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# Terradoo Cloud

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## INTRODUCTION

### 1.1 Introduction

#### 1.1.1 What is Terradoo Cloud ?

The main objective of Terradoo Cloud is to transform Odoo into a Multi Cloud Native Business suite.

With an approach based on microservices it intends to build a solution for Odoo Community on a Multi Cloud Native Architecture.

OpenERP is a well designed software but it inherits a monolithic approach.

Luckily, it's designed with MVC web server pattern and it has a powerful ORM with a tight database integration within a powerful RDMS.

So, ideally, it could be possible to split Odoo into microservices. But, it isn't the main goal of this project.

However, an OpenERP/Odoo based project may needs other supporting services and applications. Terradoo cloud aims to provide a seamless solution to bundle such a project as a Multi Cloud Native application.

For example, an Odoo CE based project may needs additional services for email, communication, backup, monitoring, logging, tracing, security, domain names, networking etc.

Odoo.sh is one of the solutions that offers services around Odoo that meet cloud and modern principles such as DevOps. So, Why Terradoo Cloud ?

#### 1.1.2 Why ?

Because with Terradoo Cloud you can set up your own Multi Cloud Native Solution around Odoo Community.

Terradoo Cloud is 100% open source with AGPL-3.0 License and it will be based on other open source software projects.

### 1.1.3 How ?

Terradoo Cloud is a set of open source software working together to build a Multi Cloud Native open source solution for the Odoo Community.

You can choose your preferred Cloud Provider or set up a Multi Cloud Native Solution, Public, Private, or Hybrid.

Putting together all technologies around Odoo Community.

To improve and promote each technology and thus improve and promote each software community.

Besides, it is Community Driven as it is based on open source projects and it intends to improve and promote each project.

So, you can design a solution that meets your needs based on the proposals of Terradoo Cloud.

Terradoo Cloud aims to build a documentation reference as a Cookbook for each use case.

### 1.1.4 For What ?

To improve the Odoo Community ecosystem.

To improve all technologies used by Terradoo Cloud.

So, you can design your very own solution that meets your needs based on the proposed documented experiments, coded and tested proof of concepts shared by Terradoo Cloud.

## 1.2 Contribute

### 1.2.1 Organization

- Project Management Tool
- Project Documentation Site

### 1.2.2 Contribute

1. If you like this project give it a star.
2. If you want to follow you can subscribe and watch.
3. If you want to add changes or improvements, Fork this repository and contribute with Pull Requests.
4. If you want to be Collaborator and Team Player, I would like invite you, so let me know.
5. If you prefer, you can reach me by email at contact (at) terradoo.cloud. I'll be excited.

## 2.1 Design

### 2.1.1 Microservices Architecture

Pattern design: The Twelve-Factor APP Design

CNCF Overview Landscape

### 2.1.2 Considerations

- Design Solutions
  - Define Proof of Concept ( Business Study Case )
  - Define Business Requirements
  - Define Billing
  - Define Business SLI
  - Define Business SLO
  - Define Business SLA
  - Design Technical Solutions
    - \* Define Technical Requirements
    - \* Define Technical KPI
    - \* Design Infrastructure Architecture Solutions
    - \* Design Integration Solutions
    - \* Design Storage Solutions
    - \* Design Network Solutions
    - \* Design Deployment Solutions
    - \* Design Reliable Scalable Solutions
    - \* Design Security Solutions
    - \* Design Monitoring Solutions
    - \* Design Communications Solutions

### 2.1.3 General Workflow

- GitHub as VCS with Terraform templates
- Terraform Cloud Operator for Multi Cloud Infrastructure Layer
- Provision Kubernetes Layer
- Provision Helm3 Layer
- Provision custom charts from ArtifactHub for custom stack around Odoo Community

## 2.2 Solutions Approach

### 2.2.1 atScale Solutions

#### CNCF-based

- Is Open Source Stack
- Is Flexible and Decoupled with many possible solutions.

#### Hashicorp-based

- Provisioning Infrastructure: Terraform
- Service Mesh: Consul
- Security: Vault
- Application: Nomad



## TECHNOLOGIES

### 3.1 Infrastructure

#### Terraform

##### 3.1.1 Terraform

<https://github.com/hashicorp/terraform>

#### Terraform Google

<https://github.com/hashicorp/terraform-provider-google>

<https://github.com/terraform-google-modules>

#### Terraform AWS

<https://github.com/hashicorp/terraform-provider-aws>

#### Terraform Azure

<https://github.com/Azure/terraform>

<https://github.com/terraform-providers/terraform-provider-azurerm>

##### 3.1.2 Terragrunt

<https://github.com/gruntwork-io/terragrunt>

### 3.1.3 Terraform Cloud

<https://www.terraform.io/docs/cloud/overview.html>

## 3.2 CDN

### 3.2.1 Dragonfly

<https://d7y.io/en-us/>

[https://d7y.io/en-us/docs/overview/what\\_is\\_dragonfly.html](https://d7y.io/en-us/docs/overview/what_is_dragonfly.html)

