HashiCorp
Terraform

Terraform Enterprise Active/Active

May 2022

Agenda

- Overview

- Migrate

- Lifecycle Operations

Overview

Overview

Terraform Enterprise includes support for an Active/Active deployment mode. This deployment mode allows for up to three nodes to be operational at the same time to support increased reliability and performance as you scale your TFE usage.

Supported Platforms

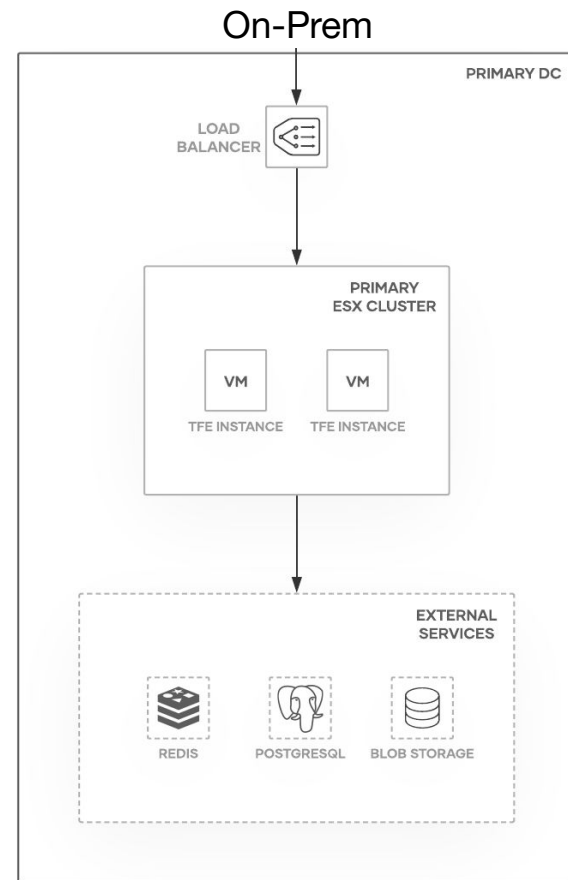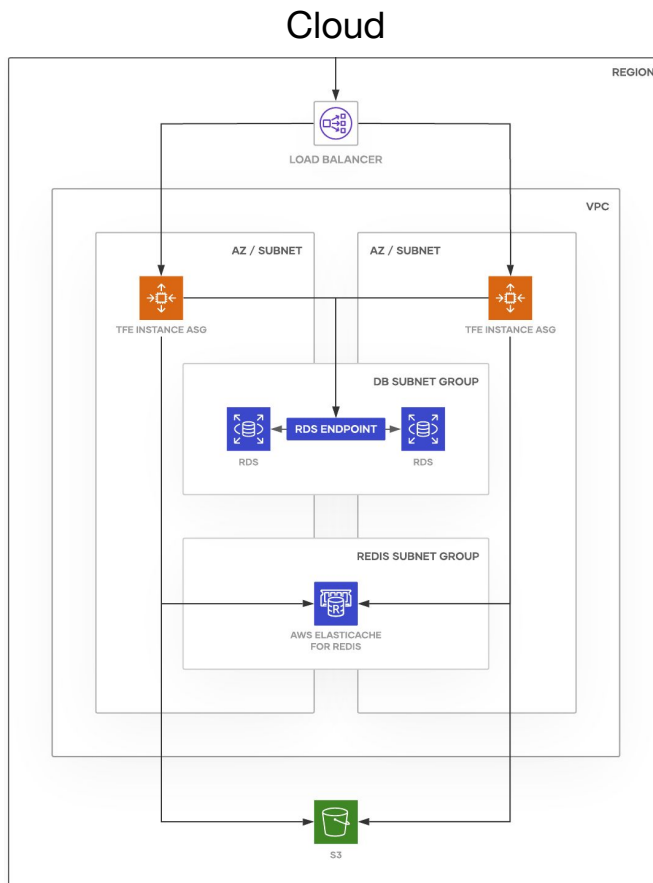**Active/Active is only supported with external services**

Deployment Method	Operational Mode	vmware	AWS	Azure	GCP
Standalone	Mounted Disk	✅	✅	✅	✅
	External Services	✅	✅	✅	✅
Active/Active	Mounted Disk	☒	☒	☒	☒
	External Services	✅	✅	✅	✅

Is Active/Active right for your organization?

- Expertise to manage and maintain external Postgres and Redis

- Automate installation and configuration of TFE node

- Headless management - a new CLI based tool has been developed that replaces the Replicated Admin Console for administration

- Observability of multiple TFE nodes and external services

Active/Active Architecture

Cloud

REGION

LOAD BALANCER

VPC

AZ / SUBNET

AZ / SUBNET

TFE INSTANCE ASG

TFE INSTANCE ASG

DB SUBNET GROUP

RDS ENDPOINT

RDS

RDS

REDIS SUBNET GROUP

AWS ELASTICACHE
FOR REDIS

S3

On-Prem

PRIMARY DC

LOAD
BALANCER

PRIMARY
ESX CLUSTER

VM

VM

TFE INSTANCE

TFE INSTANCE

EXTERNAL
SERVICES

REDIS

POSTGRESQL

BLOB STORAGE

Network Changes

Port Requirements

Active/Active has additional port requirements that will need to be opened within your security groups or firewalls to allow for Redis and Vault HA capabilities to function correctly.

Port	Description
6379	Redis - traffic needs to be allowed between TFE nodes and Redis service
8201	Vault - traffic needs to be allowed between TFE nodes for Vault HA
~~8800~~	Replicated Admin Console - This port should now be **closed**

Wait for Installation to Complete

```
> replicatedctl app status
[
    {
        "AppID": "218b78fa2bd6f0044c6a1010a51d5852",
        "Sequence": 504,
        "PatchSequence": 0,
        "State": "starting",
        "DesiredState": "started",
        "IsCancellable": false,
        "IsTransitioning": true,
        "LastModifiedAt":
"2021-01-07T21:15:11.650385151Z"
    }
]
```

Disable Replicated Admin Console

```
> sudo bash ./install.sh disable-replicated-ui
```

Validate Terraform App functionality

Lifecycle Operations

Upgrade Overview

The upgrade process for Active/Active is a bit different compared to Standalone and air gapped deployments. Active/Active requires that the upgrade follows our automated installation process.

- **Capture a backup prior to any upgrade attempts!**
- Establish cadence to patch/upgrade your TFE env regularly (TFE releases are ~monthly)
- Upgrade **does** require downtime when scaling the instance count to 0

Upgrade Process

Process to upgrade TFE with minimum downtime

1. Run `tfe-admin node-drain` command on each node to complete active work and stop new work from being processed

2. Pin a new version by setting the ReleaseSequence

3. Scale down to zero nodes

4. Scale up to one node using a new TFE image, and wait for upgrade to complete, validate services are operating normally before bring on additional nodes.

Generating a Support Bundle


```
> tfe-admin support-bundle



> replicated admin support-bundle
```

TFE Health Check

```
> tfe-admin health-check


> replicatedctl system status


> replicatedctl app status
```

Thank You