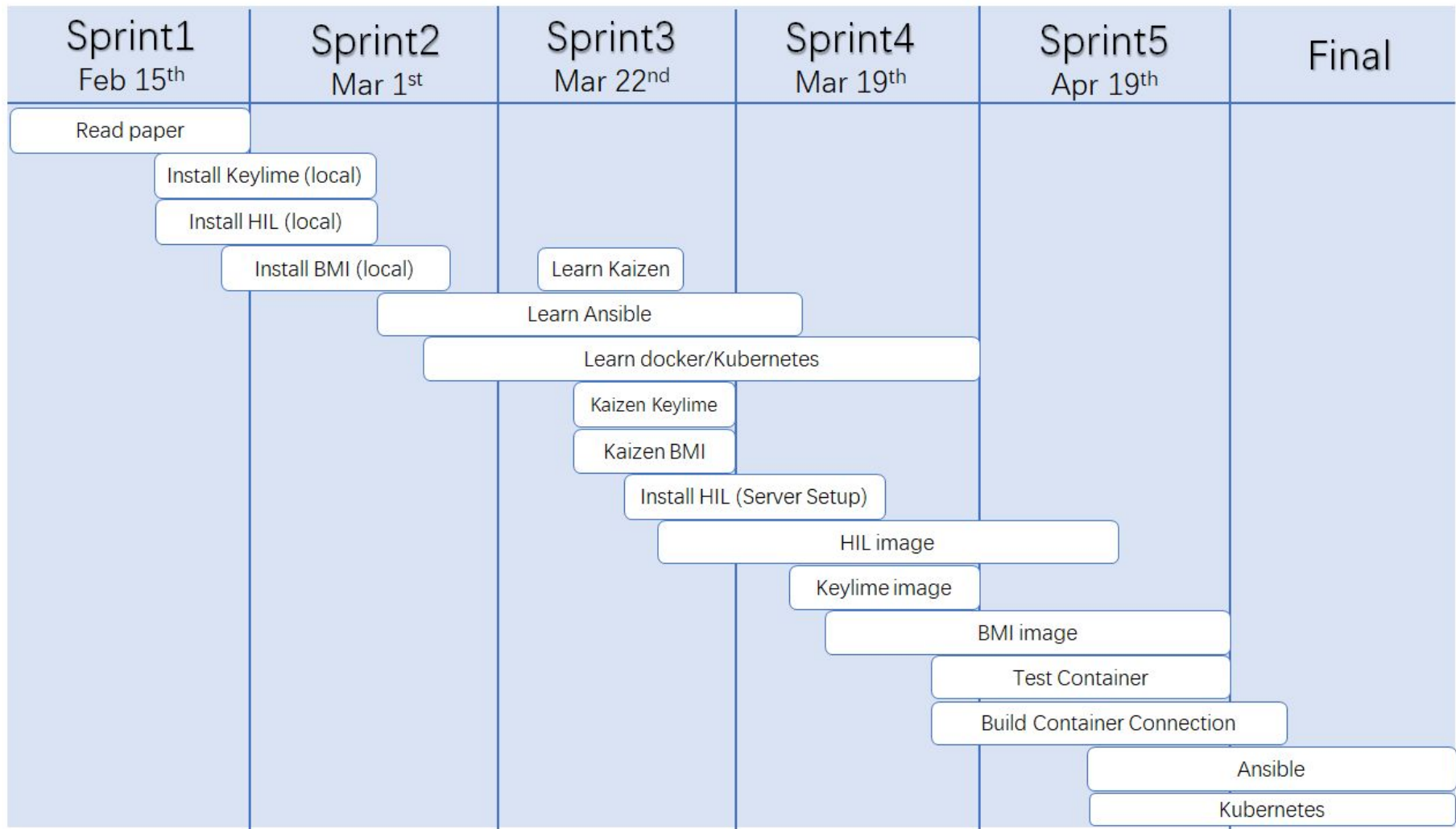
Jiangnan Zou

Project Description (Recap)

Automate the deployment of Bolted which consists of:

- Container image of each component of the Bolted system (HIL, BMI, Keylime and orchestration)
- Automated deployment of component containers on a cloud platform