<https://github.com/dragonflyoss/Dragonfly>

### 3.2.2 KubeCDN

<https://github.com/ilhaan/kubeCDN>

## 3.3 DNS

### 3.3.1 CoreDNS

<https://coredns.io/>

<https://github.com/coredns>

<https://coredns.io/plugins/kubernetes/>

<https://coredns.io/plugins/cloudndns/>

### 3.3.2 ExternalDNS

<https://github.com/kubernetes-sigs/external-dns>

## 3.4 API Gateway

### 3.4.1 Kong

<https://docs.konghq.com/>

<https://github.com/Kong/kong>

## 3.5 Proxy

### 3.5.1 Envoy

<https://www.envoyproxy.io/>

<https://github.com/envoyproxy/envoy>

### 3.5.2 Nginx

<https://github.com/nginx/nginx>

### 3.5.3 Traefik

<https://traefik.io/>

<https://github.com/traefik/traefik>

<https://github.com/traefik/traefik-helm-chart>

## 3.6 Service Mesh

### 3.6.1 Istio

<https://istio.io/>

<https://github.com/istio/istio>

### 3.6.2 Consul

<https://github.com/hashicorp/consul>

<https://learn.hashicorp.com/tutorials/consul/kubernetes-deployment-guide>

### 3.6.3 Linkerd

<https://linkerd.io/>

<https://github.com/linkerd>

<https://github.com/linkerd/linkerd2>

<https://linkerd.io/2/overview/>

## 3.7 CI/CD

### 3.7.1 Git Hub

#### Use to

For public repositories and project management.

#### Actions

### 3.7.2 Run Bot

#### Odoo Run Bot

<https://github.com/odoo/runbot>

#### OCA Run Bot Addons

<https://github.com/OCA/runbot-addons>

### 3.7.3 Argo Project

<https://argoproj.github.io/>

<https://github.com/argoproj/gitops-engine>

<https://github.com/argoproj/argo-cd>

<https://github.com/argoproj/argo-helm>

### 3.7.4 Git Lab

<https://docs.gitlab.com/charts/>

<https://docs.gitlab.com/charts/installation/>

<https://docs.gitlab.com/charts/installation/cloud/gke.html>

<https://docs.gitlab.com/runner/install/kubernetes.html>

### 3.7.5 Harbor

<https://goharbor.io/>

<https://goharbor.io/docs/2.1.0/install-config/harbor-ha-helm/>

<https://goharbor.io/community/>

<https://github.com/goharbor/harbor>

<https://github.com/goharbor>

### 3.7.6 Spinnaker

<https://spinnaker.io>

<https://github.com/spinnaker>

## 3.8 Communications

### 3.8.1 Email

#### Mailu

<https://mailu.io/1.7/>

<https://github.com/Mailu/Mailu>

#### Haraka

<https://haraka.github.io/>

#### Poste

<https://poste.io/>

### 3.8.2 Asterisk

<https://github.com/asterisk>

<https://github.com/CyCoreSystems/asterisk>

<https://github.com/CyCoreSystems/asterisk-k8s-demo>

<https://github.com/CyCoreSystems/asterisk-config>

### 3.8.3 Twilio

<https://github.com/twilio>

### 3.8.4 Open VPN

<https://github.com/OpenVPN>

## 3.9 Deployment

### 3.9.1 Kubernetes

#### K8s

<https://github.com/kubernetes>

#### Terraform Provider Kubernetes

<https://github.com/hashicorp/terraform-provider-kubernetes>

#### Package Manager

<https://helm.sh>

<https://github.com/helm>

#### Artifact Hub

<https://artifacthub.io/>

#### OpenKruise

<https://github.com/openkruise>

[https://openkruise.io/en-us/docs/what\\_is\\_openkruise.html](https://openkruise.io/en-us/docs/what_is_openkruise.html)

#### Kustomize

<https://kustomize.io/>

#### Operator Framework

<https://operatorframework.io/>

#### Rancher

<https://github.com/rancher/rancher>

<https://rancher.com/>

## Bitnami Kubernetes Production Runtime

<https://kubeprod.io/>

<https://github.com/bitnami/kube-prod-runtime>

## 3.9.2 Doodba

### Doodba

<https://github.com/Tecnativa/doodba>

### Doodba Copier Template

<https://github.com/Tecnativa/doodba-copier-template>

## 3.10 Monitoring and Logging

### 3.10.1 Fluentd

<https://www.fluentd.org/>

<https://github.com/fluent/fluentd>

### 3.10.2 Prometheus

<https://prometheus.io/>

<https://prometheus.io/docs/introduction/overview/>

<https://github.com/prometheus/prometheus>

### 3.10.3 Open Distro for Elasticsearch

<https://opendistro.github.io/for-elasticsearch-docs/docs/install/helm/>

## 3.11 Security

### 3.11.1 Vault

<https://www.vaultproject.io/docs/platform/k8s>

<https://artifacthub.io/packages/helm/hashicorp/vault>

### 3.11.2 Falco

<https://falco.org/>

<https://github.com/falcosecurity/>

<https://artifacthub.io/packages/falco/security-hub/gke>

### 3.11.3 secureCodeBox

<https://docs.securecodebox.io/>

### 3.11.4 klustAir

<https://www.klustair.com/>

<https://github.com/klustair/klustair-helm>

### 3.11.5 Wazuh

#### The Open Source Security Platform

<https://github.com/wazuh>

#### Wazuh on Kubernetes

<https://github.com/wazuh/wazuh-kubernetes>

## 3.12 Odoo Community

### 3.12.1 Odoo Community

#### Odoo Community Association

<https://github.com/OCA>

#### Bitnami Odoo

<https://artifacthub.io/packages/helm/bitnami/odoo>



## 3.13 Odoo Storage

### 3.13.1 PostgreSQL

#### PostgreSQL

<https://artifacthub.io/packages/helm/bitnami/postgresql>

#### PostgreSQL HA

<https://artifacthub.io/packages/helm/bitnami/postgresql-ha>



## PROVIDERS

### 4.1 GKE

<https://cloud.google.com/kubernetes-engine>

### 4.2 AKS

### 4.3 EKS