

Use of Opensource technology-Terraform; To Orchestrate and Optimize multi-cloud/tier deployments on OpenStack Clouds



About Us



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Founder & CEO



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APAC)

Agenda

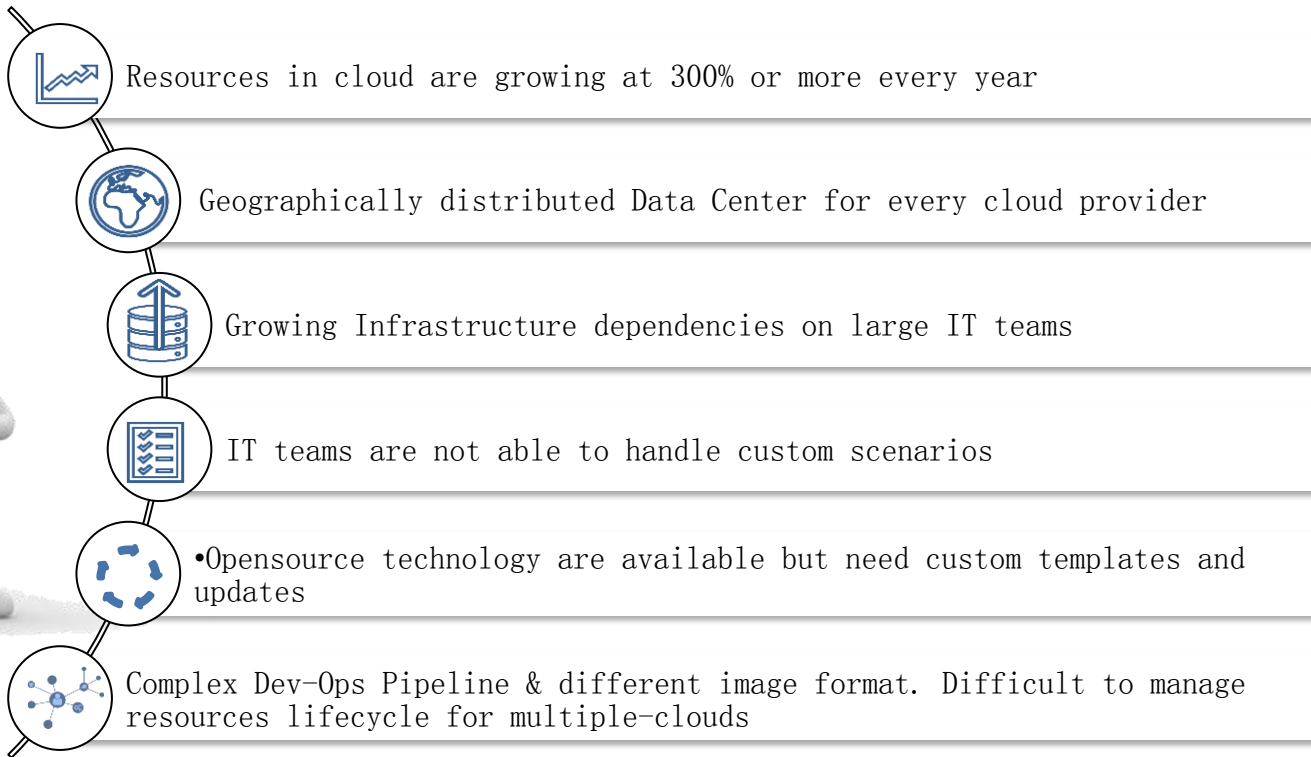
- Problem Statement
- Top Challenges and Current Scenarios
- Current Infra Stats vs to be
- Opensource Community Opportunities
- Opensource Technology
- Benefits & Use Cases
- Huawei contribution to opensource community
- Q&A

