



# TURN IT UP

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The bridge to possible



# Cisco ACI as Code

Your Network as Part of the CI/CD Process with Cisco ACI and Terraform

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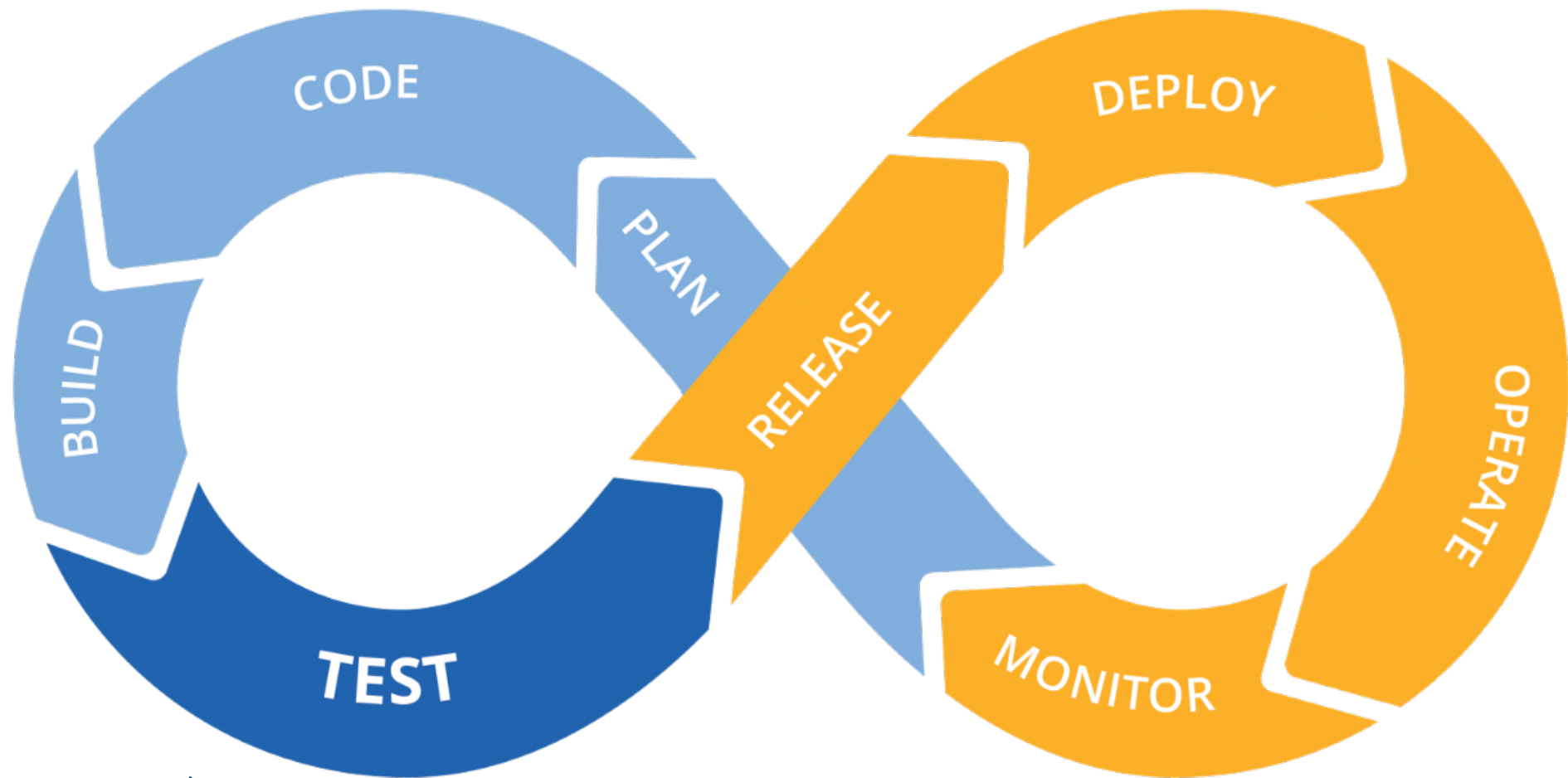
# Agenda

