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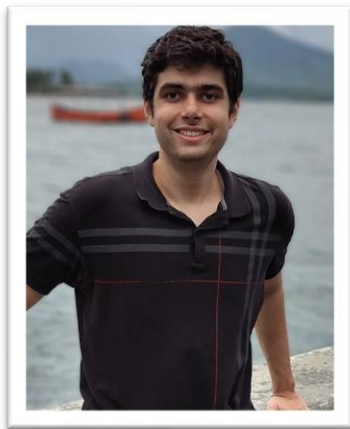
#CiscoLiveAPJC



Automating Cisco Secure Workload with Terraform for Efficient Micro-Segmentation

Karmanya Dadhich, Technical Marketing Engineer
GitHub: @kadadhic
DEVNET-2314

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Karmanya Dadhich (KD)
Technical Marketing Engineer

- Based out of Bengaluru, India
- Handles virtual firewalls and everything automation
- Enjoys
 - Food
 - Sleeping
 - Cricket

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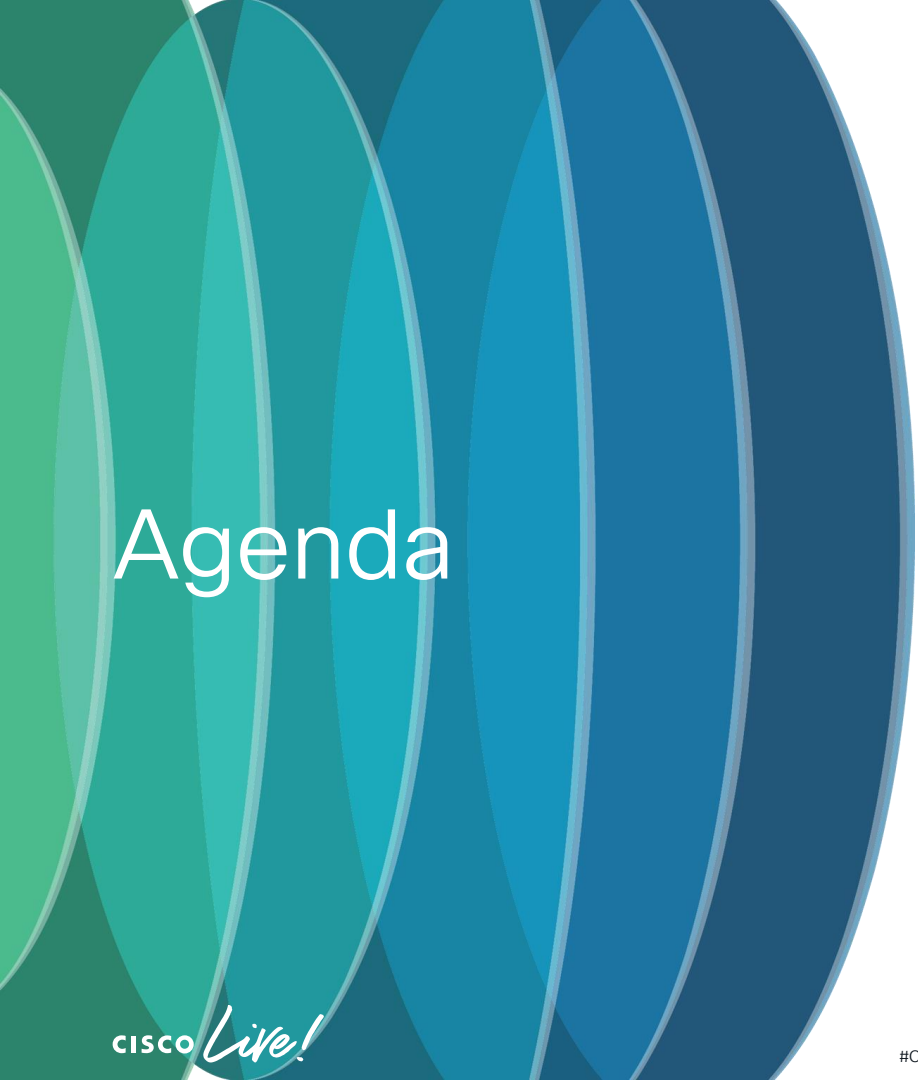
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Agenda

- Introduction
- What is Terraform?
- Terraform Demo
- CI/CD Pipeline Demo
- Terraform v/s others
- Conclusion

How many hours are going into managing security policies?

Introduction

Problem

The whole micro-segmentation journey from discovering workloads to enforcing policies involves a lot of manual processes and know-how.

