

# Netflix & DevOps

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# Agenda

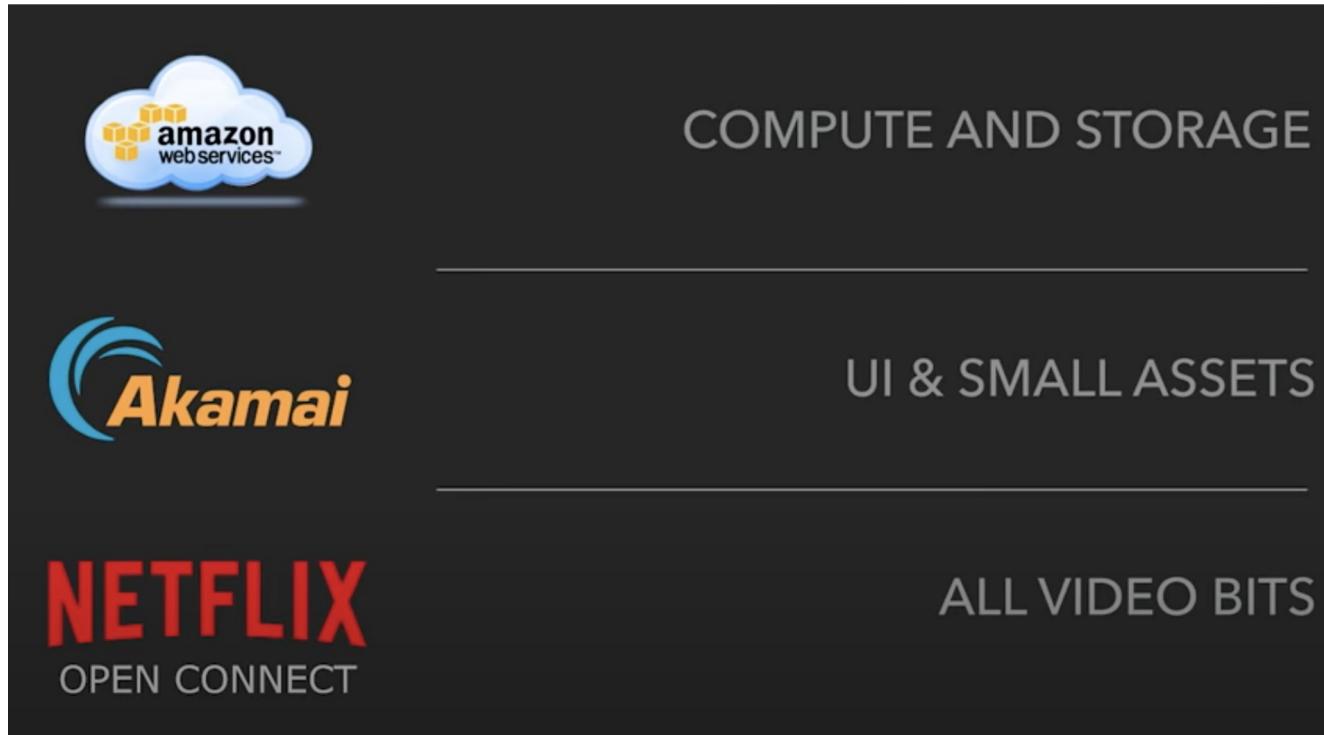
- About me
- About Netflix
- DevOps
- Netflix DevOps
- Netflix Culture
- Q/A

# About me

- Senior Software Engineer
- Founder, goeb1.com
- Tech 40 under 40
- Box, Samsung, Apple,  
Cadence
- TEDx speaker: Blockchain,  
Cloud, Distributed systems
- Adjunct Professor, UAT, AZ