- CI/CD
- Infrastructure as Code
- Cisco ACI as Code
- Demo

# CI/CD

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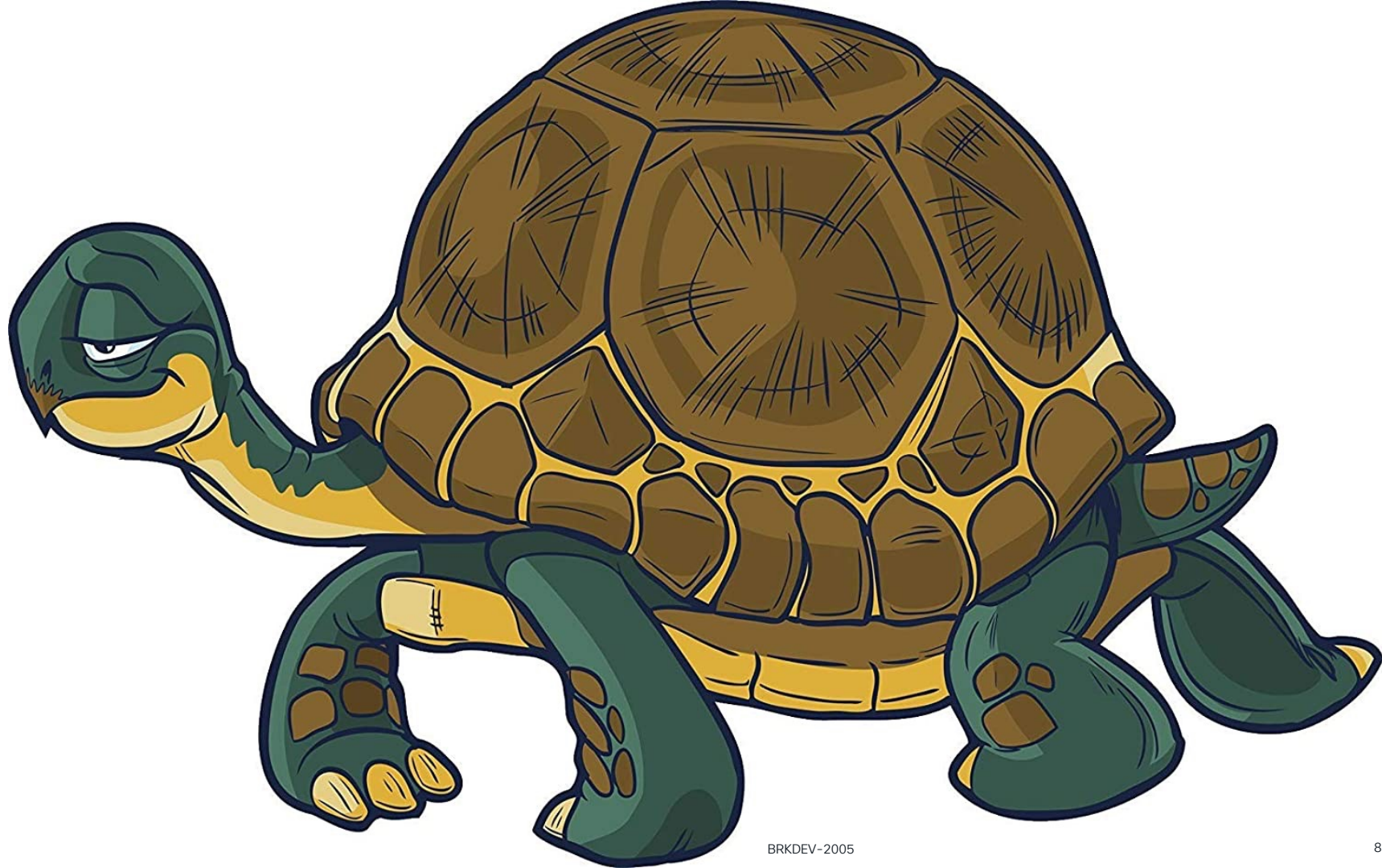