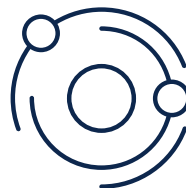
Solution

Automate configuration on secure workload using Terraform to streamline your CI/CD pipeline.



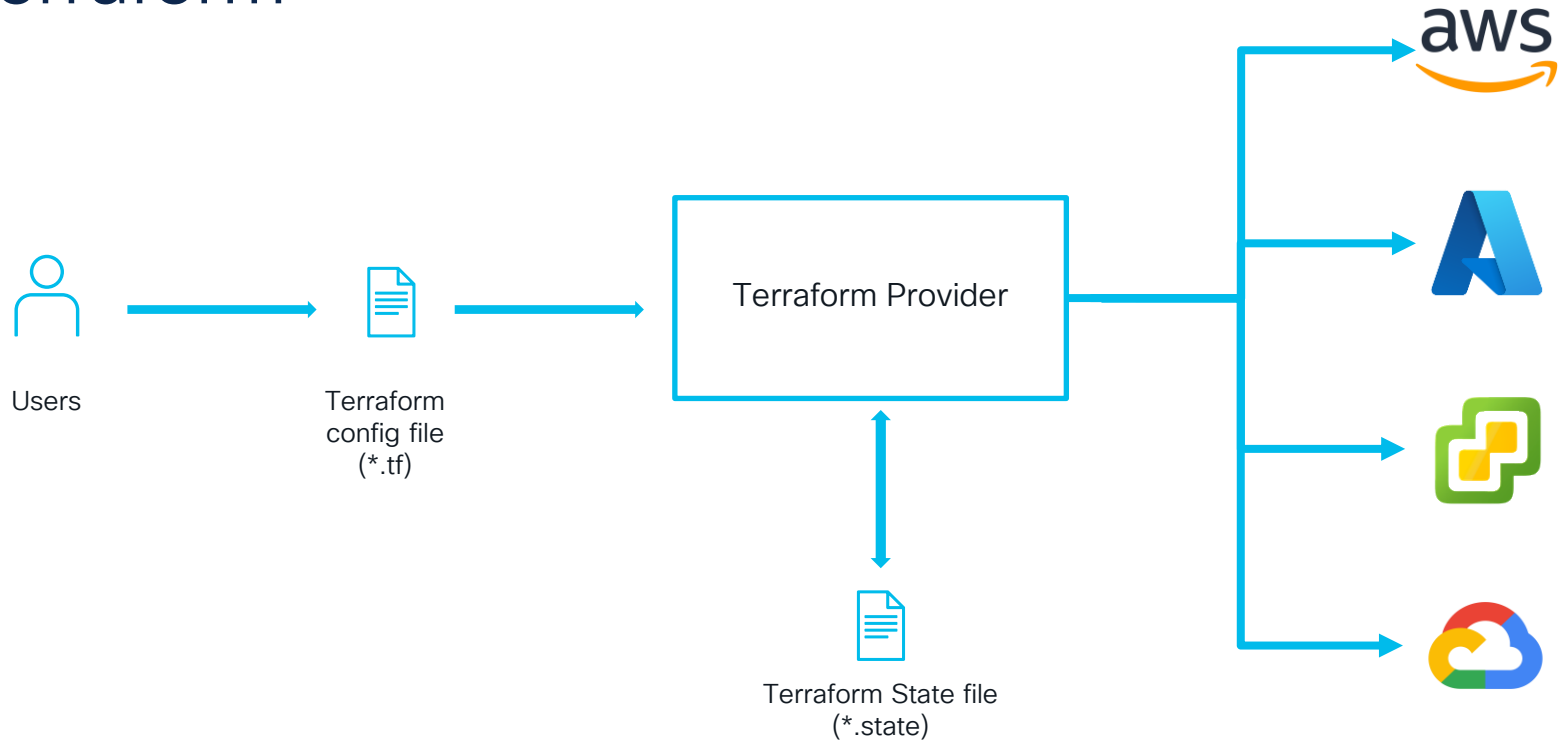
Terraform

+

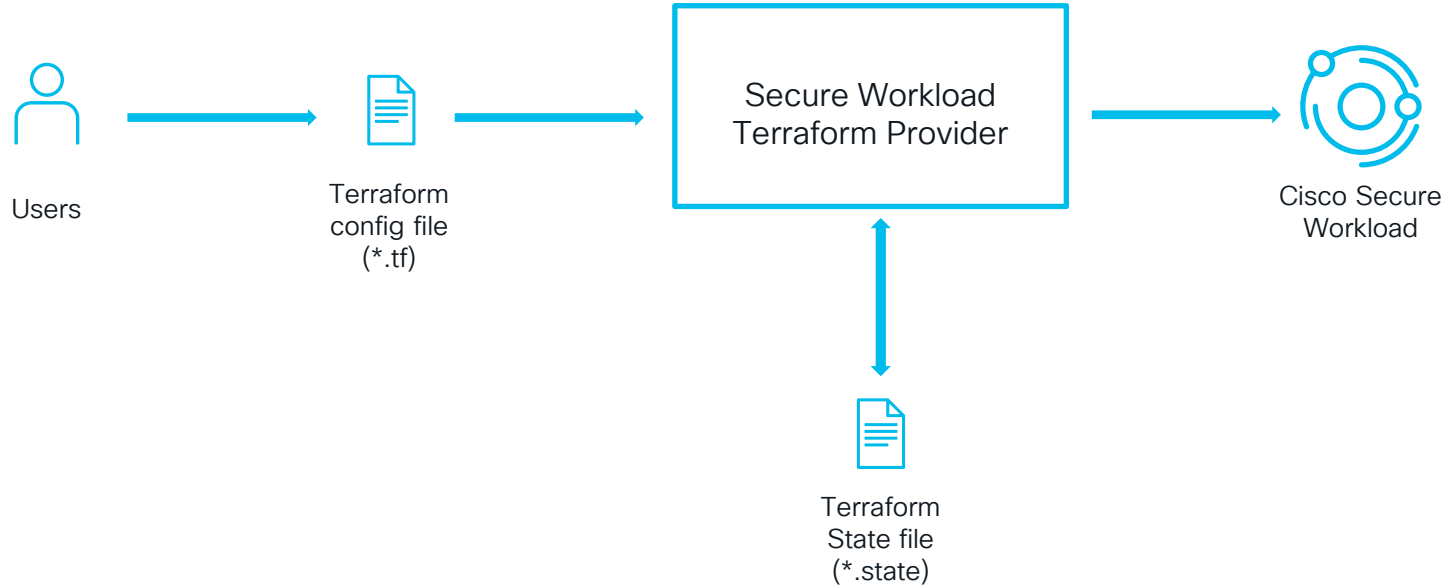


Cisco Secure Workload

Terraform

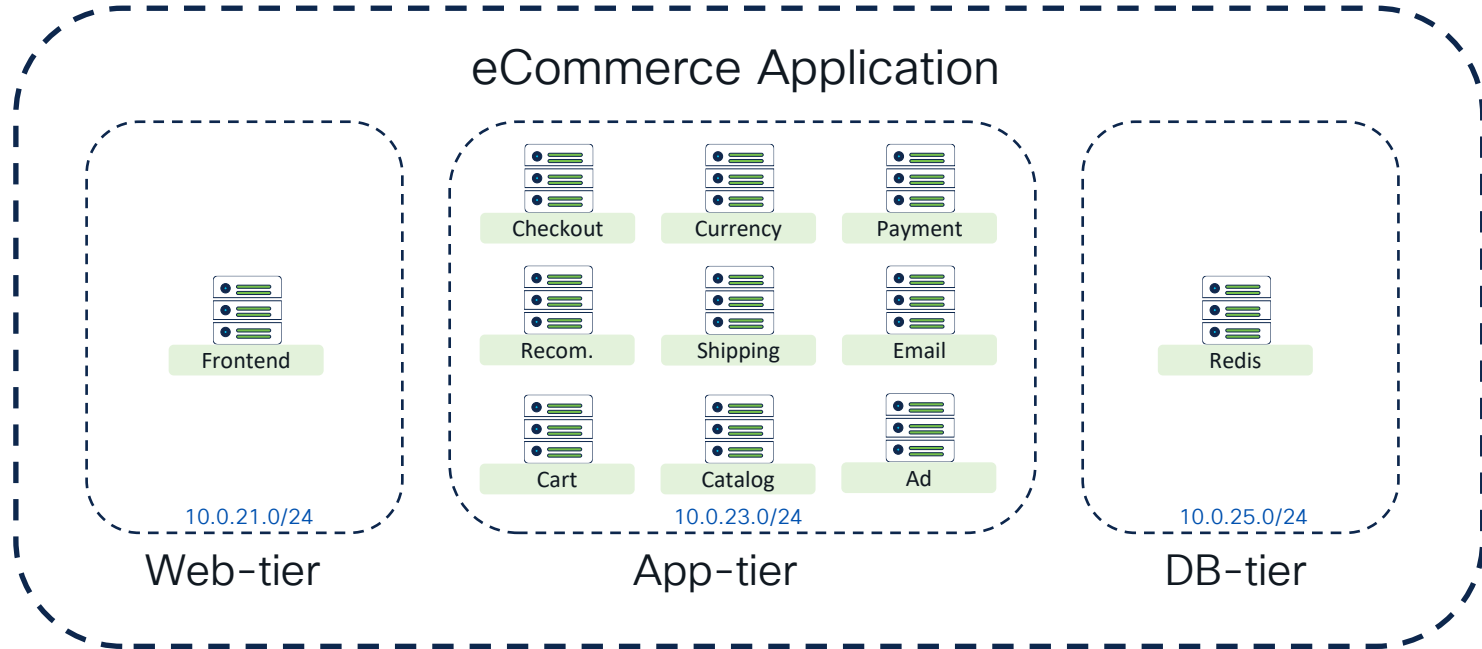


Terraform

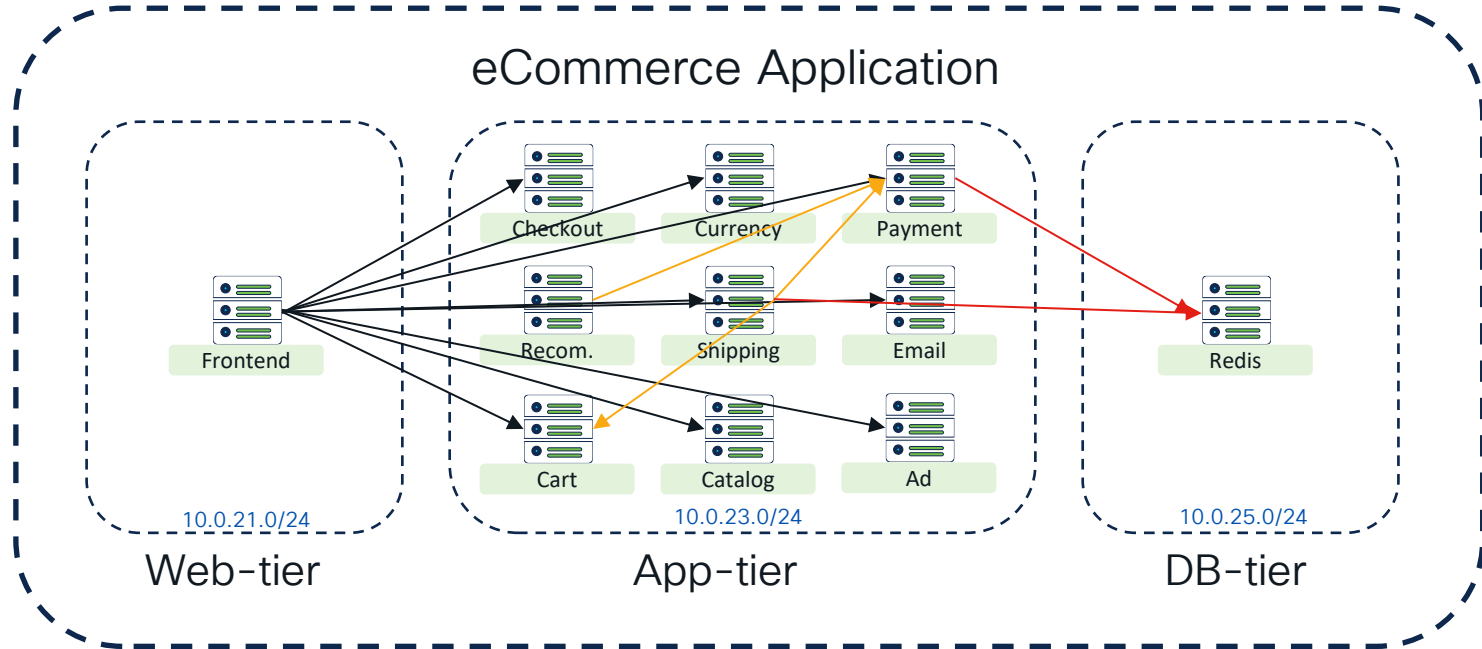


Terraform Demo

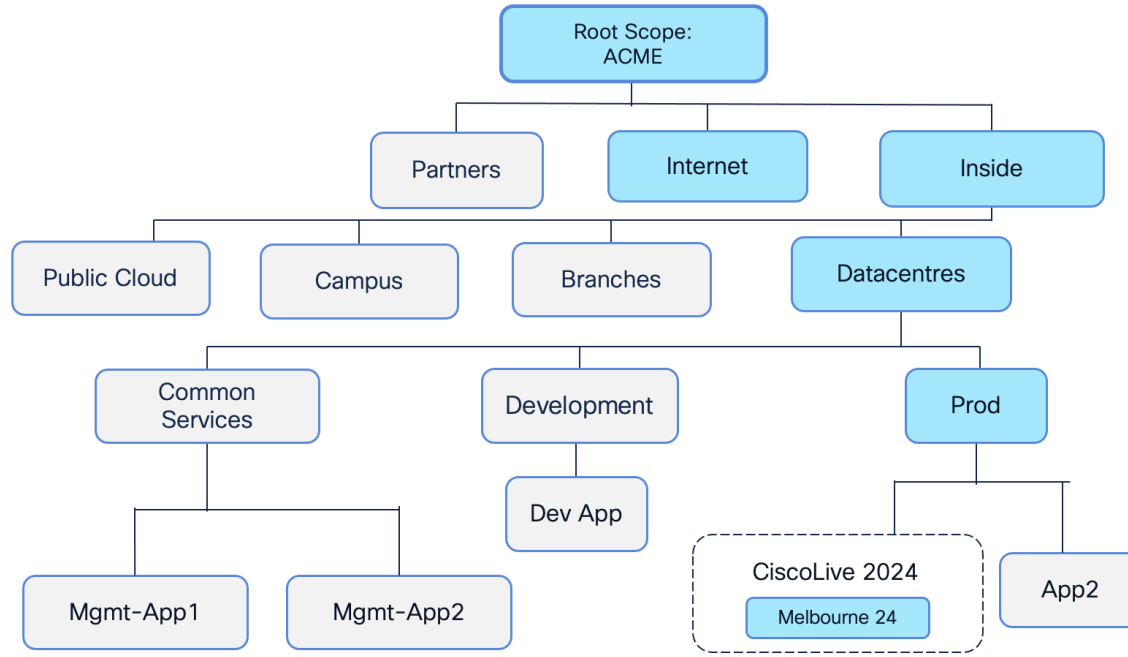
Application Environment



Application Environment



Scope- Organization Structure Definition



Scope Levels

(1) Organization

(2) Location

(3) Environment

(4) Application

Aim

Complete the 5-step end-to-end journey for micro-segmentation

