

A practitioner's tale on clouds

Open conf, Athens, Greece
29 March 2019, Cloud day





CEO and co-founder



#OSATH organizer

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cloud expert, open-source enthusiast, OpenStack instructor, Ansible practitioner

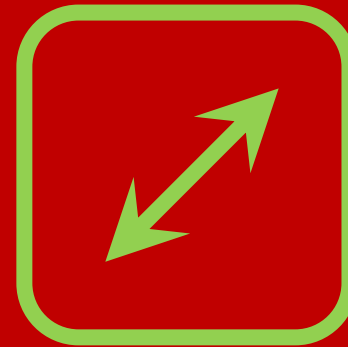
www.linkedin.com/in/parathyras/

the cloud

expectations · meaning · practice

no downtime

elastic resources



self-service

application control

SaaS

PaaS

IaaS

{ api }



source: <https://governance.openstack.org/tc/reference/technical-vision.html>

SaaS

PaaS

IaaS

as-a-service

SaaS

PaaS

IaaS



Business model

Pay as you Go - OPEX

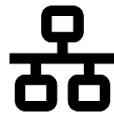
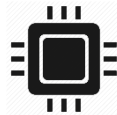
Minimizes IT fixed assets - CAPEX

Managed Services

Applications



Applications

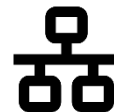
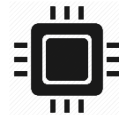


Data center

Applications



Automates



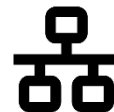
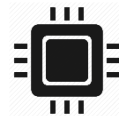
Data center



Increased
Automation



Applications



Data center

Ansible

plays · modules · inventory · variables

Task Automation

Ansible play

```
---  
- hosts: web-farm  
  tasks:  
    - name: Be sure apache is installed  
      package:  
        name: "{{ httpd_packages }}"  
        state: present  
    - name: Be sure apache is configured  
      template:  
        src: httpd.conf.j2  
        dest: "{{ httpd_conf.MainConfPath }}"
```

Task Automation

Ansible play

Ansible modules

```
---  
- hosts: web-farm  
  tasks:  
    - name: Be sure apache is installed  
      package:  
        name: "{{ httpd_packages }}"  
        state: present  
    - name: Be sure apache is configured  
      template:  
        src: httpd.conf.j2  
        dest: "{{ httpd_conf.MainConfPath }}"
```

