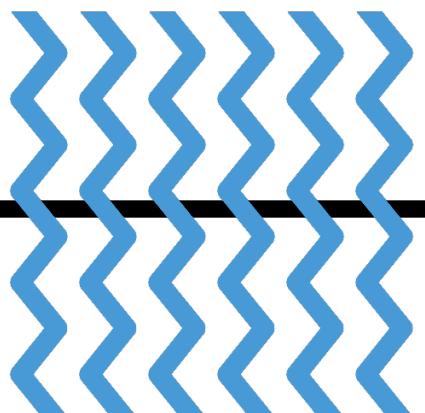
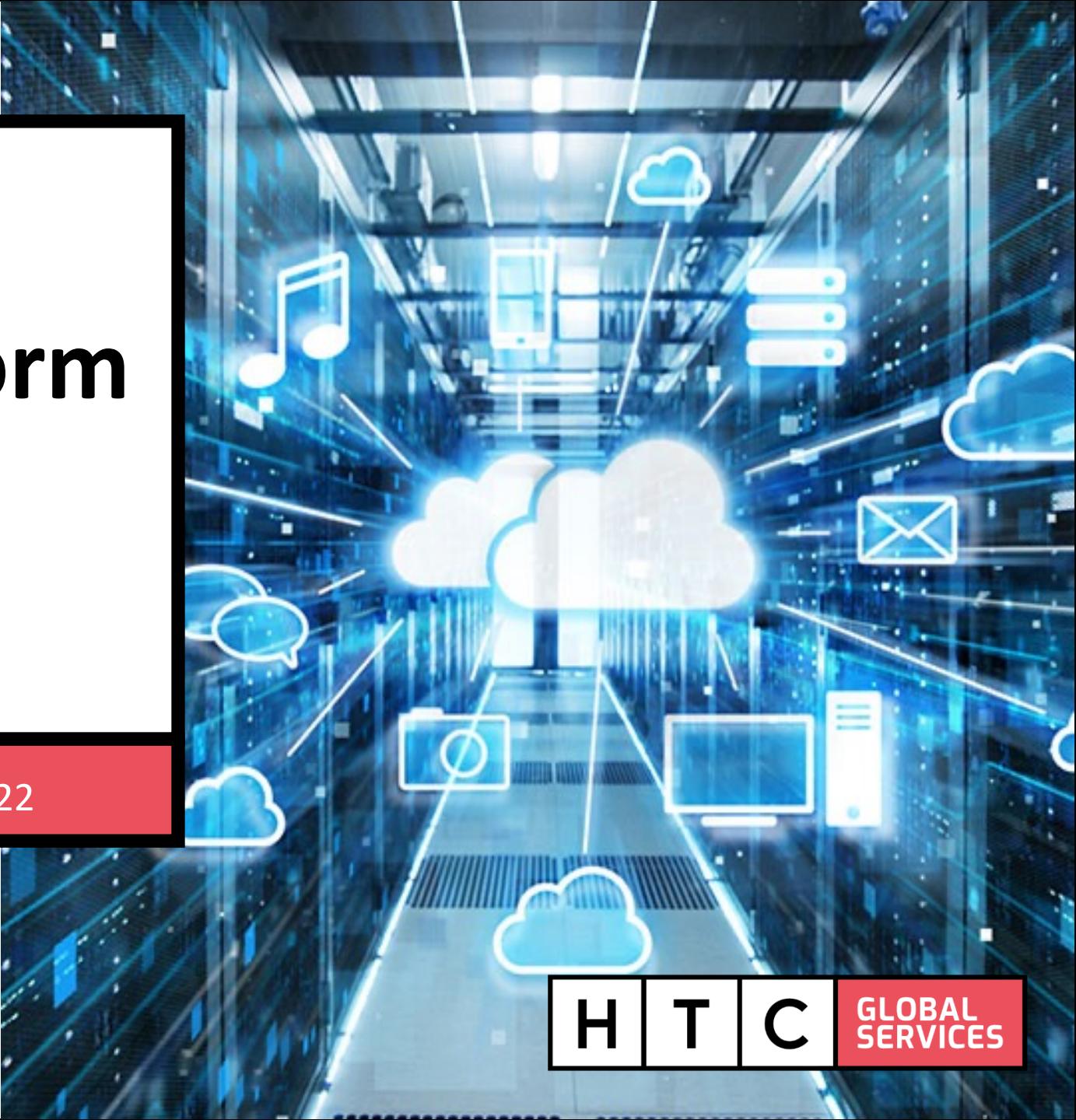


HTC Cloud Hyper Automation Platform (CHAMP)



MARCH 2022



HTC's Cloud Hyper Automation Management Platform (CHAMP)