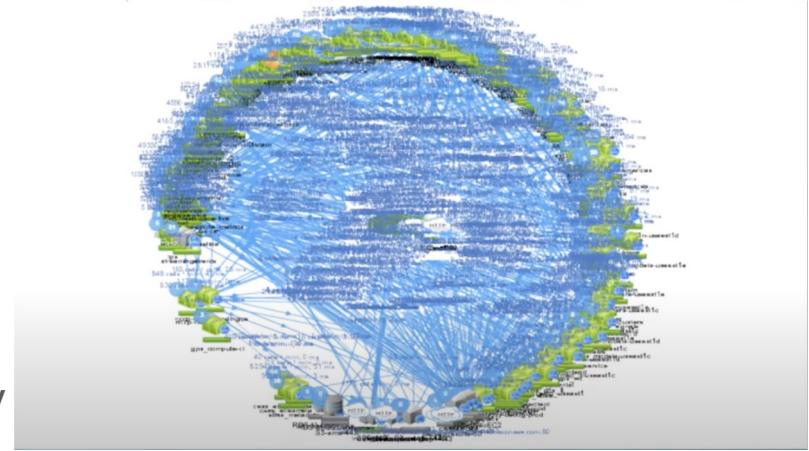


# Netflix: Winning moments of truth



# Netflix scale

- 220M+ members
- 190+ countries
- 1000s of microservices
- 1000s of daily production changes
- 10,000s of virtual machine instances
- 100,000s of customer interactions / sec
- 1,000,000,000s of time series metrics
- 10,000,000,000s of hours streamed every quarter
- 10s of ops engineers
- 0 NOC!

