Automating your hybrid cloud management using ansible

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Agenda

- Hybrid cloud management brief
  - Hybrid cloud is future IT infrastructure
  - Much come complexity in hybrid & multi cloud management.
  - Automation is super important
- Ansible Overview
  - What’s Ansible
  - Ansible supported features matrix in public cloud
- Automating Alibaba Cloud Infrastructure with Ansible
  - Day 1: deployment in Alicloud
    - Task #1: Create VPC, Vswitch and Security group
    - Task #2: Start, Stop, Restart and Delete VM Instance
  - Day 2: operations in Alicloud
    - Task #1: Deploying Drupal 8 using Ansible Playbook
The Future is open hybrid cloud

- Digital transformation produces better outcomes
- Cloud is integral to every enterprise digital transformation strategy
- To avoid lock-in, hybrid & multi cloud are default choices for enterprises
- Complexity in hybrid cloud management is multiplied: resource provisioning, configuration, security, app deployment
- Best approach to that: automation, supporting manage hybrid cloud as code
Automation is critical

86%

Automation is either mission critical or very important to their future Cloud strategies

79%

Of IT organizations will need to deploy new management and automation software between now and 2020

Source: IDC Infobrief sponsored by Red Hat, Automation, DevOps and the Demands of a Multicloud World, March 2018
N= 1171 Worldwide IT Operations Decision Makers
Why Ansible?

**Simple**
- Human readable automation
- No special coding skills need
- Tasks executed in order
- Usable by every team
- Get productive quickly

**Ansible**
- App deployment
- Configuration management
- Workflow orchestration
- Network automation
- Orchestrate the app lifecycle

**Agentless**
- Agentless architecture
- Uses OpenSSH & WinRM
- No agents to exploit or upgrade
- Get started immediately
- More efficient & more secure
## Ansible + Iaas

Below is a matrix on Ansible's capability in supporting public cloud vendors

<table>
<thead>
<tr>
<th></th>
<th>VM</th>
<th>Storage (OSS/Disk/Snapshot/Image)</th>
<th>Network (VPC/EIP/ELB/SG)</th>
<th>DB</th>
<th>DNS</th>
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Source from https://www.alibabacloud.com/blog/how-to-provision-alibaba-cloud-resources-with-ansible
DAY 1 Deployment Demo
Tasks

- Task #1: Create VPC, Vswitch, Security group in Alicloud
- Task #2: Create, Start, Stop, Restart, Delete Instance in the Specified Region
Environments

☑ Alicloud account
☑ Have Ansible installed
  ❑ yum -y install ansible

☑ Have Alicloud ansible-provider installed
  ❑ https://github.com/alibaba/ansible-provider
  ❑ pip install ansible_alicloud
  ❑ Alicloud Ansible module: manage Alicloud ECS and other services
    ❑ ali_instance.py: Create, Start, Stop, Restart or Terminate an Instance in ECS. Add or Remove Instance to/from a Security Group
    ❑ ali_disk.py: Create, Attach, Detach or Delete a disk in ECS
    ❑ ali_security_group.py: Create or Delete a Security Group
    ❑ ali_vpc.py: Create or Delete a Vpc.
    ❑ ali_vsswitch.py: Create or Delete a VSwitch.
    ❑ ali_route_entry.py: Create or Delete a route entry.
    ❑ ali_slb_lb.py: Create or Delete a Load balancer.
    ❑ ...

#redhat #rhsummit
Task #1 - Create vpc, vswitch, security group

- A virtual private cloud service that provides an isolated cloud network to operate resources in a secure environment.

- Alicloud account credentials: Access_key, and Secret_key

- Alicloud module: create vpc

- VPC specific parameters: Name, cidr_block, description

```yaml
- name: create vpc
  hosts: xx
  connection: local
  vars:
    alicloud_access_key: YOUR_ACCESS_KEY_HERE
    alicloud_secret_key: YOUR_SECRET_KEY_HERE
    alicloud_region: cn-hongkong
    state: present
    cidr_block: 192.168.0.0/16
    vpc_name: Demo_VPC
    description: Demo VPC
  tasks:
    - name: create vpc
      alicloud_vpc:
        alicloud_region: '{{ alicloud_region }}'
        state: '{{ state }}'
        cidr_block: '{{ cidr_block }}'
        vpc_name: '{{ vpc_name }}'
        description: '{{ description }}'
        ...
Task #2 - VM lifecycle management using ansible roles

VM lifecycle management

Create VM  Start VM  Reboot VM  Stop VM  Delete VM

Short video demo
DAY 2  Operations Demo
Scaling your workflow by Ansible Tower

- Coordinate across teams
- Control access to credentials
- Track, audit and report Ansible runs in dashboard
- Provide self-service or delegation
- Integrate Ansible with other enterprise systems
Task: Configure Drupal 8 using Ansible Tower

GitHub
Ansible playbook
Repository

Http Server (VM in Alicloud)

PHP+Drupal+Nginx
HTTP listen: 80 or 443

DB Server (VM on Premise)

Mariadb
listen: 3306

IT Operator
System Admin

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Ansible Tower configure
Demo Time

Short video demo
THANK YOU

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