HTC's CHAMP is a one stop system for Multi Cloud Automation Platform

Current Challenges in Cloud Automation

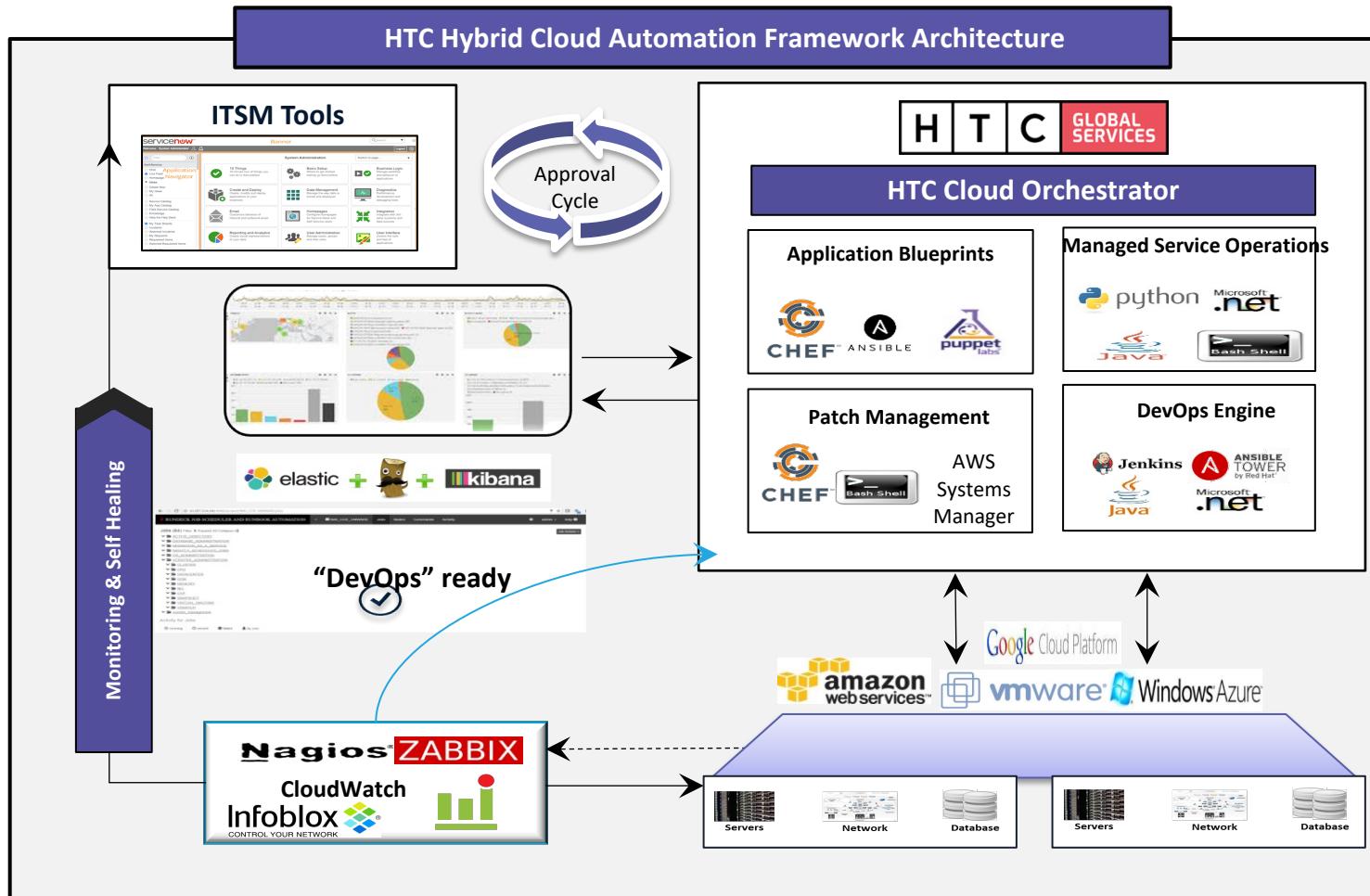
- Agility in cloud implementation & rollouts
- Learning Curve of the teams
- Manageability of the cloud assets
- Traceability & Governance of Cloud deployments and its logs
- Cloud SME's – Resource Availability

Key Features of HTC's CHAMP

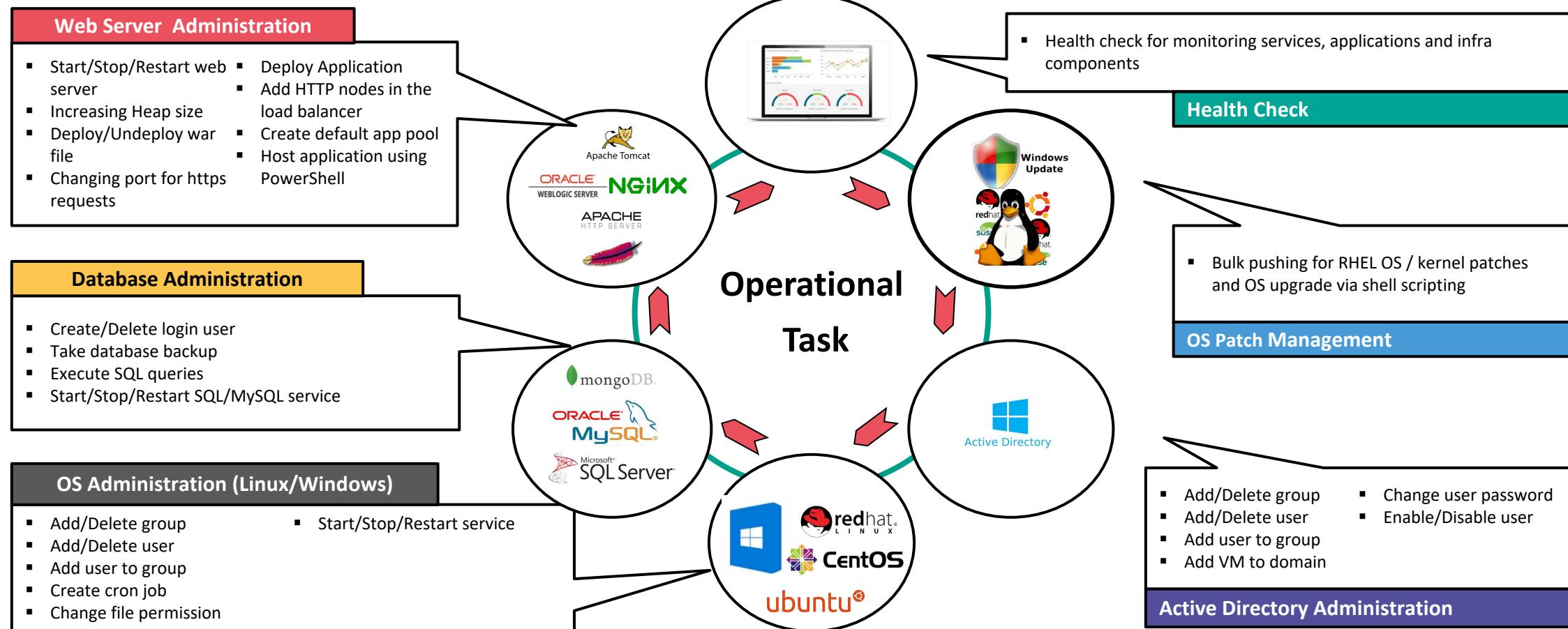
- Customer Self Service
- Automated Provisioning for multiple cloud providers
- Centralized Task Status Monitoring, Audit
- Hassle free Integration with IaC (like Terraform) and Configuration Management tools (Ansible)
- Application Blueprints with Prebuilt Provisioning Templates
- Extend and Customize using REST API's
- Easily Integration with Existing ITSM tools via REST APIs (like Service Now)