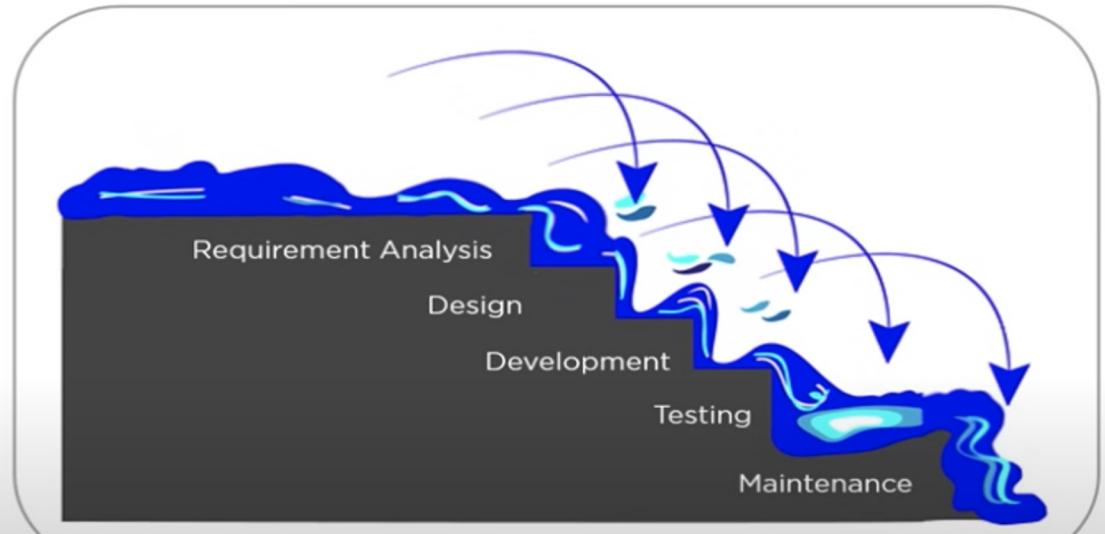


# What is DevOps?

Waterfall → Agile → DevOps

Waterfall model is a traditional approach of software development

In waterfall model, development happens in a step by step manner



Client requirements cannot be understood at once

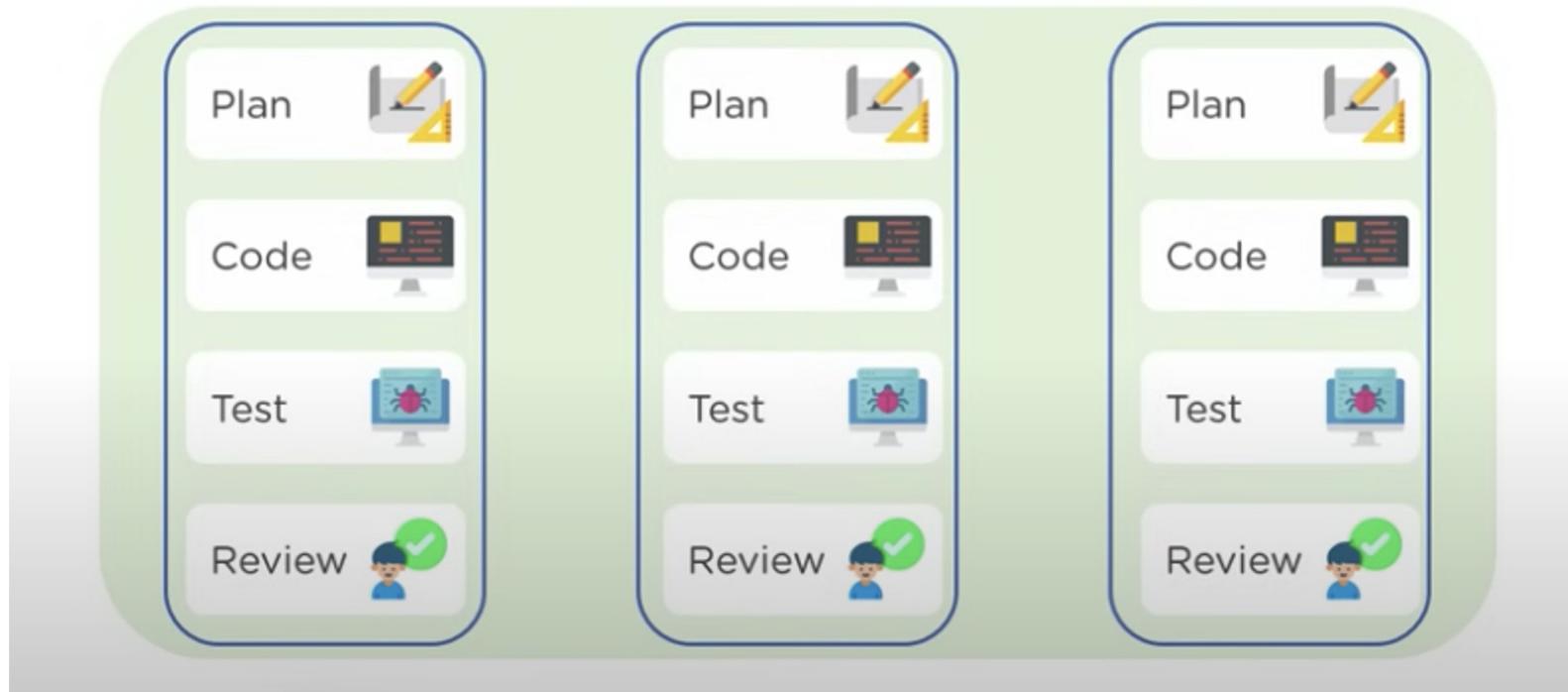


It is very expensive to make changes during the end of the project

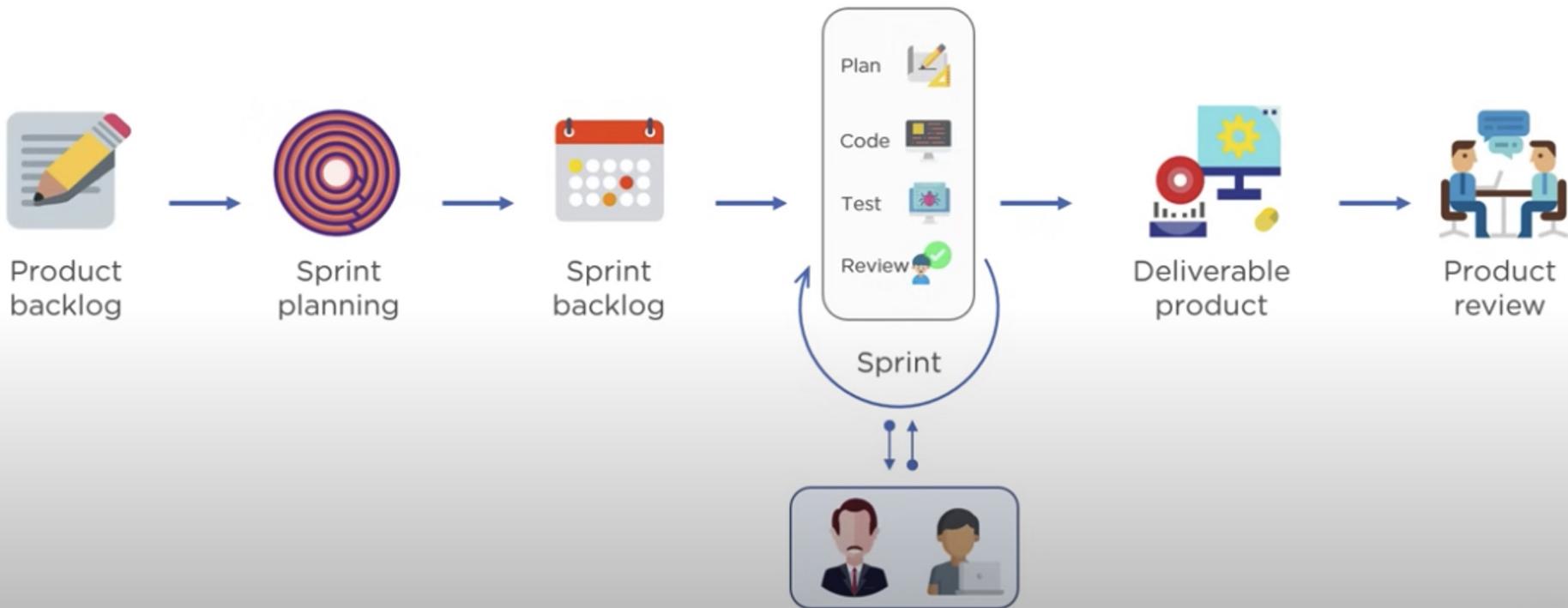


Software must be delivered faster and with less resources

The entire process of building a software is broken down into small actionable blocks called sprints



## Workflow of Agile model



### Advantages of Agile model



Client requirements are better understood because of the constant feedback



Product is delivered much faster as compared to waterfall model



### Disadvantages of Agile model



The product gets tested only on developer computers and not on production systems