Rupal Shirpurkar

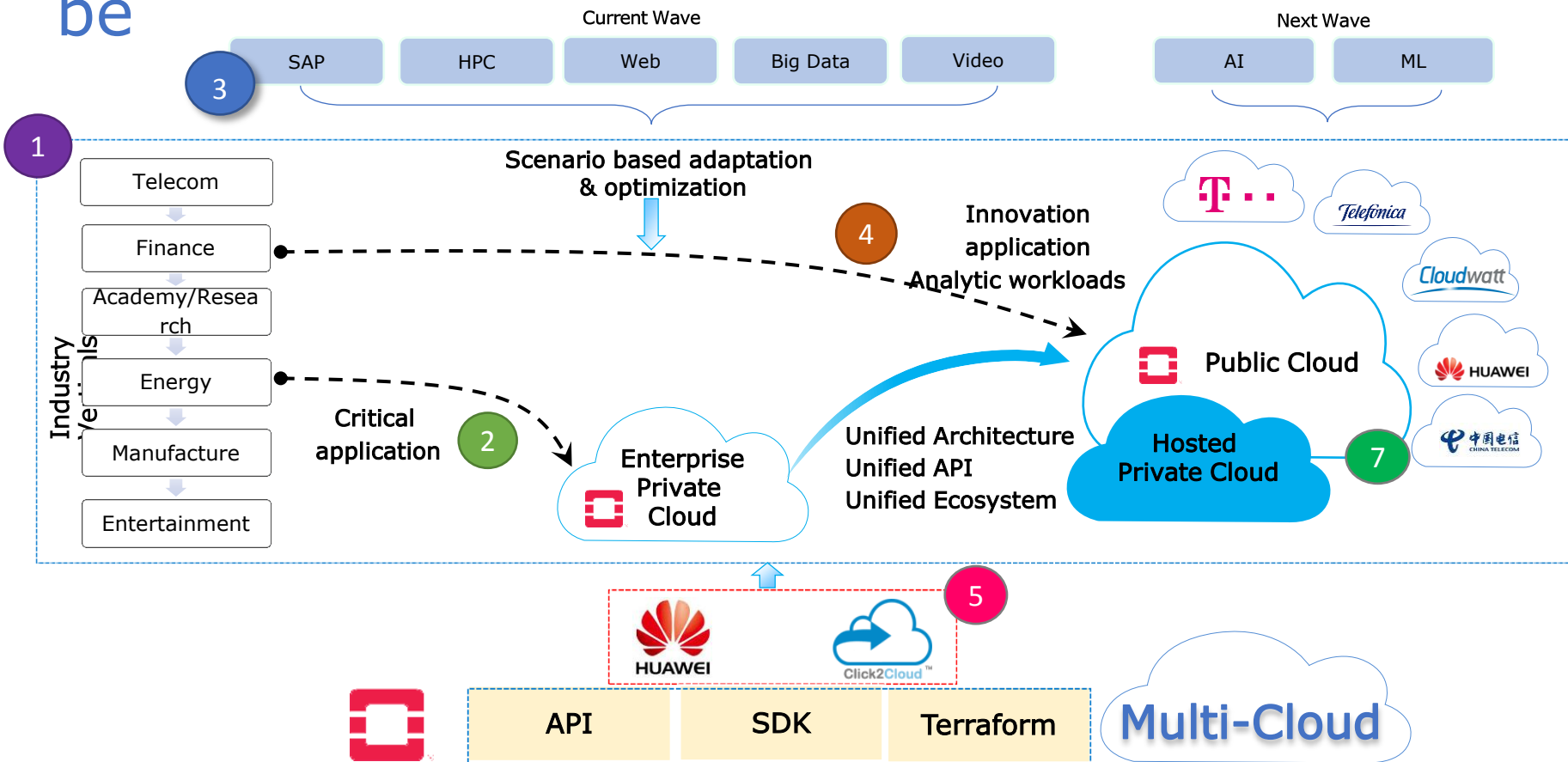
Li Zhonghu

Prashant Mishra

Problem Statement



Current Infra Stats vs to be



OpenSource Community Opportunities

- ✓ Create Industry specific solutions.
- ✓ Combine Software + Hardware for more powerful Openstack solutions.
- ✓ Developers communities are encouraged to join OpenLab/ OpenStack.
- ✓ Companies are extending and contributing a lot for creating ecosystem. On their own cost.

Benefits of Infra – Automation

Accelerating
Software Delivery

Managing Both Data
Center and Cloud
Environments

Increasing Service
Resiliency

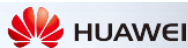
Improving Risk
Management

Delivering All
Your
Infrastructure –
Any App,
Everywhere,
Continuously

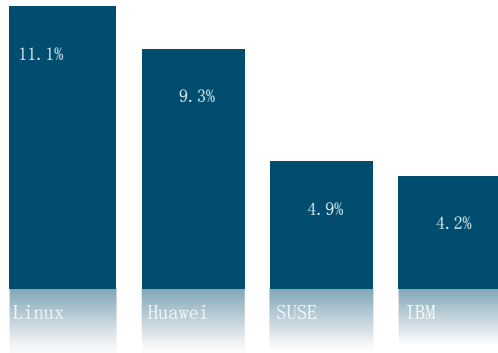
Opensource Community Market Stats

1

In 4 years



The second largest after Linux



2



Click2Cloud

Believe <http://www.click2cloud.com>

golangsdk

Forked from huaweicloud/golangsdk
golangsdk: a Huawei clouds SDK for Golang

Go 14 Updated 2 days ago



terraform-provider-huaweicloud

Forked from huaweicloud/terraform-provider-huaweicloud
Terraform HuaweiCloud provider