Project Plan

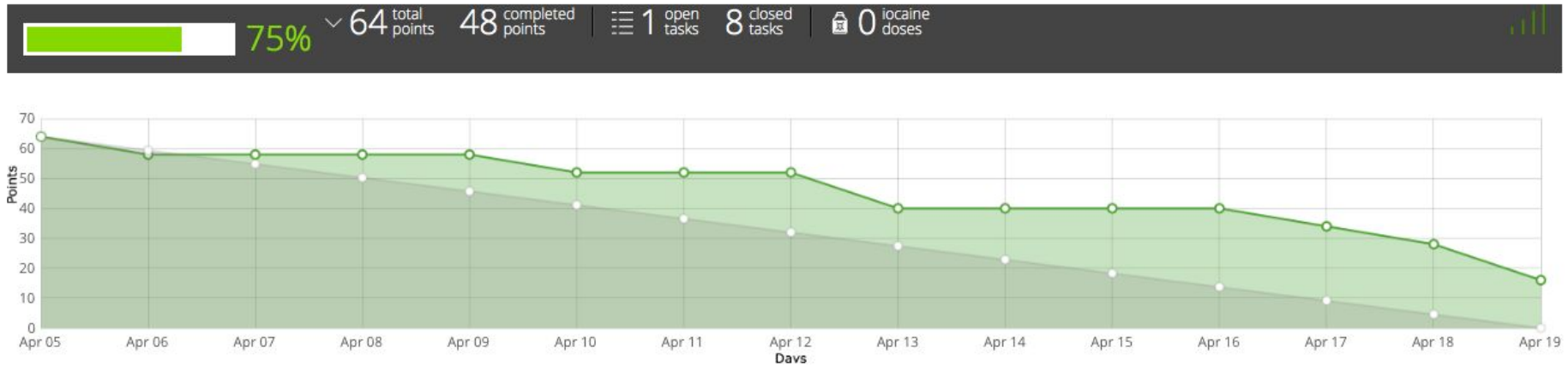


Last Sprint Report

- Finished building container image of HIL and BMI, now these two are under testing
- Learning and installing Kubernetes (In Progress)
- Found a solution to deploy containers automatically using Ansible as deployment method
- Built necessary connection between components (BMI & HIL, BMI & Ceph, HIL Servers and etc)
- Tested Keylime running on multiple VMs
- Tested HIL and BMI containers running on multiple VMs

Burndown Chart

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Project Progress (BMI)

- Finished deploying ceph server on Kaizen
 - One-node ceph for testing purpose
- Finished deploying BMI container on Kaizen
 - Require further configuration
 - Finished configuring ISCSI, DHCP, Sqlite3
 - Problem: Local or
- Established connection between BMI and ceph
- Have settled most of the configuration problem
- 90%

Project Progress (HIL)

Solution for HIL servers is using two containers to fulfill the requirements that HIL needs to run its server.

- PostgreSQL container as hil database server
- Apache/httpd container as hil wsgi apache server and network server

Two containers are built separately under the same LAN environment as HIL server

Project Progress (Ansible)



ANSIBLE

Basic concept

- **Ansible** is software that automates software provisioning, **configuration management**, and application deployment.
- **configuration management**: Manage software on top of hardware.
- Features:
 - Agentless
 - Build on top of Python
 - Use ssh for secure connection
 - Push based architecture
 - Simply
- Write playbook ---> Run playbook



Host inventory

- Contains list of hosts, grouped together.
- Default location is

/etc/ansible/hosts

Installation

- `sudo pip install ansible`
- On RedHat/CentOS systems, python-pip and ansible are available via the EPEL repository
- `rpm -ivh`
http://dl.fedoraproject.org/pub/epel/7/x86_64/



Project Progress (Ansible)



ANSIBLE

Ping Pong between VMs

- Success ping between to VM.

```
[root@vm007 ~]# ping 10.0.0.9
PING 10.0.0.9 (10.0.0.9) 56(84) bytes of data.
64 bytes from 10.0.0.9: icmp_seq=1 ttl=64 time=2.05 ms
64 bytes from 10.0.0.9: icmp_seq=2 ttl=64 time=0.624 ms
64 bytes from 10.0.0.9: icmp_seq=3 ttl=64 time=0.538 ms
64 bytes from 10.0.0.9: icmp_seq=4 ttl=64 time=0.662 ms
64 bytes from 10.0.0.9: icmp_seq=5 ttl=64 time=0.478 ms
^C
--- 10.0.0.9 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4001ms
rtt min/avg/max/mdev = 0.478/0.872/2.059/0.597 ms
```

