Private cloud lab with OpenStack, Ansible, and CloudForms

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WHAT IS PRIVATE CLOUD?
WHEN YOU WANT IT TO BE YOURS... ALL YOURS

☑ Provides public cloud-like automation and infrastructure on-premises
☑ Scales IT resources on demand to meet user demand
☑ Includes core compute, storage, and networking resources *(and more)*
☑ Standardizes on a single IT infrastructure among multiple business units
☑ Provides a foundation for modern, web-scale applications and containers
COMPONENTS OF A PRIVATE CLOUD
AND THIS IS JUST ONE OF THE POSSIBILITIES...

A cloud computing platform that virtualizes resources from industry-standard hardware, organizes those resources into clouds, and manages them so users can access what they need—when they need it.

An infrastructure management platform that allows IT departments to control users’ self-service abilities to provision, manage, and ensure compliance across virtual machines and private clouds.

An enterprise framework for controlling, securing, and managing Ansible automation with a user interface (UI) and RESTful application programming interface (API). It helps users scale IT automation, manage complex deployments, and accelerate productivity.
WHAT IS OPENSTACK?

Programmable infrastructure that lays a common set of APIs on top of compute, networking and storage

One platform for virtual machines and bare metal
AN EVOLUTIONARY PATH TO HYBRID CLOUD

VIRTUALIZATION
- VMware
- Microsoft Hyper-V
- Red Hat Virtualization

PRIVATE CLOUD
- Red Hat Openstack Platform

PUBLIC CLOUD
- Amazon Web Services
- Microsoft Azure

Service Management
Compliance & Governance
Efficiency & Optimization

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CLOUDFORMS FEATURES

AGENTLESS
EASY DEPLOYMENT

ANSIBLE AUTOMATION
SIMPLE, POWERFUL, AGENTLESS

MULTI-TENANCY AND RBAC
SEGMENT USER ACCESS, FINE GRAINED ACCESS CONTROL

CONTINUOUS DISCOVERY
BROWN-FIELD MANAGEMENT, INTEROPERATES WITH OTHER MGMT

VIRTUAL APPLIANCE
EASY INSTALL, EASY MAINTENANCE

FEDERATED GLOBAL DEPLOYMENTS
HIGHLY SCALABLE, HIGHLY AVAILABLE MULTI-REGION DEPLOYMENTS
Ansible Tower is a UI and RESTful API allowing you to scale IT automation, manage complex deployments and speed productivity.

- Role-based access control
- Deploy entire applications with push-button deployment access
- All automations are centrally logged
- Powerful workflows match your IT processes
RBAC
Allow restricting playbook access to authorized users. One team can use playbooks in check mode (read-only) while others have full administrative abilities.

PUSH BUTTON
An intuitive user interface experience makes it easy for novice users to execute playbooks you allow them access to.

RESTful API
With an API first mentality every feature and function of Tower can be API driven. Allow seamless integration with other tools like ServiceNow and Infoblox.

WORKFLOWS
Ansible Tower's multi-playbook workflows chain any number of playbooks, regardless of whether they use different inventories, run as different users, run at once or utilize different credentials.

ENTERPRISE INTEGRATIONS

CENTRALIZED LOGGING
All automation activity is securely logged. Who ran it, how they customized it, what it did, where it happened - all securely stored and viewable later, or exported through Ansible Tower's API.
- name: install and start apache
  hosts: web
  become: yes
  vars:
    http_port: 80

  tasks:
  - name: httpd package is present
    yum:
      name: httpd
      state: latest

  - name: latest index.html file is present
    copy:
      src: files/index.html
      dest: /var/www/html/

  - name: httpd is started
    service:
      name: httpd
      state: started
SO WHAT? AND THE LAB?
LAB ENVIRONMENT

Workstation (jump box)

RED HAT CLOUDFORMS

CloudForms Management Engine
CloudForms Database

RED HAT ANSIBLE Tower

External Networks

OpenStack Director (lifecycle management)
OpenStack Controller
OpenStack Compute (x2)

RED HAT OPENSTACK PLATFORM

Internal API & Cluster Mgmt
Provisioning Network

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# LAB TASKS OVERVIEW

<table>
<thead>
<tr>
<th>LAB 1</th>
<th>You’ll use Red Hat OpenStack Platform Dashboard to create virtual instances</th>
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</thead>
<tbody>
<tr>
<td>LAB 2</td>
<td>You’ll verify Red Hat OpenStack Platform multi-tenancy capabilities</td>
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<tr>
<td>LAB 3</td>
<td>You’ll use Red Hat CloudForms to manage OpenStack and create virtual instances</td>
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<tr>
<td>LAB 4</td>
<td>You’ll use Ansible Tower install software and apply configurations to a virtual instance</td>
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<tr>
<td>LAB 5</td>
<td>You’ll configure a Service Catalog item in CloudForms which will allow you to deploy an application through the creation of a virtual instance in OpenStack and apply configuration to it using Ansible Tower, all in one step.</td>
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</tbody>
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LET’S GET STARTED!

Lab instructions:  
http://tinyurl.com/privatecloudlab

Lab name:  
T02098 - Private Cloud lab with OpenStack, Ansible, and CloudForms

Activation Key: privatecloud  
Provide this key when requested by instructions
FINAL TASK:

FILL IN EVALUATION FORM IN RED HAT SUMMIT APP, DO IT NOW!

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THANK YOU

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