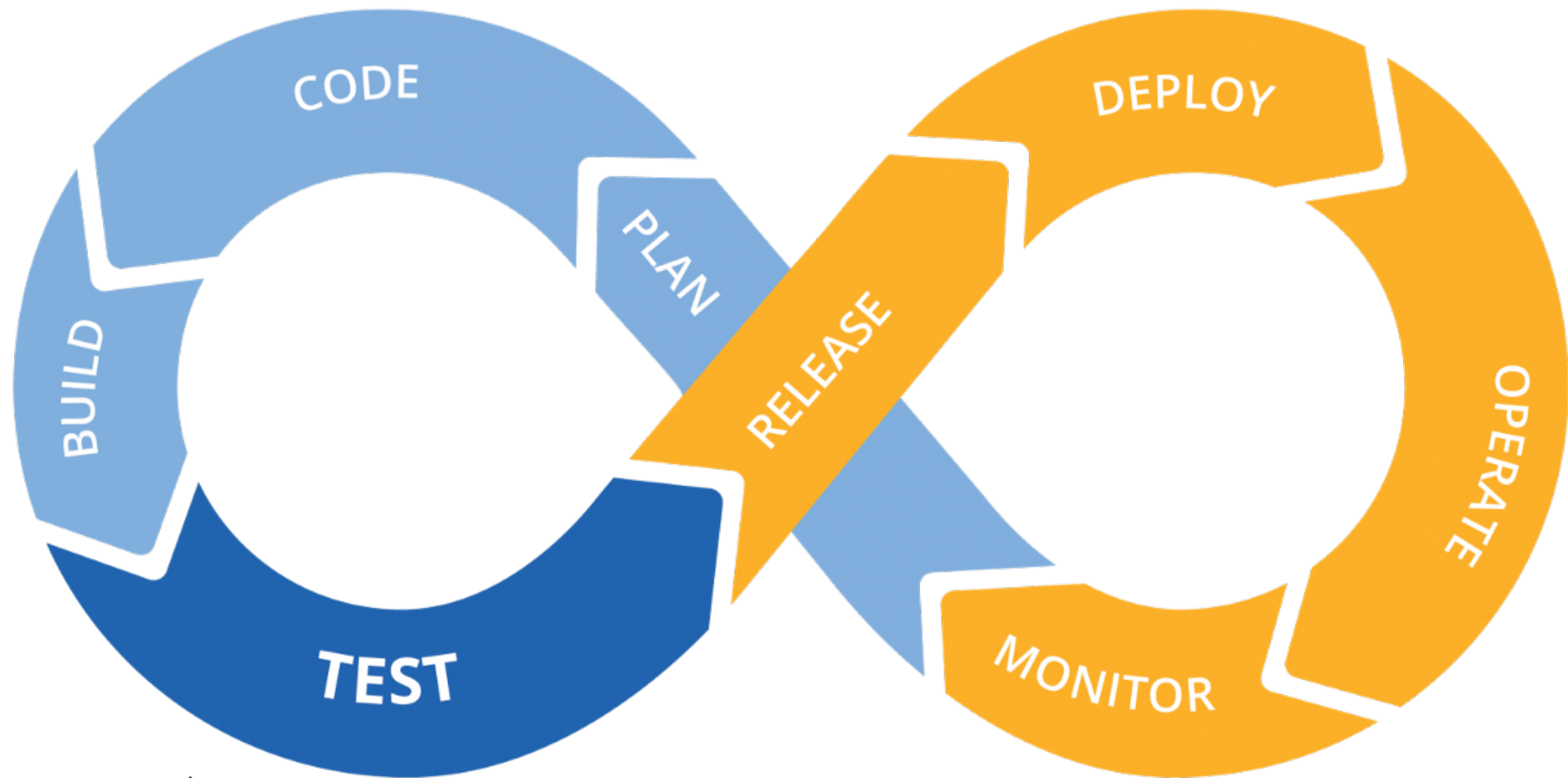






# STILL WAITING









# Infrastructure as Code





# Infrastructure as Code (IaC) – What/Why/How

- Automate the provisioning and management of the technology stack
- Translate manual tasks into reusable, robust, distributable code
- Rely on practices that have been successfully used for years in software development (version control, automated testing, release tagging, continuous delivery, etc.)
- Benefits: much higher delivery speed; significant reliability boost

# Why Infrastructure-as-Code (IaC)?



# What is Terraform?



- Open-source Infrastructure Provisioning Tool
- Commercial support from HashiCorp
- Declarative and idempotent
- Immutable infrastructure concept
- Can manage a wide range of systems:  
VMs, network devices, cloud instances, etc.
- Agentless, single binary file
- Zero server-side dependencies