The screenshot displays the HTC CHAMP platform interface across three main sections. The top section is the Dashboard, which includes a line chart titled 'Top 10 Ansible Task' showing a downward trend from 'mysql-uninstall' to 'linus-re-satching', and a pie chart titled 'Transactions' showing success rates. Below the dashboard are two cards: 'Order history' (listing a task ID for 'gcp-tomcat-10') and 'Products/Azure/Compute' (listing various operating systems like Red Hat Linux, openSUSE, CentOS, and Ubuntu with configuration links). The bottom section is a 'Supported Platforms' box containing icons for Microsoft Azure, VMware, Google Cloud, and Amazon Web Services.

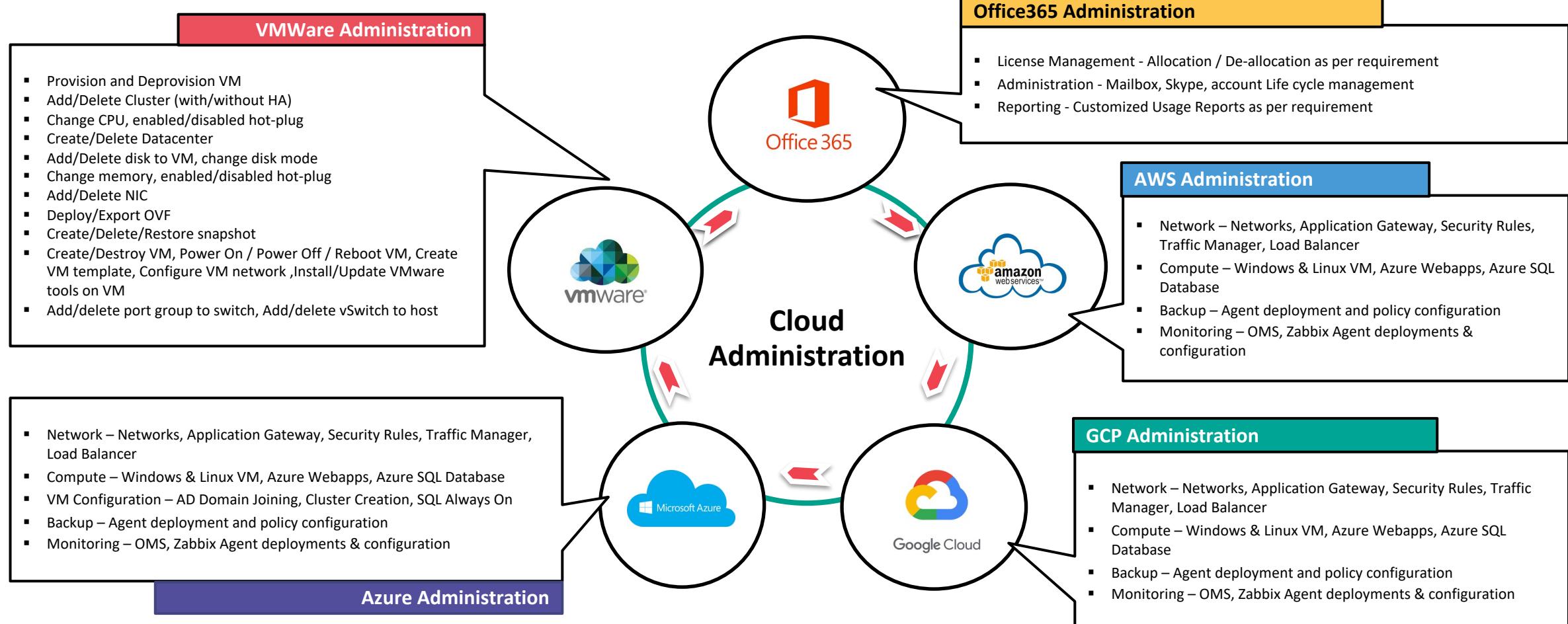
HTC Cloud Hyper Automation Platform (CHAMP) Architecture