Developers and operations team work in silos

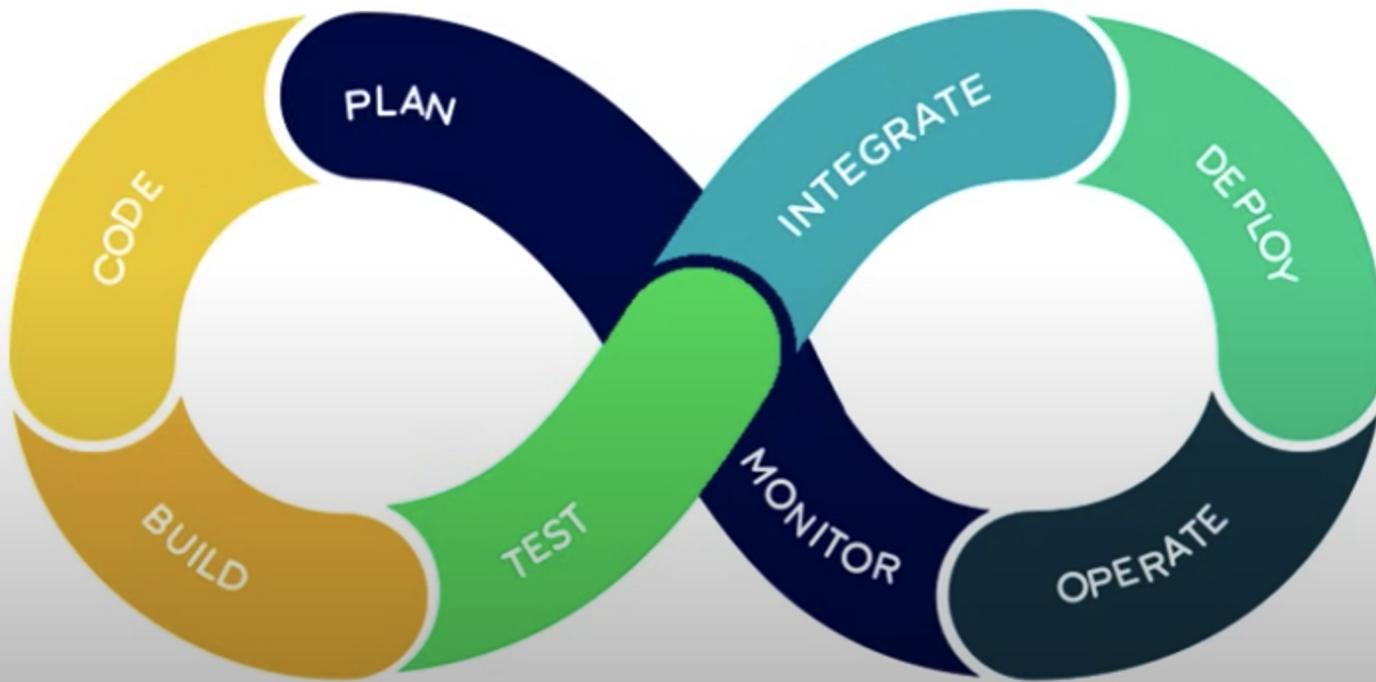


DevOps is an evolution from Agile model of software development



Agile addressed the gap between clients and developers

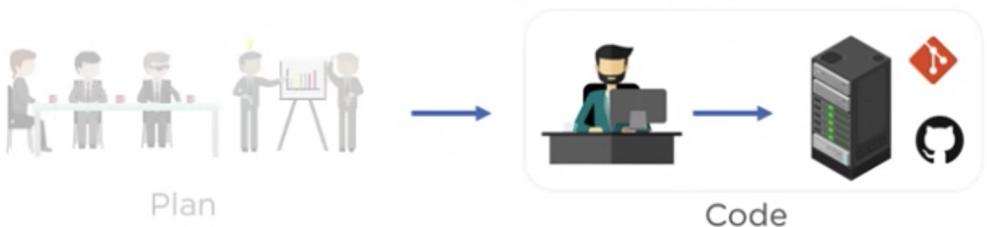
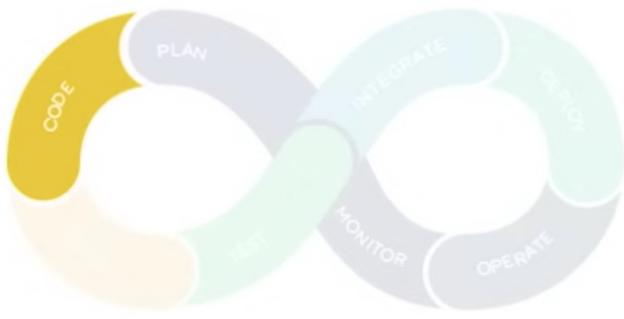
According to DevOps practices, the workflow in software development and delivery is divided into 8 phases



