

ALL DAY DEVOPS

NOVEMBER 6, 2019

Michael Fraser, Co-Founder & CEO  
Refactr

Modern Solution  
Delivery: IT as Code



## SPONSORS

Sponsorship packages for All Day DevOps are available. If your organization is interested, please contact us for details.

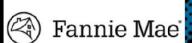
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### COMMUNITY ADVOCATES AND VIEWING PARTY SPONSORS



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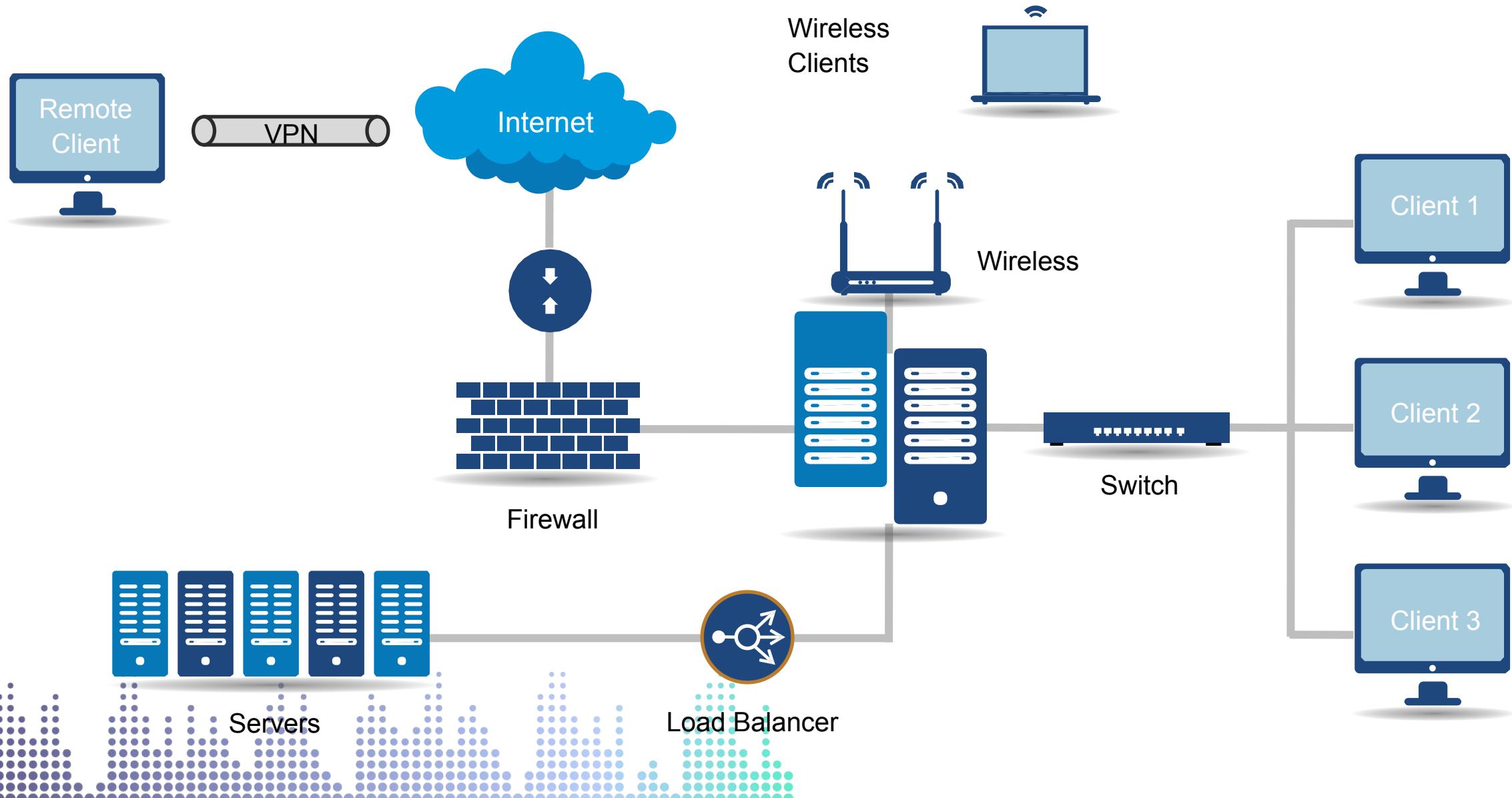