# Cisco Data Center Networking Providers



HashiCorp

**Terraform**

ACI  
Cloud / Onprem



Multi Site  
Orchestrator



Available Today

Data Center  
Network  
Manager



Private Beta



# Common components of a CI/CD Pipeline

Code



Source Control



Pipeline / Orchestrator



# Declarative vs Imperative

- Define **what** the eventual target configuration should be  
e.g., 1 Tenant with 2 BDs and 2 EPGs
- Define the desired state
- Automation is responsible for the desired state to be reflected in the infrastructure
- Define **how** the infrastructure should be changed  
e.g., Add BD X and EPG Y
- Automate a common use case (e.g. add a network segment)
- Automation defines steps (workflow) to end with the desired conclusion

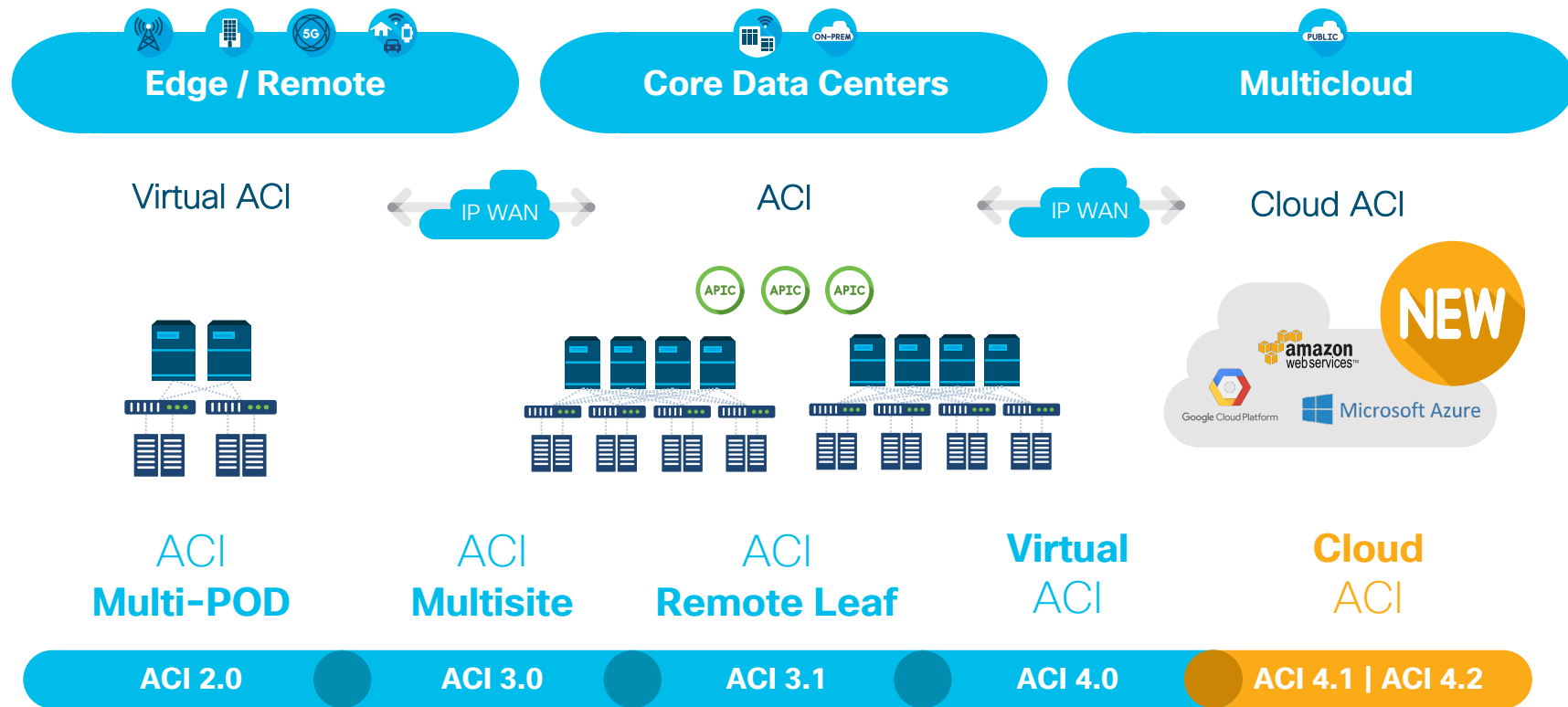


# Cisco ACI as Code



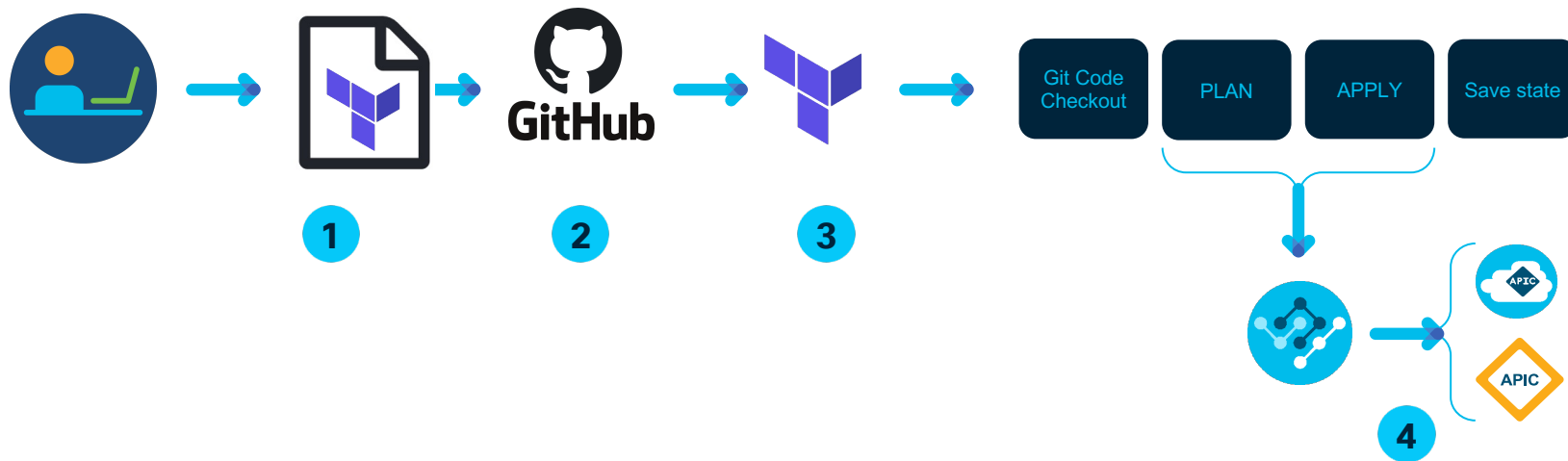