Automation Catalogue Offering



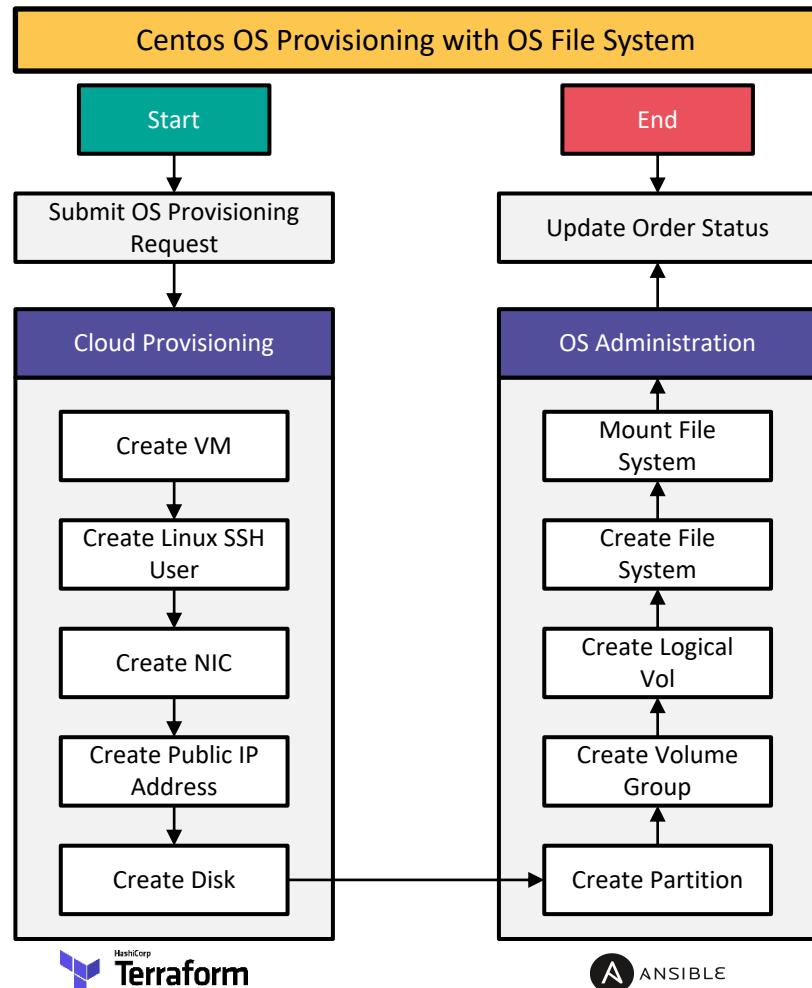
Automation Catalogue Offering



Key Benefits

- Easily developed and integrate Infrastructure automation tools –
 - IaC : Terraform, Azure Resource Manager (ARM), CloudFormation Template (CFT), etc..
 - Configuration Management : Ansible, SaltStack, Chef, Puppet
- No enterprise licence required for any IaC and Configuration Management tools. All open-source tools used to perform the target cloud automation
- Can design complex automation using combination of multiple IaC and Configuration Management tools
- Customer can onboard their scripts by configurating their GitHub Repositories
- Single interface to manage the Hybrid Cloud Automation with traceability and audit logs
- API based integration with any ITSM tools (e.g., SNOW, HPSM) or customer existing self-service portal to build catalogues
- Self healing can be easily achieved by execute the automation plan based on problem and can easily integrate with any monitoring tools via API

Demo 1 – Centos OS Provisioning with OS File System on Azure



Cloud Orchestrator

Transaction Details

Source	CloudOrch	Task Name	Task ID	Created Date	Reference ID
Cloud Provider	azure	os-provisioning	a9d3b02b66944cee9378010186eb62d4	08-02-2022 17:17:17	{"task_instance_id":123456,"cus ...}

Request Transition Logs Audit Logs Response

Start (08-02-2022 17:17:17) → os-provisioning (08-02-2022 17:21:28) → add_disk (08-02-2022 17:21:58) → mount_filesystem (08-02-2022 17:22:43) → End (08-02-2022 17:22:43)

View as JSON

admin_password: ComplxP@ssw0rd!
admin_username: azureuser

root@ganesh070220240:/home/azureuser# lsblk
NAME MAJ:MIN RM SIZE RO TYPE MOUNTPOINT
fd0 2:0 1 4K 0 disk
sda 8:0 0 30G 0 disk
└─sda1 8:1 0 30G 0 part /
sdb 8:16 0 16G 0 disk
└─sdb1 8:17 0 16G 0 part /mnt/resource
sdc 8:32 0 21G 0 disk
└─sdc1 8:33 0 21G 0 part
 ├─appdata-app1lv 253:0 0 10G 0 lvm /mnt/app1
 ├─appdata-app2lv 253:1 0 10G 0 lvm /mnt/app2
sr0 11:0 1 628K 0 rom