# Who is Mike Fraser?

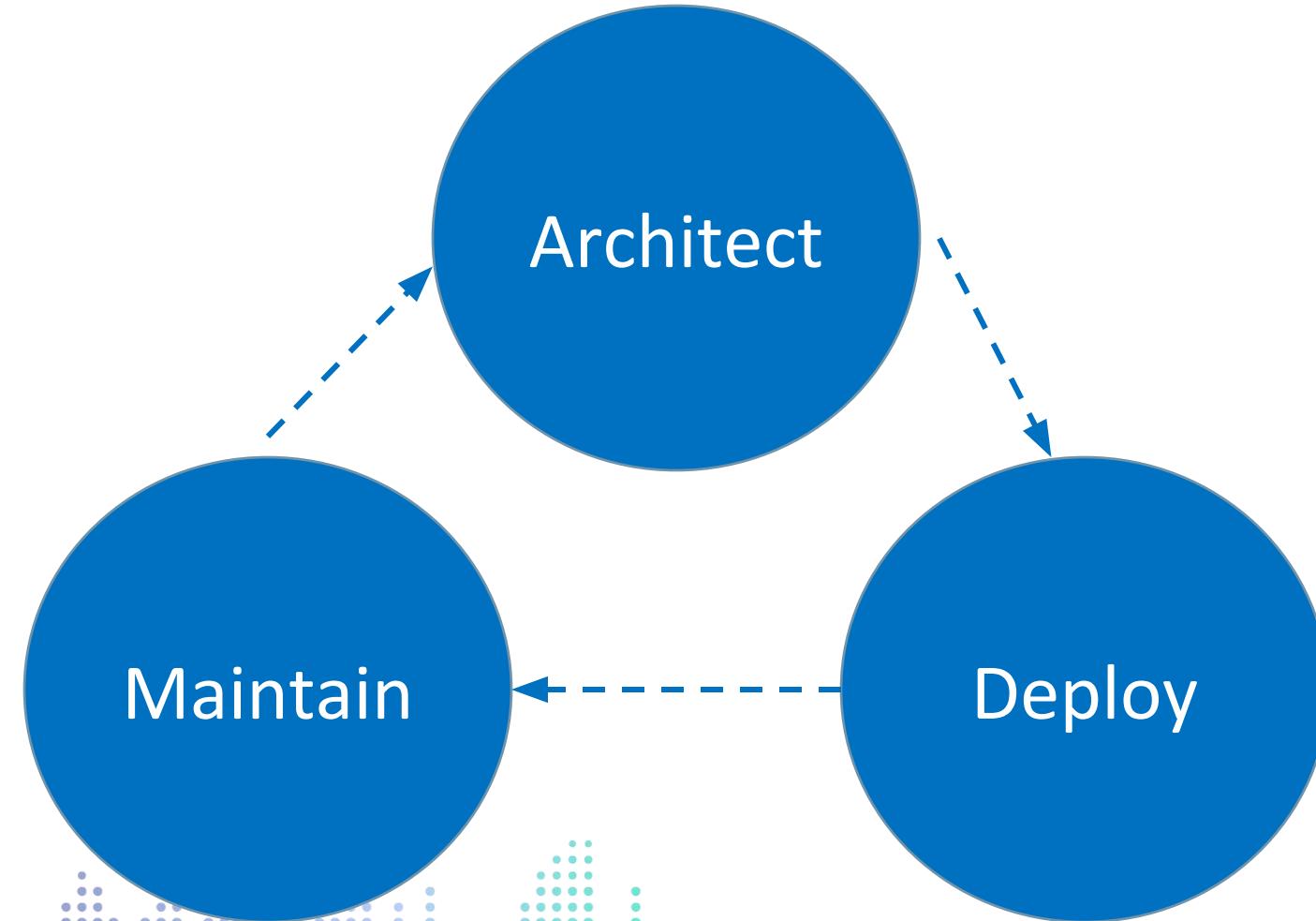
- Air Force veteran, worked on F-15 Armament Systems
- Specialized in Cybersecurity in the Air National Guard
- Worked at Optiv, as a Senior Cloud Security Architect
- Co-Founder of a DevSecOps Automation startup, Refactr
- Master of Computer Science at Seattle University, June 2019
- Adjunct Instructor at Seattle Central College, DevOps / Security