Labelling

The workloads should be labelled to ensure they belong to the correct application.

Cluster & Filter

Clusters and filters will be used to create policies

Policy Enforcement

Enforcing the policy that was created or discovered.

1

2

3

4

5

Scope & Workspace

Scope is a way to define an organisation's hierarchy.

Workspace is a collection of workloads that run an application.

Policy Creation

Creating policies manually or using the Automatically Discover Policy feature

terraform init
terraform apply

CI/CD Pipeline Demo

Kubernetes Application (3-Tiered)

```
kadadhic@KADADHIC-M-L059 ~ % kubectl get pods -n webapp
```

NAME	READY	STATUS	RESTARTS	AGE
coreapp-6c86959b79-dz69t	1/1	Running	1 (20h ago)	47h
coreapp-6c86959b79-qngx7	1/1	Running	1 (20h ago)	2d
mysql-5fdb89c979-jwtqj	1/1	Running	0	47h
webpod-5cfbbdd749-mgq5x	1/1	Running	0	47h
webpod-5cfbbdd749-wfx54	1/1	Running	0	2d
webpod-5cfbbdd749-wzcnm	1/1	Running	0	2d

```
kadadhic@KADADHIC-M-L059 ~ % kubectl get svc -n webapp
```

```
kadadhic@KADADHIC-M-L059 ~ % kubectl get svc -n webapp
```

NAME	TYPE	CLUSTER-IP	EXTERNAL-IP	PORT(S)	AGE
app-service	ClusterIP	10.28.90.182	<none>	3000/TCP	141d
db-service	ClusterIP	10.28.83.119	<none>	3306/TCP	141d
web-lb-service	LoadBalancer	10.28.92.96	104.196.150.41	8080:32293/TCP	141d

Why Terraform?

1. Declarative in nature and not procedural
2. Plug n Play in any CI/CD environment
3. Creates mutable infrastructure
4. Supports deletion of any resource
5. Detailed lifecycle management

Conclusion

1. Great for configuration management
2. Used in the field by customers for automated policy changes
3. Moves with your infrastructure
4. Converts micro-segmentation into a background process so you can focus on creation instead of just security

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Contact me at: kadadhic@cisco.com

Keynote Deep Dives

Wednesday
10:30am – 11:30am



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