- Still unable to ping using ansible command

```
[root@vm007 ~]# ansible -m ping 10.0.0.9
10.0.0.9 | UNREACHABLE! => {
  "changed": false,
  "msg": "Failed to connect to the host via ssh: Permission denied (publickey,
gssapi-keyex,gssapi-with-mic).\r\n",
  "unreachable": true
}
```

Ansible playbook

- Written in YAML

```
---
- hosts: vm007
  user: root
  vars:
    motd_welcome: 'welcome to centos007\n'
  tasks:
    - name: sample motd
      copy:
        dest: /etc/motd
        content: "{{motd_welcome}}"
```

- No syntax error. Run failed due to previous reason

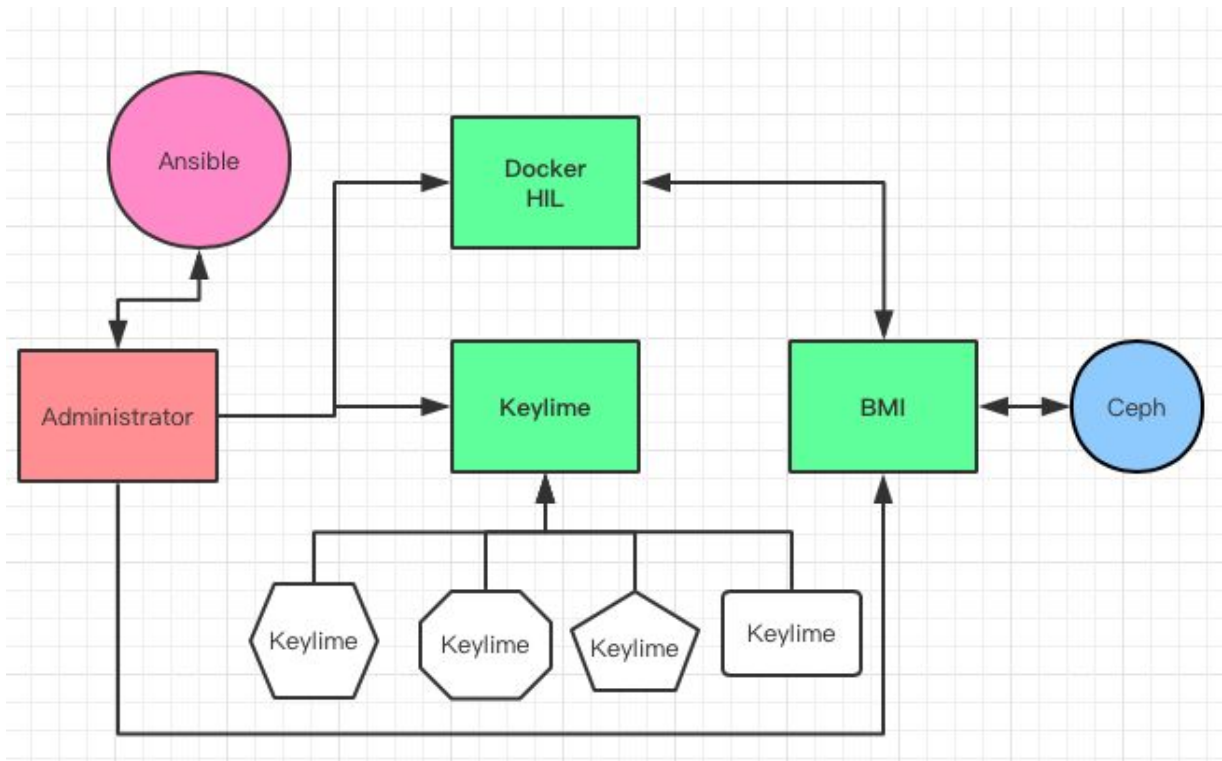
```
PLAY [vm007] *****
skipping: no hosts matched

PLAY RECAP *****
```

Project Progress (Kubernetes)

Demo

User Scenario



Responsibilities for next sprint

- Test and maintain container image for deploy
- An automated ansible script for installation of docker, HIL server, BMI server, Keylime server onto each VM from an admin VM for testing automated deploy
- Automate configuration between each component on Ansible Playbook based on user scenario

Thank you

Question ?