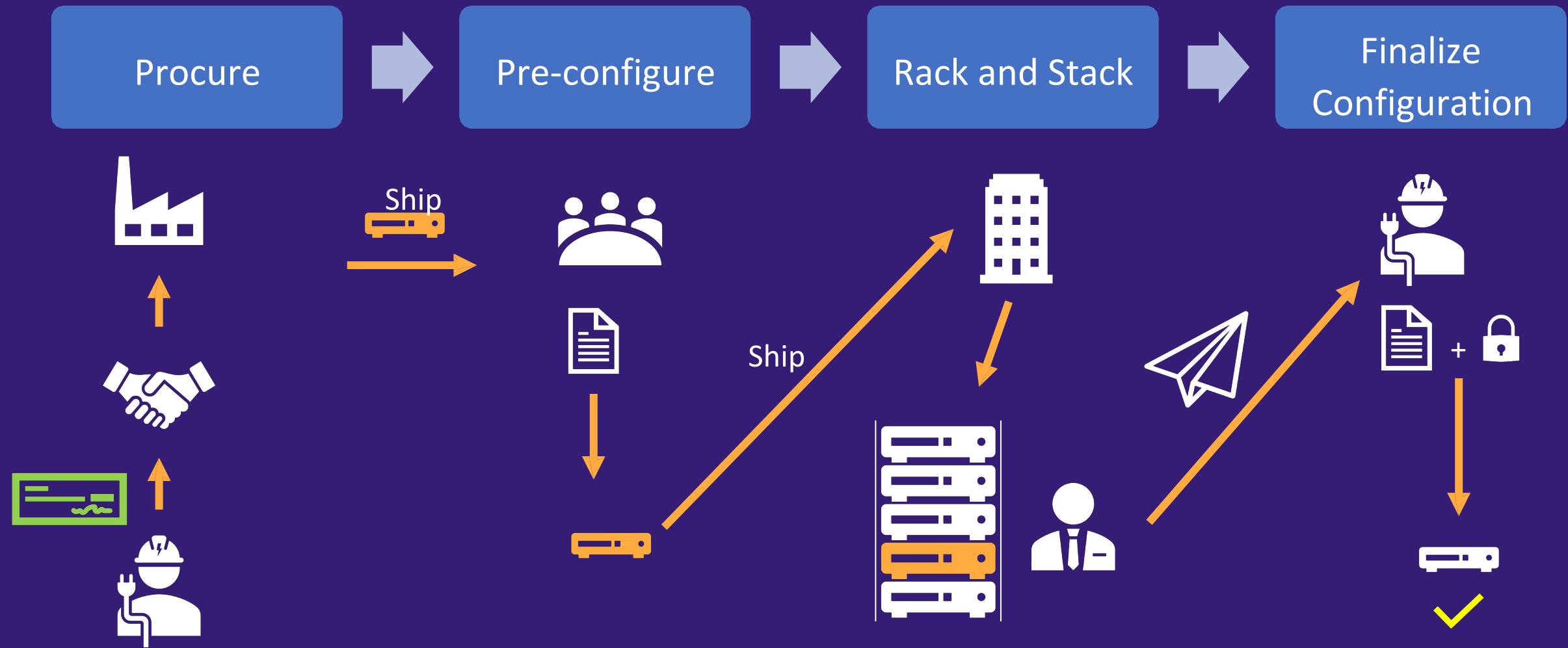
# What is Traditional IT?