Task Automation

Ansible play

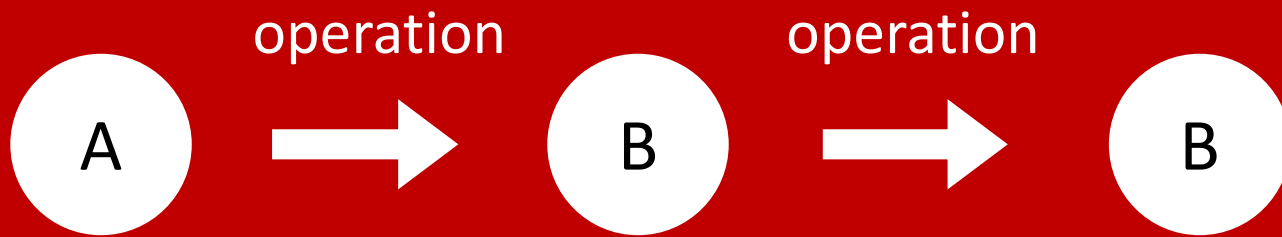
Ansible modules

Define desired state
with parameters

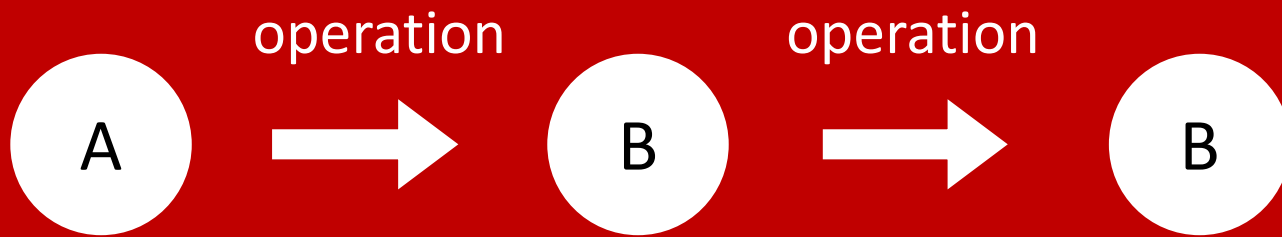
ansible-doc

```
---  
- hosts: web-farm  
  tasks:  
    - name: Be sure apache is installed  
      package:  
        name: "{{ httpd_packages }}"  
        state: present  
    - name: Be sure apache is configured  
      template:  
        src: httpd.conf.j2  
        dest: "{{ httpd_conf.MainConfPath }}"
```





IDEMPOTENCE



Ansible modules

IDEMPOTENCE



Variables

Config settings

System level

Application

Vars defined

CLI

several files

priority

```
# httpd version
httpd_version: "2.4.6"
httpd_packages:
  - "httpd"
  - "mod_ssl"

# httpd.conf options
httpd_conf:
  ServerRoot: "/etc/httpd"
  MainConfPath: "/etc/httpd/conf/httpd.conf"
  DocumentRoot: "/var/www"
  ListenPort:
    - "80"
    - "443"
```

Task Automation

Ansible play

Variables

Ansible modules

```
---  
- hosts: web-farm  
  vars_files:  
    - path/to/httpd.vars  
  tasks:  
    - name: Be sure apache is installed  
      package:  
        name: "{{ httpd_packages }}"  
        state: present  
    - name: Be sure apache is configured  
      template:  
        src: httpd.conf.j2  
        dest: "{{ httpd_conf.MainConfPath }}"
```

Task Automation

Ansible play

Inventory

Variables

Ansible modules

```
---  
- hosts: web-farm  
  vars_files:  
    - path/to/httpd.vars  
  tasks:  
    - name: Be sure apache is installed  
      package:  
        name: "{{ httpd_packages }}"  
        state: present  
    - name: Be sure apache is configured  
      template:  
        src: httpd.conf.j2  
        dest: "{{ httpd_conf.MainConfPath }}"
```

Inventory

Define hosts

behavioral settings

host vars

Groups

Groups of groups

Group vars

default groups

```
# Production servers
LIVE-web01 ansible_host=10.0.0.10
LIVE-web02 ansible_host=10.0.0.10

[web-farm]
LIVE-web01
LIVE-web02

[backend:children]
web-farm

[all:vars]
ansible_port=22
ansible_user=system
ansible_private_key_file=~/.ssh/id_rsa
```

Infrastructure as Code

Orchestrate

cloud resources

```
---  
- name: "Allocate AWS resources"  
  hosts: localhost  
  connection: local  
  tasks:  
    - name: "Provision a new EC2 instance"  
      ec2:  
        instance_type: t2.micro  
        region: us-east-1  
        key_name: lamp.key  
        image: ami-123456  
        vpc_subnet_id: subnet-29e63245  
        assign_public_ip: yes
```


Application

Stack

Definition

Ansible roles

galaxy.ansible.com

```
---
```

```
- name: "Allocate AWS resources"  
  hosts: ...  
  tasks: ...
```

```
- name: "Setup LAMP stack on web farm hosts"  
  hosts: web-farm
```

```
  roles:
```


- role: centos
- role: php
- role: php-fpm
- role: apache
- role: mysql

CLOUD:

- {Easy, Fast, Secure, Unlimited}
- "Do not Repeat Yourself"

CATCH:

- **abstracted**("Infrastructure management")
- **simplified**("Software delivery")
- **application**("Management and Operations")

A night street scene with buildings, trees, and streetlights. The scene is dimly lit, with a few streetlights providing the main illumination. The buildings are on either side of the street, and there are trees and bushes in the foreground and background. The overall atmosphere is quiet and somewhat somber.

Thank you for your attention!

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THE END