Go 7 MPL-2.0 Updated 5 days ago



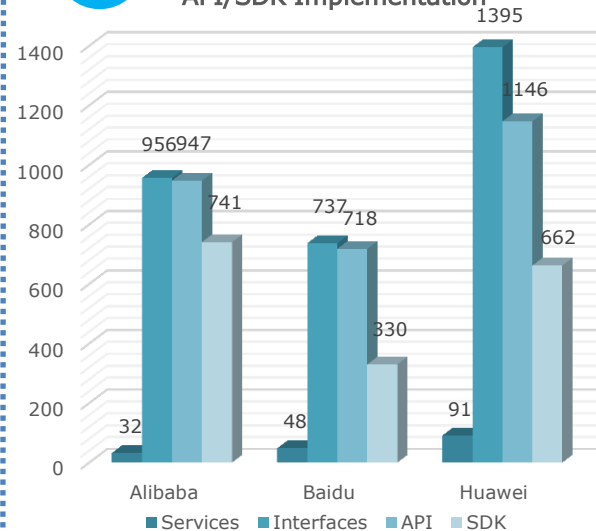
terraform-provider-opentelekomcloud

Forked from terraform-providers/terraform-provider-opentelekomcloud
Terraform OpenTelekomCloud provider



3

API/SDK Implementation



Huawei and Opensource Technology



Provisioning

Deploy OS on BM, Networks, Firewalls etc., deploy and manage frameworks such as VMWare, OpenStack on (Private, Public, Hybrid)



Configuration Management

To manage the software configurations, patches on single or multiple nodes



App Deployment

To deploy the multi-tier applications reliably and consistently, all from one common framework



Continuous Delivery

To roll out new updates with Zero downtime



Security & Compliance












To define the security for systems like; setting firewall rules, locking down users and groups, or applying custom security policies



Orchestration

To bring in the proper order for deployment of; frontend and backend services, databases, monitoring, networks and storage

We use opensource and contribute a lot !

Automation Tech →	Ansible	Chef	Puppet	Saltstack	Terraform	Cloud Formation
 OUTSOURCERS						
 MANAGEMENT	Open Source	Open Source	Open Source	Open Source	Open Source	Closed Source
 OPERATIONS	All	All	All	All	All	AWS Only
 Q/A	Config Management	Config Management	Config Management	Config Management	Orchestration	Orchestration
 DEV/TEST	Mutable	Mutable	Mutable	Mutable	Immutable	Immutable
	Procedural	Procedural	Declarative	Declarative	Declarative	Declarative
	Client Only	Client/Server	Client/Server	Client/Server	Client Only	Client Only

Terraform Market Stats

22 Million

Downloads
of its open
source products

150

Updates released
Across its suite

44 Cities

Community
Presence

8000+

Community
Members

Features:

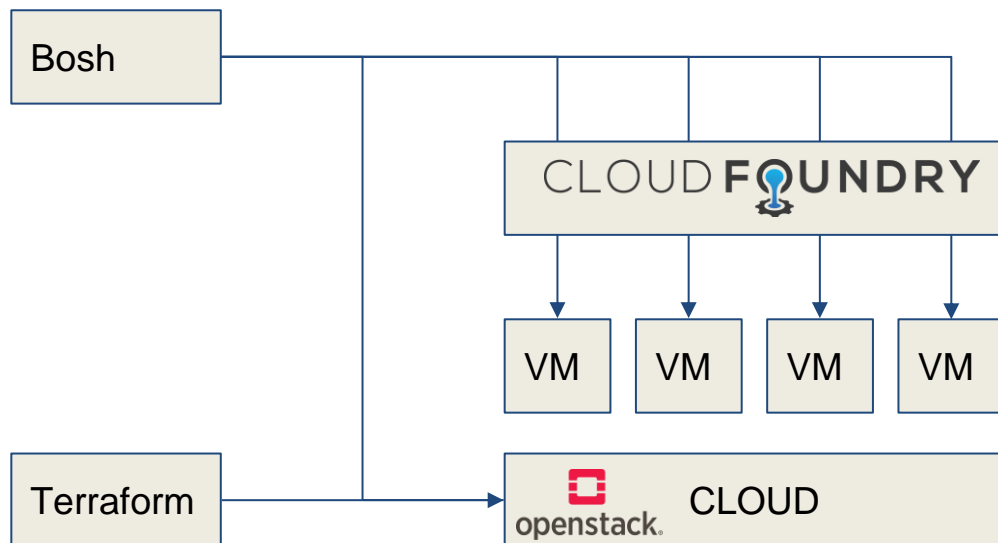
- Open Source
- Infrastructure as Code
- Resource Providers
- Execution Plans
- Resource Graph
- Change Automation