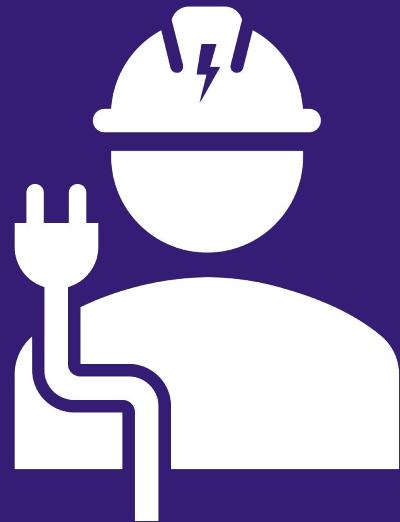
# Traditional IT Process



# Deploying Traditional IT

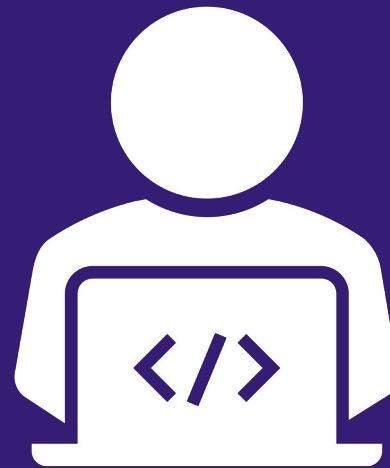


# What is IT as Code?



Traditional IT

VS.



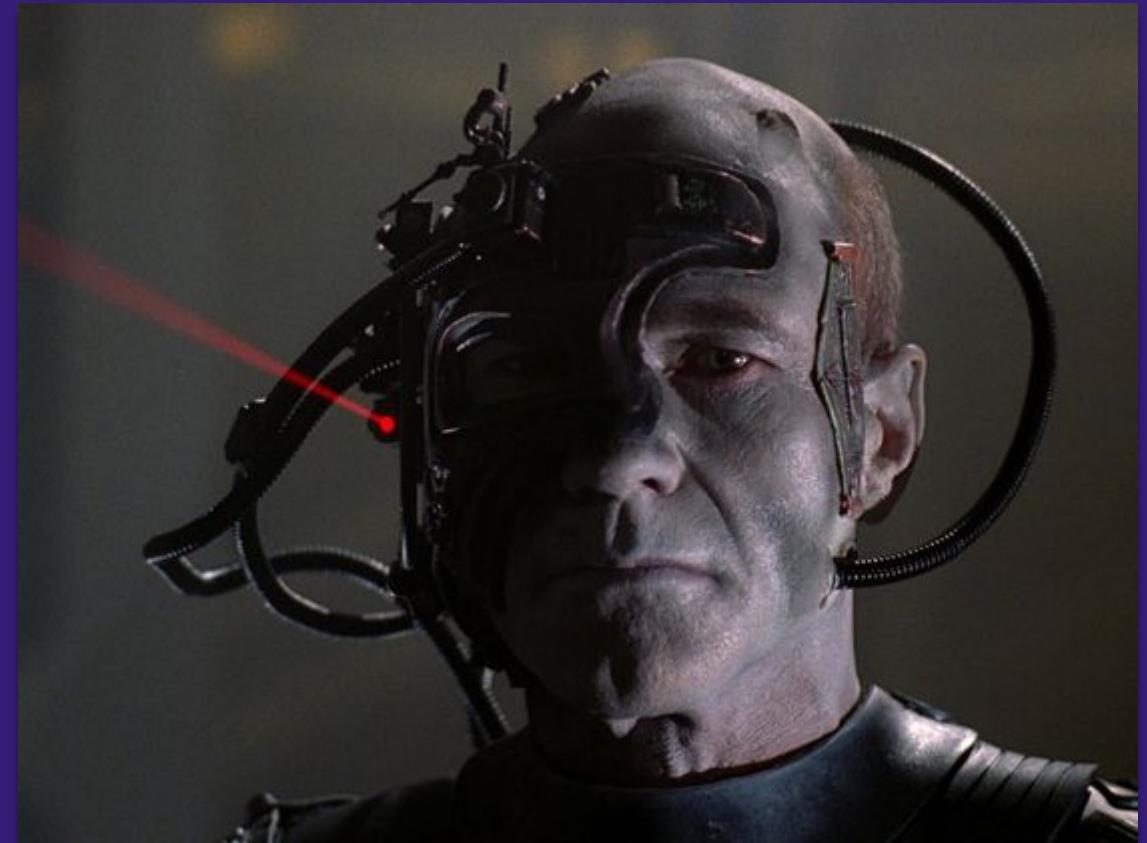
IT as Code

The primary difference between traditional IT and IT as Code is the mindset, method, and tools used to solve IT problems, deploy new solutions, and to deliver solutions in an agile approach.