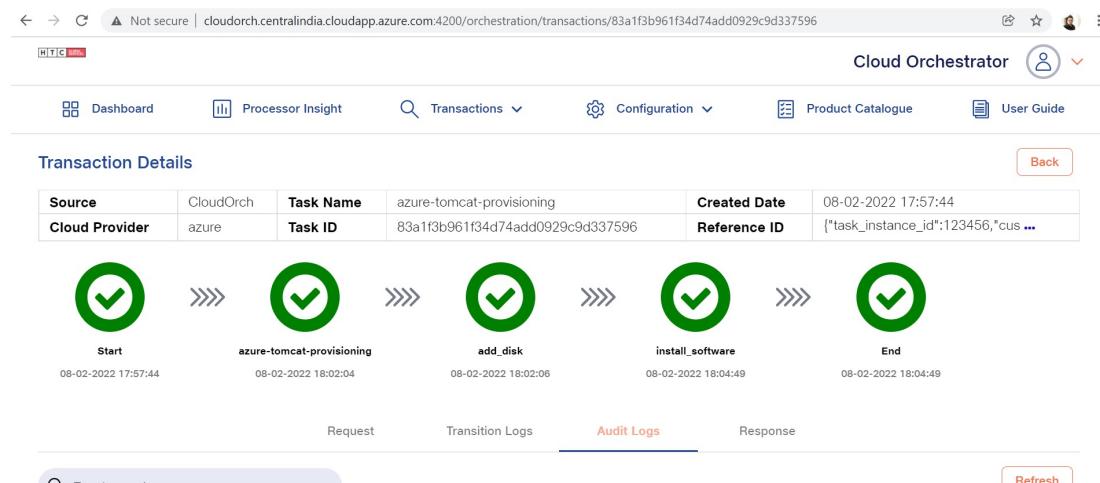
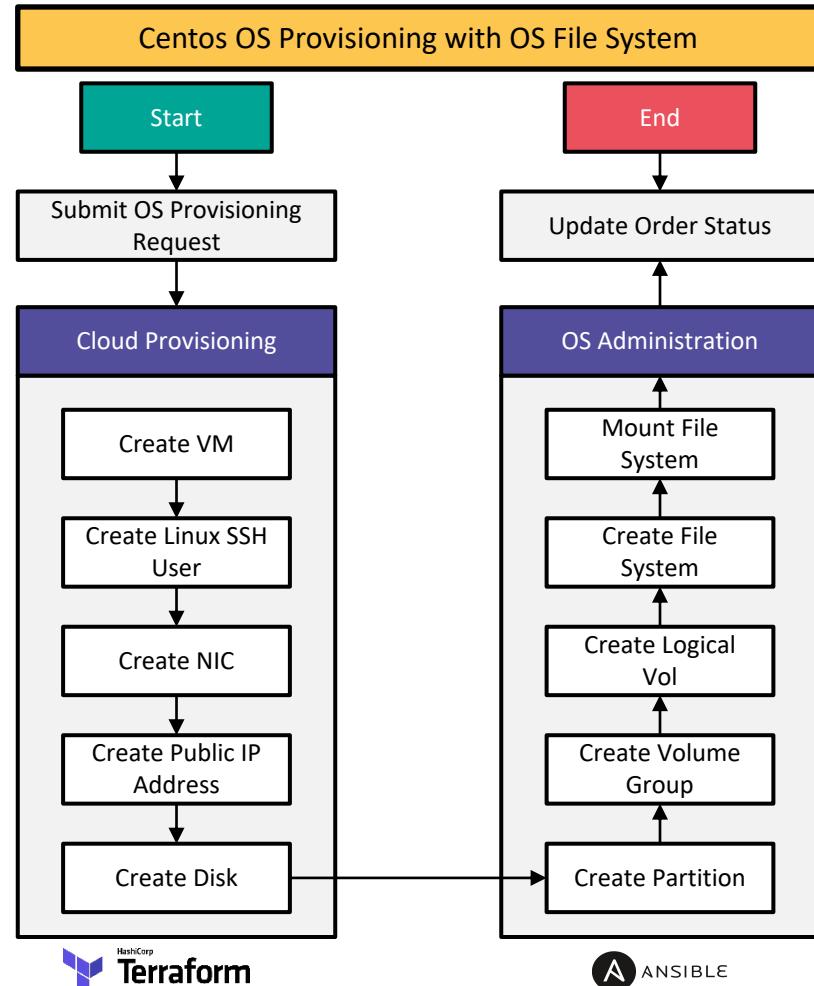
ganesh070220240 | Disks

Search (Ctrl+I) Overview Activity log Access control (IAM) Tags Diagnose and solve problems Settings Networking Connect Disks Size Security Advisor recommendations Extensions + applications

OS disk Swap OS disk Disk name Storage type Size (GiB) Max IOPS Max thr
osdisk-ganesh070220240-C Premium SSD LRS 30 120 25

Data disks Filter by name Showing 1 of 1 attached data disks
Create and attach a new disk Attach existing disks LUN Disk name Storage type Size (GiB) Max IOPS
1 ganesh070220240_data_ Premium SSD LRS 21 120

Demo 2 - Centos OS Provisioning with Tomcat on GCP





If you're seeing this, you've successfully installed Tomcat. Congratulations!

Recommended Reading:

- [Security Considerations How-To](#)
- [Manager Application How-To](#)
- [Clustering/Session Replication How-To](#)



Microsoft Azure

ganeshtomcat0

Virtual machine

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Essentials

Resource group (move) CLOUD-ORCHESTRATOR

Status Running

Location Central India

Subscription (move) Visual Studio Premium with MSDN

Subscription ID b2119364-dce6-4ebc-a47e-e90747fd8483

Tags (edit)

costcenter : it deployment_mode : terraform environment : dev

Operating system Linux

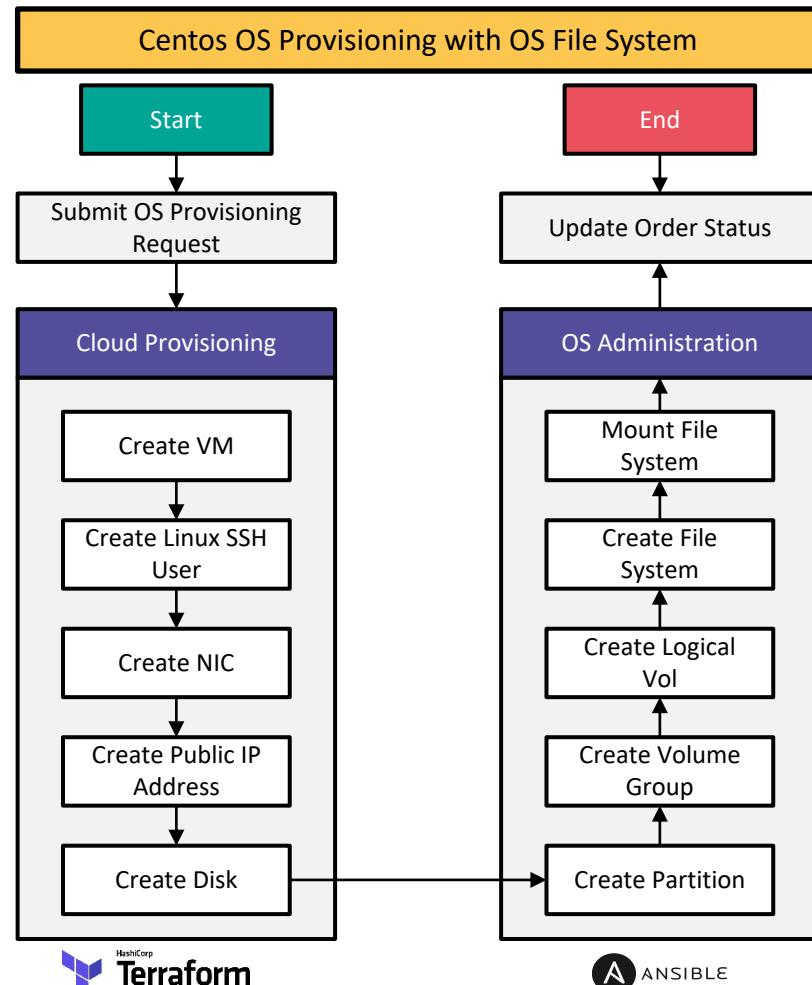
Size Standard D2as v4 (2 vcpus, 8 GiB memory)