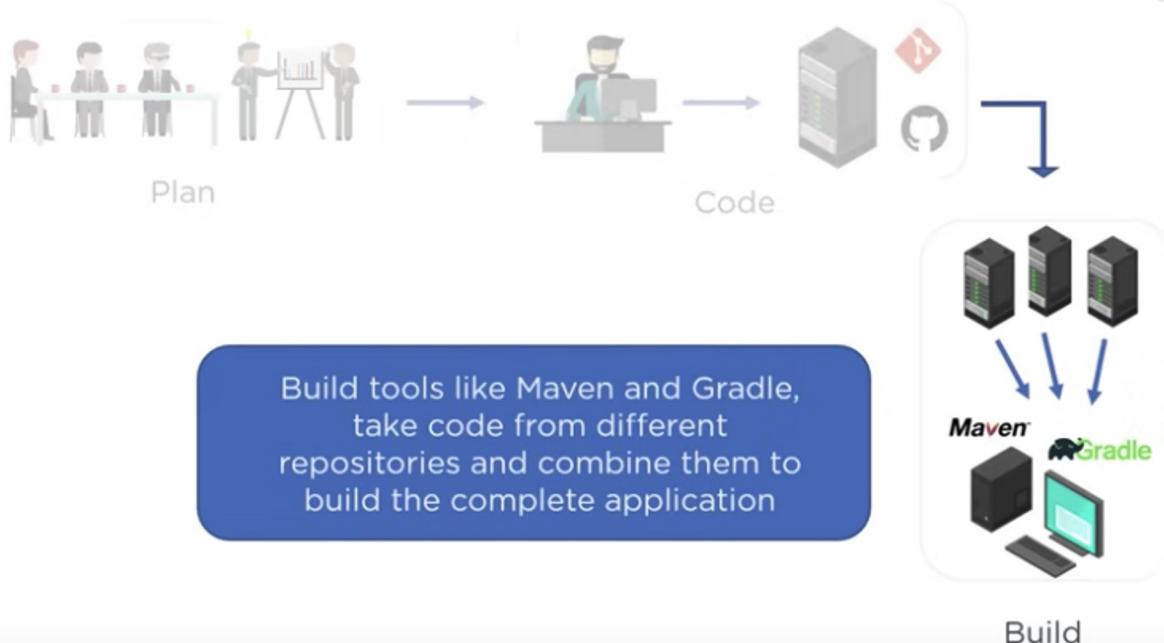
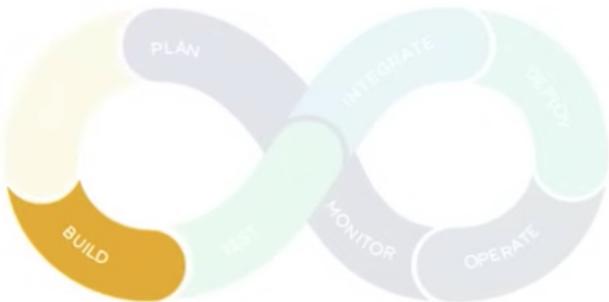