# Assimilate to IT as Code

**"You will be assimilated, resistance is futile."**

- Borg, Star Trek, Next Generation



# Values of IT as Code

Instead of

configuring by hand

we

automate.

Instead of

manually responding  
to alerts and events

we

create automation that helps cut down on  
labor overhead and eliminates human error.

Instead of

being reactive

we

are proactive and use automation to deliver IT  
as Code solutions in an agile approach.

Instead of

configuring security  
manually

we

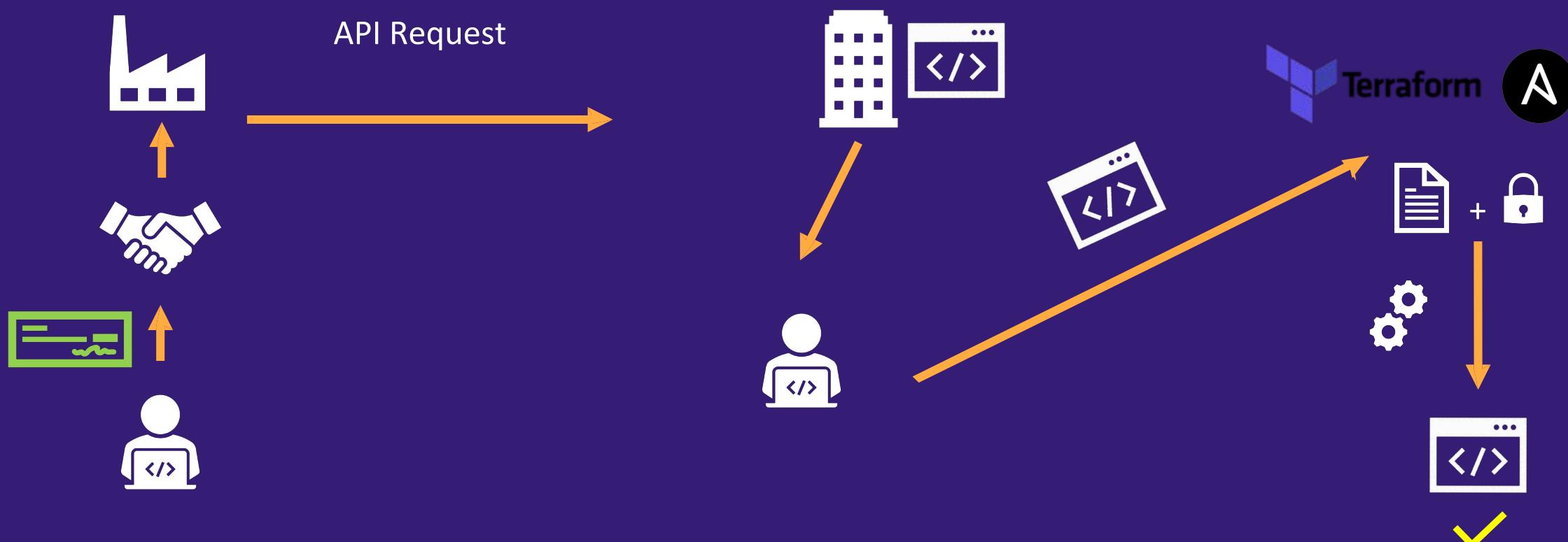
enforce security controls programmatically.

# IT as Code via DevOps Principles

Procure

Codify

Run Job



Using a DevOps engineer mindset, we move IT from manual to automated solutions using DevSecOps automation tools and automation pipelines.