## ACI Anywhere

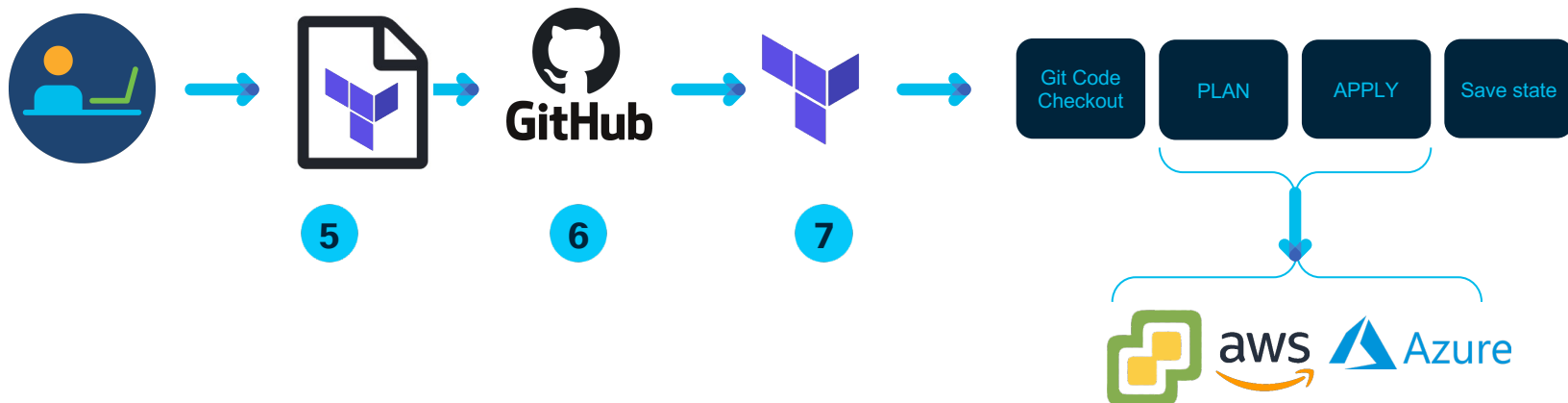




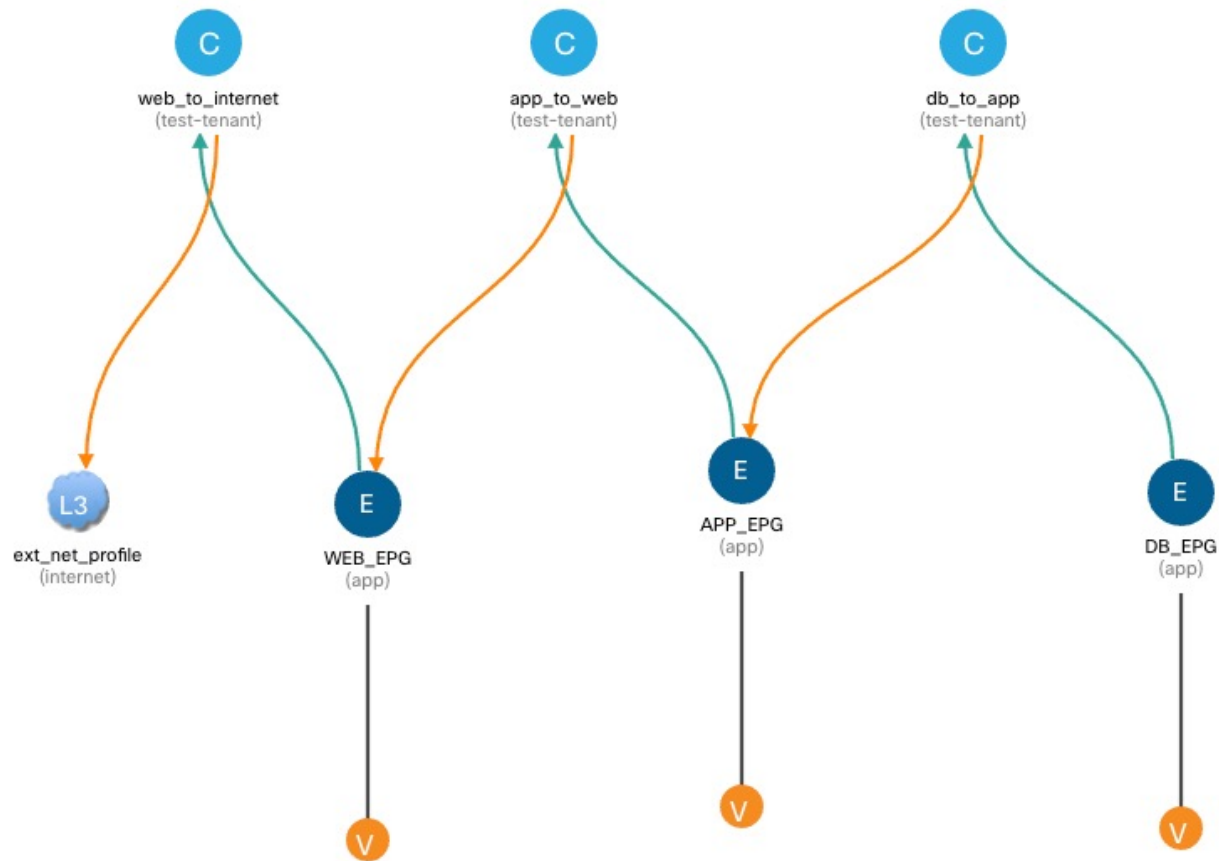
# What our workflow looks like



# What our workflow looks like (continued)



# Demo





*All the code:*

<https://github.com/gnuowned/aci-terraform>



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# Thank you

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