Public IP address 20.204.101.25

Virtual network/subnet cloud-orchestrator-vnet/default

DNS name ganeshtomcat-0.centralindia.cloudapp.azure.com

Demo 3 - Centos OS Provisioning with MariaDB on Azure



Cloud Orchestrator Transaction Details

Source	CloudOrch	Task Name	gcp-os-provisioning	Created Date	08-02-2022 19:31:05
Cloud Provider	gcp	Task ID	2917120748954ac5ba8e4f8eb46d94f5	Reference ID	{"task_instance_id":652324,"cus ...}

Audit Logs

- Start 08-02-2022 19:31:05
- gcp-os-provisioning 08-02-2022 19:31:56
- add_disk 08-02-2022 19:32:15
- mount_filesystem 08-02-2022 19:33:40
- End 08-02-2022 19:33:40

Google Cloud Platform VM Instance Details

```

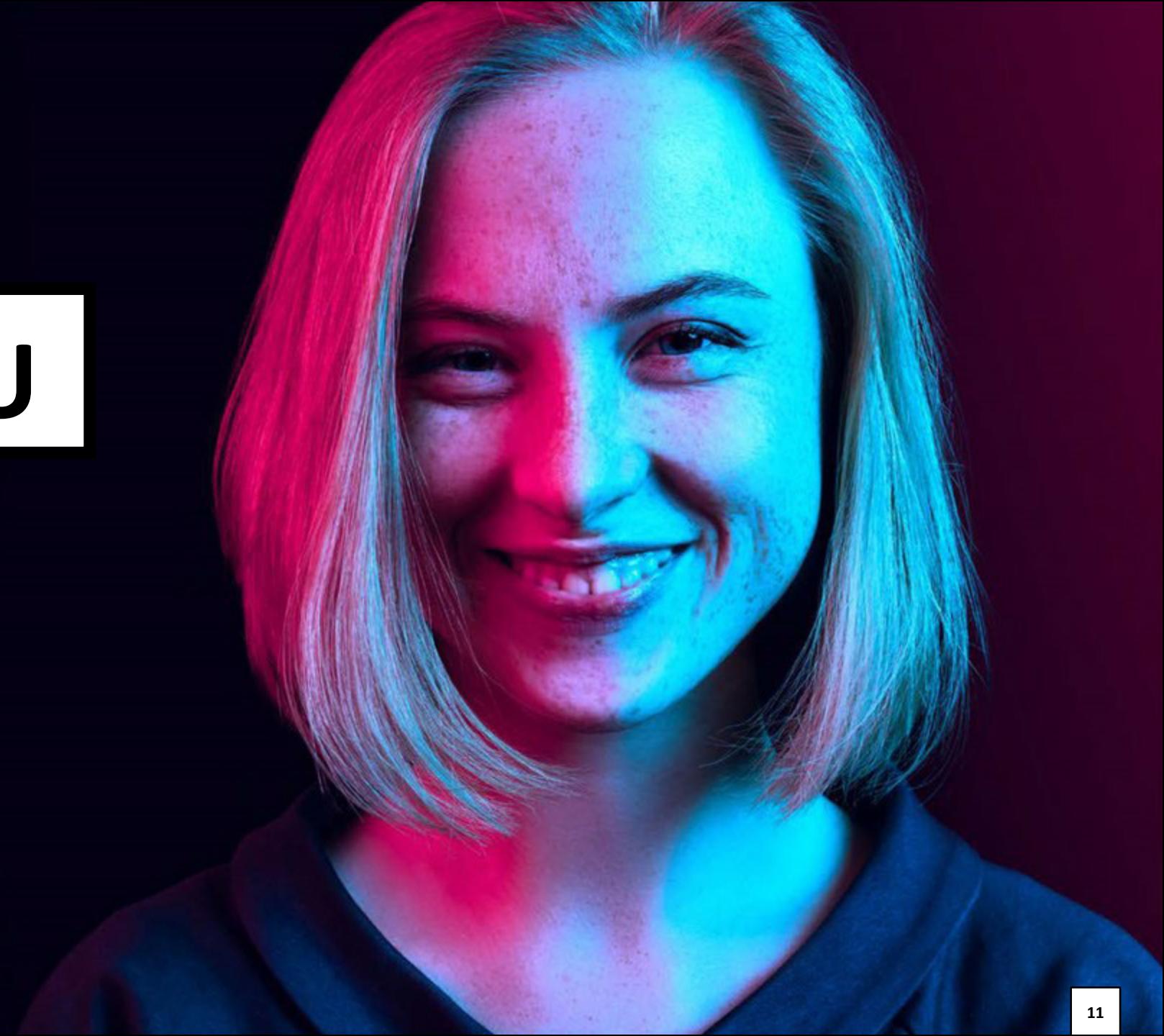
[root@ganeshcentos7-1 ~]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        3.9G   0G  3.9G  0% /dev
tmpfs          3.9G   0G  3.9G  0% /dev/shm
tmpfs          3.9G  8.4M  3.9G  1% /run
tmpfs          3.9G   0G  3.9G  0% /sys/fs/cgroup
/dev/sda2       40G  2.4G  38G  7% /
/dev/sda1      200M  12M  189M  6% /boot/efi
/dev/mapper/appdata-app1lv 9.8G  37M  9.2G  1% /mnt/app1
/dev/mapper/appdata-app2lv 9.8G  37M  9.2G  1% /mnt/app2
tmpfs         782M   0G  782M  0% /run/user/9015
[root@ganeshcentos7-1 ~]# lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda      8:0    0   40G  0 disk
└─sda1   8:1    0  200M  0 part /boot/efi
sda2     8:2    0  39.8G  0 part /
sdb     8:16   0   21G  0 disk
└─sdb1   8:17   0   21G  0 part
      ├─appdata-app1lv 253:0  0  10G  0 lvm  /mnt/app1
      └─appdata-app2lv 253:1  0  10G  0 lvm  /mnt/app2
[root@ganeshcentos7-1 ~]#