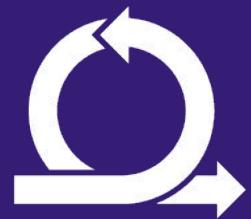
# IT as Code Goals



Automation



Integration



Agile Delivery

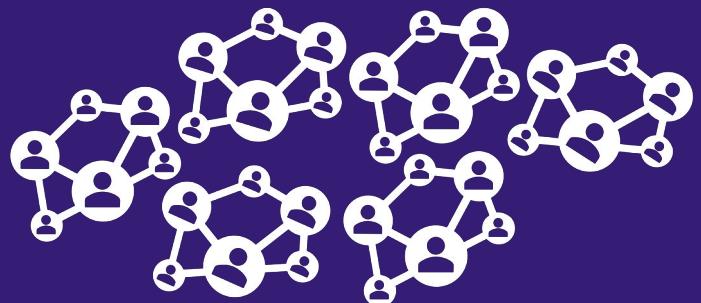


Security

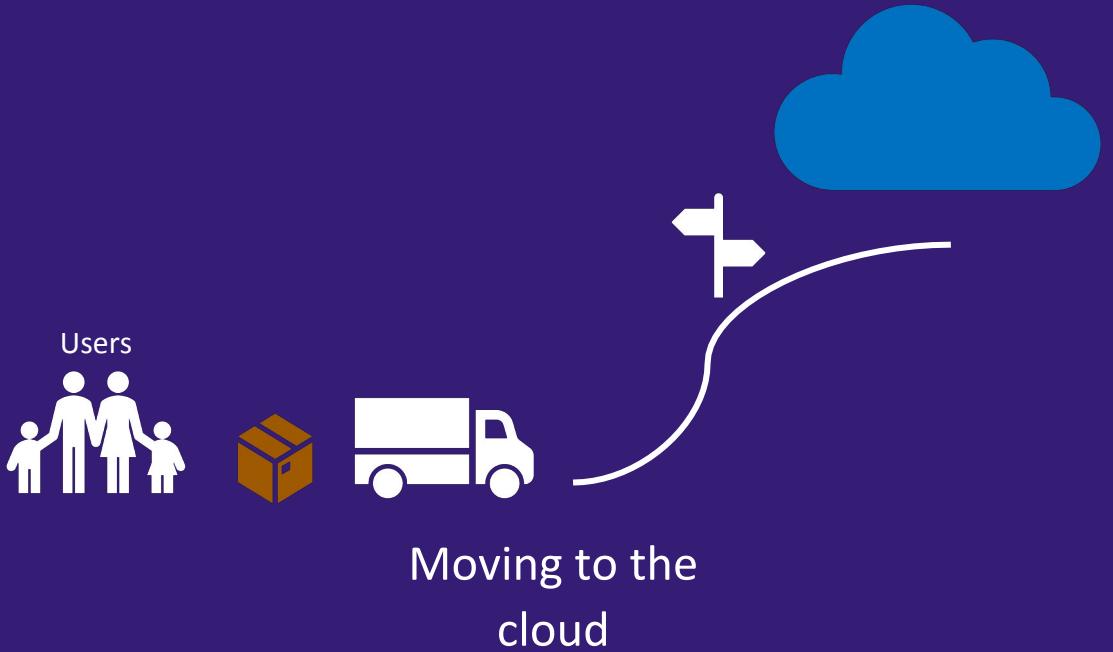
# Why IT as Code Now?



IT is shifting to  
software-defined everything



Everything-as-a-Service



Moving to the  
cloud



Configuration Complexity

# DevSecOps Tools for IT as Code



Git



AWS CFT



Azure ARM



Ansible



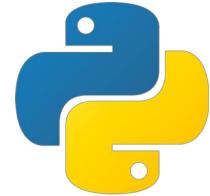
Google Cloud



Kubernetes



Terraform



Python



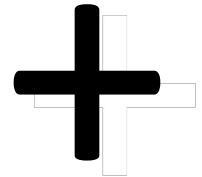
Microsoft  
Powershell



Powershell



Bash



And many more!