Goals:

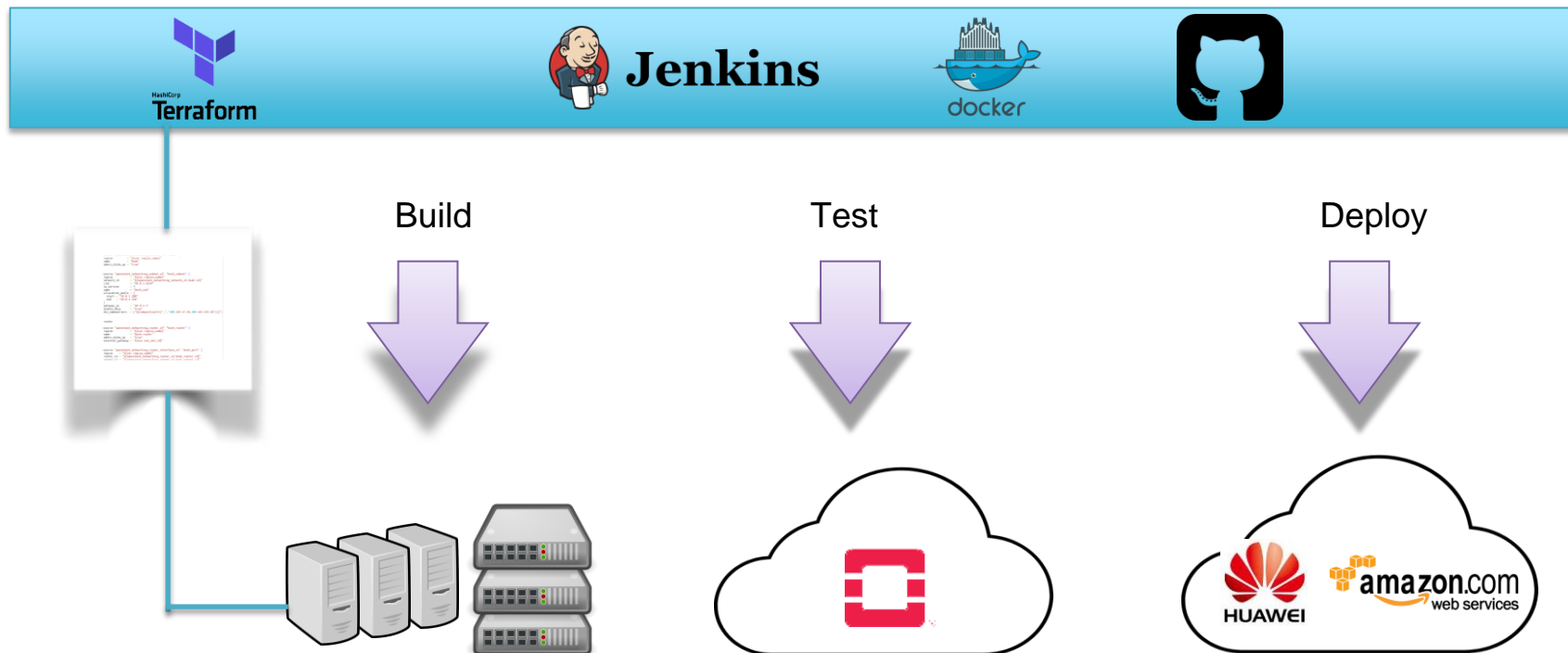
Unified View of
Infrastructure
Infrastructure as Code
Compose multiple
tiers (IaaS to PaaS to
SaaS)
Safely Change/ iterate
infrastructure overtime
One workflow

Use Case — Manage Infra for platform



```
destroy_openstack_env.sh*  
generate_ssh_keypair.sh*  
network-outputs.tf  
network.tf  
network-vars.tf  
provider.tf  
provider-vars.tf  
README.md  
resources-outputs.tf  
resources.tf  
resources-vars.tf  
terraform.tfvars  
terraform.tfvars.template
```