```

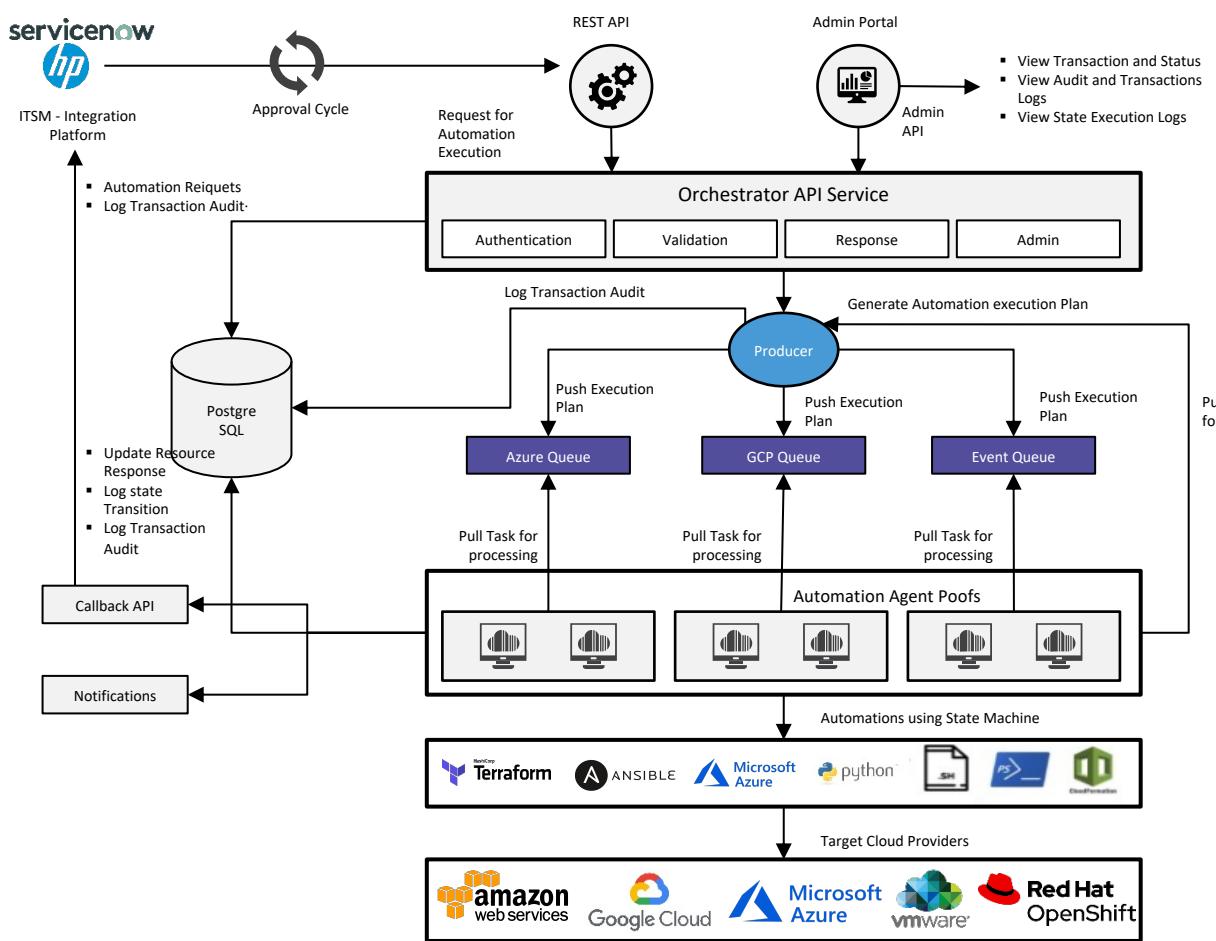
Demo 4 – Managed Service Operations

- Start / Stop / Restart / Delete Virtual Machine on Azure or GCP
- Ubuntu OS Patching on Azure or GCP