# IT as Code DevSecOps Tool Chain



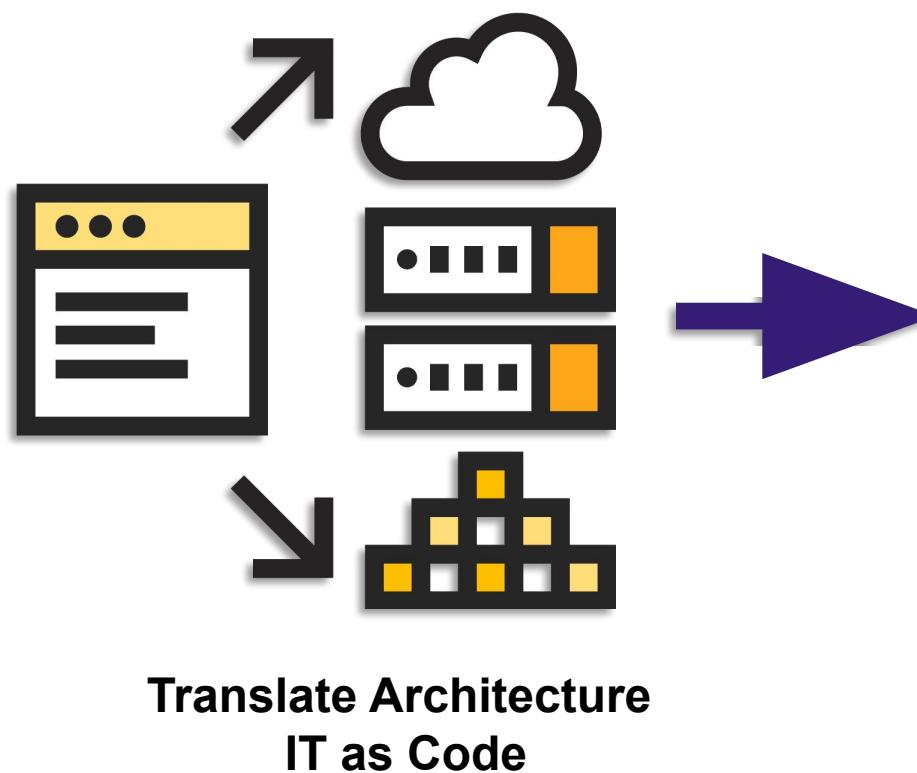
**CI / CD**

**Solution Delivery**



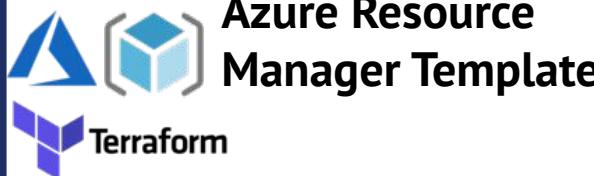
**IT as Code**

# IT as Code Define Architecture



# IT as Code Example Solution

## Infrastructure as Code (IaC)



### Cloud Infrastructure

1. Resource Group
2. Virtual Network
3. Subnet
4. Security Group
5. Public IP
6. NIC
7. Windows Virtual Machine
8. Recovery Vault (Backups)

## Configuration Management



**Red Hat Ansible Playbook**

### Apps + Configuration

1. Internet Information Services (IIS)
2. Windows Firewall Rules
3. Install Website

## Integration



**Red Hat Ansible Playbook**

### API Integrations

1. Send Slack Message
2. Create ConnectWise Ticket

**CI / CD JOB MANAGEMENT**



# IT as Code = Proactive Security

## Infrastructure as Code (“IaC”)



Azure Resource Manager  
Template



Cloud Infrastructure

1. Resource Group
2. Virtual Network
3. Subnet
4. Security Group
5. Public IP
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## Configuration Management



Red Hat Ansible Playbook

## Apps + Configuration

1. Internet Information Services (IIS)
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## Proactive Security

- Hardened images
- Hardening playbooks
- Security scanning
- Controls checklists



CIS Hardened Images™



CIS Benchmarks™



CIS-CAT® Pro



CIS-CAT Lite

# STAY IN TOUCH!

Join fellow IT as Code  
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