Use Case — Make Devops Simple



Contribution To Community

terraform-provider-huaweicloud

Terraform HuaweiCloud provider

Go ★ 3 🍴 6 📄 MPL-2.0 Updated 3 days ago



terraform-provider-opentelekomcloud

Terraform opentelekomcloud provider

Go ★ 2 🍴 8 📄 MPL-2.0 Updated 24 days ago



terraform-provider-flexibleengine

Terraform FlexibleEngine provider

Go ★ 2 🍴 3 📄 MPL-2.0 Updated 12 days ago



terraform-provider-telefonicaopencloud

Terraform TelefonicaOpenCloud provider

Go ★ 1 🍴 2 📄 MPL-2.0 Updated on May 8



terraformdocs

Updated on Apr 12



- > Configuration
- > Commands (CLI)
- > Import
- > State
- > Providers

- > Major Cloud
 - > Cloud
 - > Infrastructure Software
 - > Network
 - > VCS
 - > Monitor & System Management
 - > Database
 - > Misc.
 - > Community

- > Provisioners
- > Modules
- > Backends
- > Plugins
- > Internals

Cloud Providers

This group includes cloud providers offering cloud providers includes some smaller scale associated resources for these clouds are prioritized and are tested by HashiCorp.

- [Arukas](#)
- [CenturyLinkCloud](#)
- [CloudScale.ch](#)
- [CloudStack](#)
- [DigitalOcean](#)
- [Fastly](#)
- [FlexibleEngine](#)
- [Heroku](#)
- [Hetzner Cloud](#)
- [OpenStack](#)
- [OpenTelekomCloud](#)



HUAWEI

<https://github.com/huaweicloud>

2018 OPENINFRA DAYS CHINA

Contribution 1000 VMs performance

```
resource "openstack_blockstorage_volume_v2" "data-vol" {  
  count = "${var.engine_count}"  
  name = "data-vol-${count.index}"  
  size = 1  
  image_id = "${var.image_id}"  
  availability_zone = "${var.availability_zone}"  
  volume_type = "SATA"  
}
```

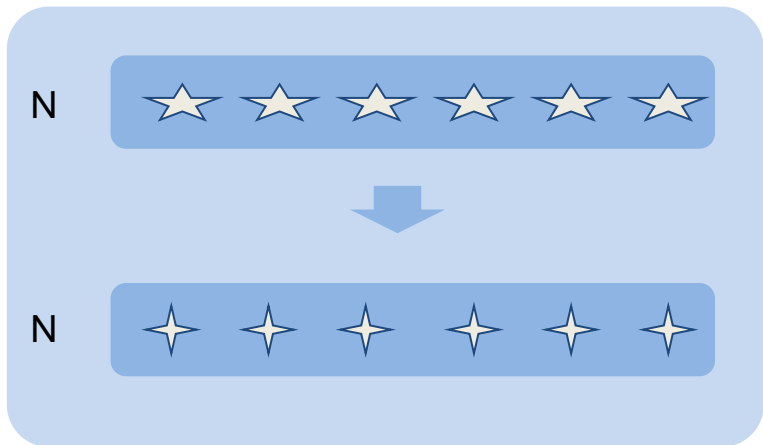
```
resource "openstack_compute_instance_v2" "engine" {  
  count = "${var.engine_count}"  
  name = "engine-${count.index}"  
  flavor_name = "${var.flavor_name}"  
  availability_zone = "${var.availability_zone}"  
  security_groups = ["default"]  
  network {  
    uuid = "${var.network_id}"  
  }  
  |  
  block_device {  
    uuid = "${element(openstack_blockstorage_volume_v2.sys-vol.*.id, count.index)}"  
    source_type = "volume"  
    boot_index = 0  
    destination_type = "volume"  
    delete_on_termination = false  
  }  
}
```



Terraform Destroy Cost N Hours

Contribution 1000 VMs performance

Resource Dependency



```
key := addr.String()
if ds, ok := destroyers[key]; ok {
    for _, d := range ds {
        depDestroyers = append(depDestroyers, d.(dag.Vertex))
        log.Printf(
            "[TRACE] DestroyEdgeTransformer: destruction of
            key, dag.VertexName(d))
    }
}
```

Parse complex rate: $N*N$

📌 transform graph can not finish over 12 hours when deleting a large quantity of resources **bug**

core performance

#17095 opened on Jan 12 by zengchen1024



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IT大咖说
知识共享平台

Q&A