THANK YOU



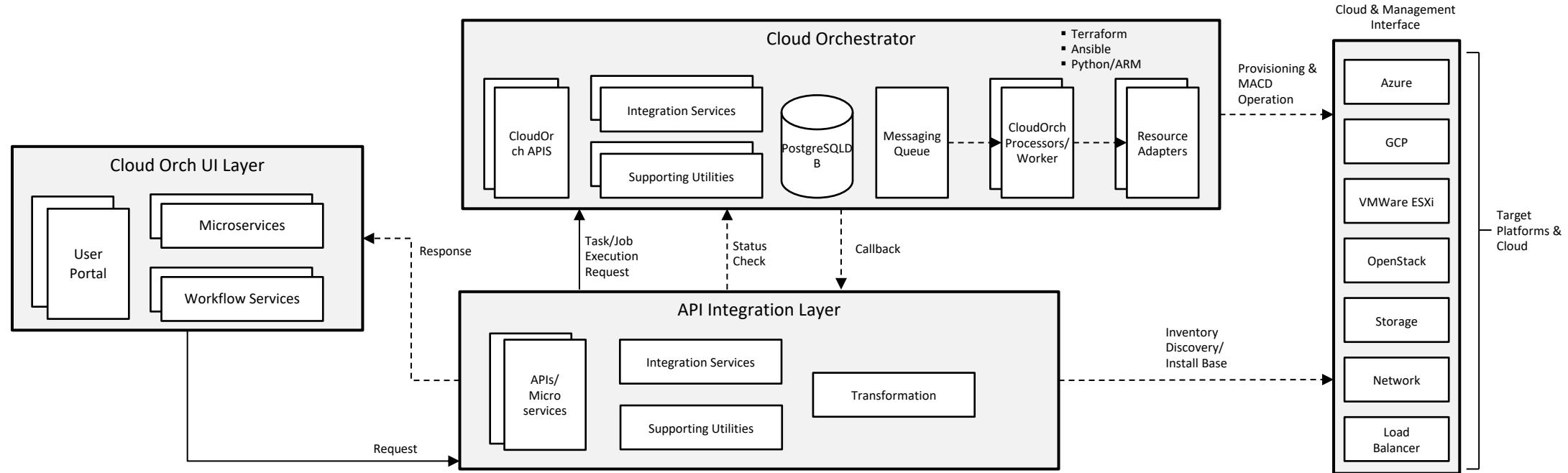
High Level Cloud Orchestrator Architecture



Core Features

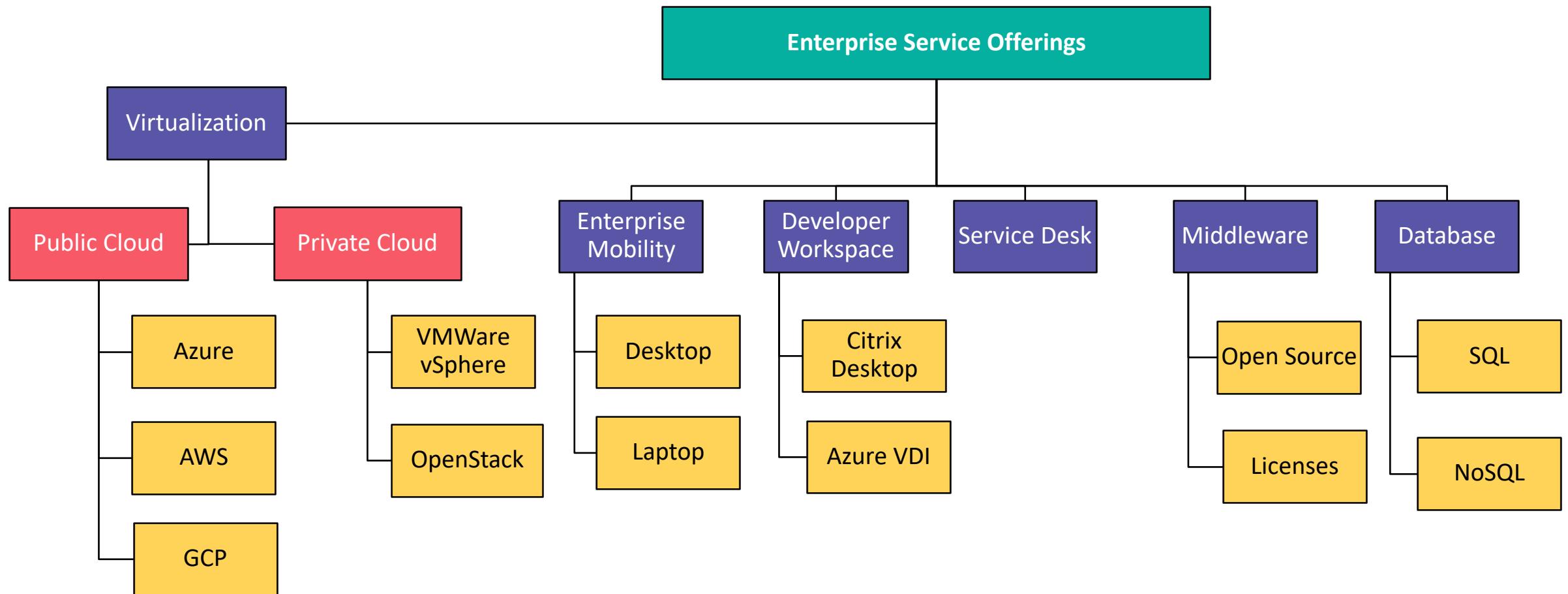
- Rest API Support
- Distributed Processing with multiple agents
- Multiple Queues support
- Multiple tools and languages can be support by extending handlers
- Multiple Cloud Support for provisioning, decommission and MACD operations
- Workflow execution using State Machine
- Admin UI Portal to track the transaction execution and failures
- Transaction Audit Logging
- Callback API to notify success/failures
- Trigger based Notifications
- Integration with ITSM tools like ServiceNow, HPSM
- Can easily build complex automation in combination with IaC and Configuration Management tools

Component of Cloud Orchestrator Architecture



Technology Stack	Programming / Scripting Languages	Python, Angular, PowerShell / Batch / Shell Script
	Database	PostgreSQL
	Messaging Queue	RabbitMQ
	Infrastructure As Code (IaC)	Terraform
	Configuration Management	Ansible

Enterprise Service Offering (Roadmap)



Enterprise Service Offering (Roadmap)

- Provisioning & Decommissioning (On-Premise and Cloud)
 - Compute
 - Base Metal
 - Physical Servers (Including laptop / desktop)
 - VMWare EXSi (Virtual Machines)
 - Virtual Desktops (Citrix or Azure VDI)
 - Storage
 - Network
 - PaaS
- Application or Software Installation & Configuration
 - Virtual Machine
 - Physical Machine
 - Laptop / Desktop
- MACD Operations
 - Configuration and Life Cycle Management
- Infrastructure Testing
- Self Healing