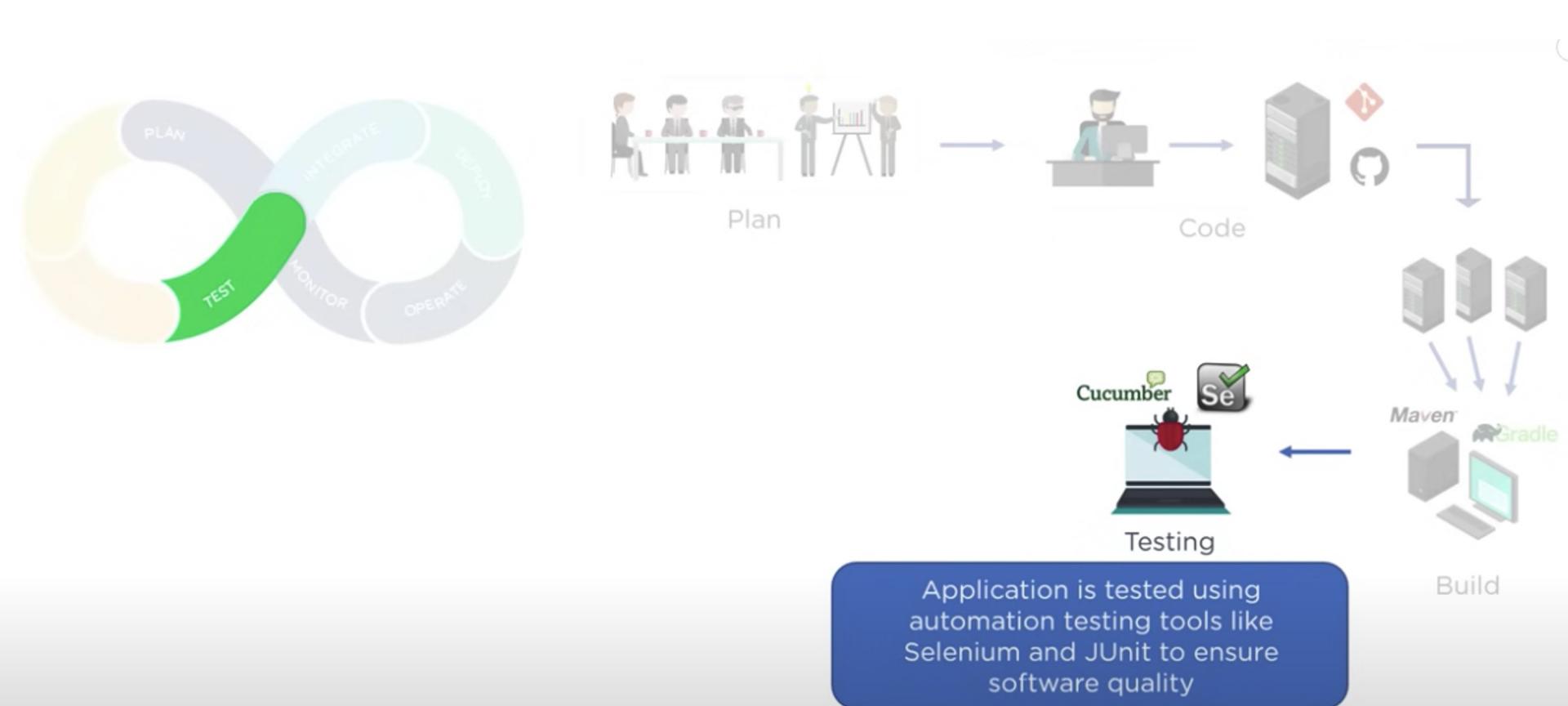
### Plan

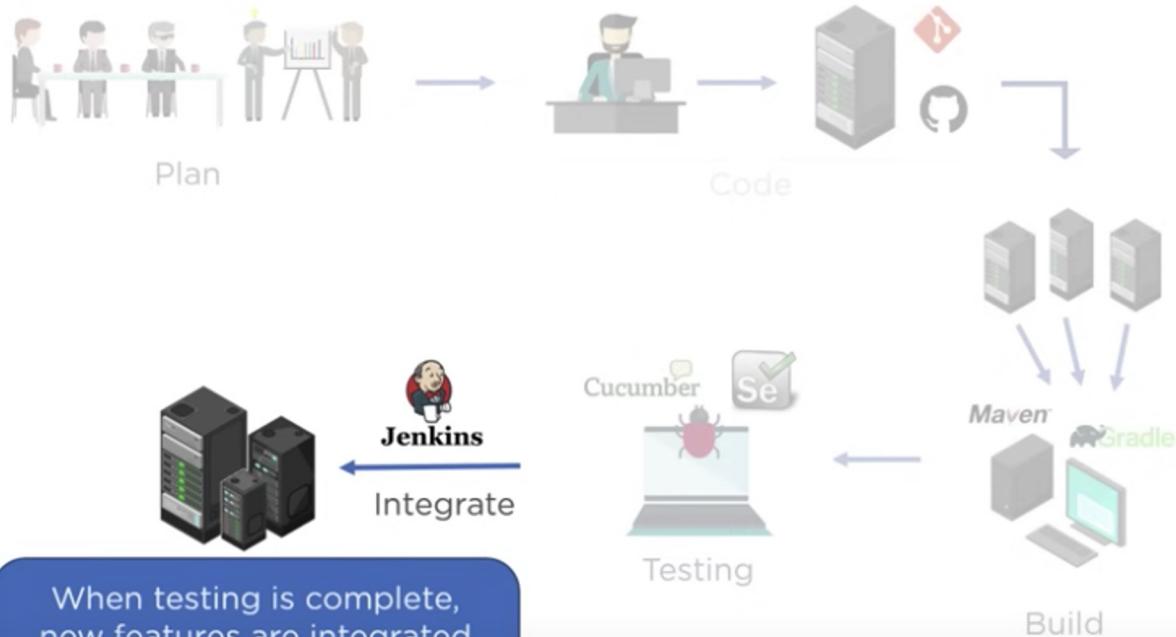
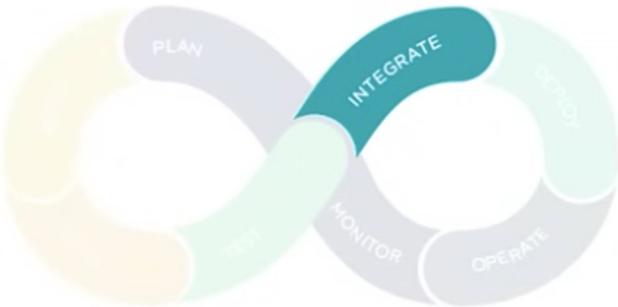
In plan stage, business owners and software development team discuss project goals and create a plan



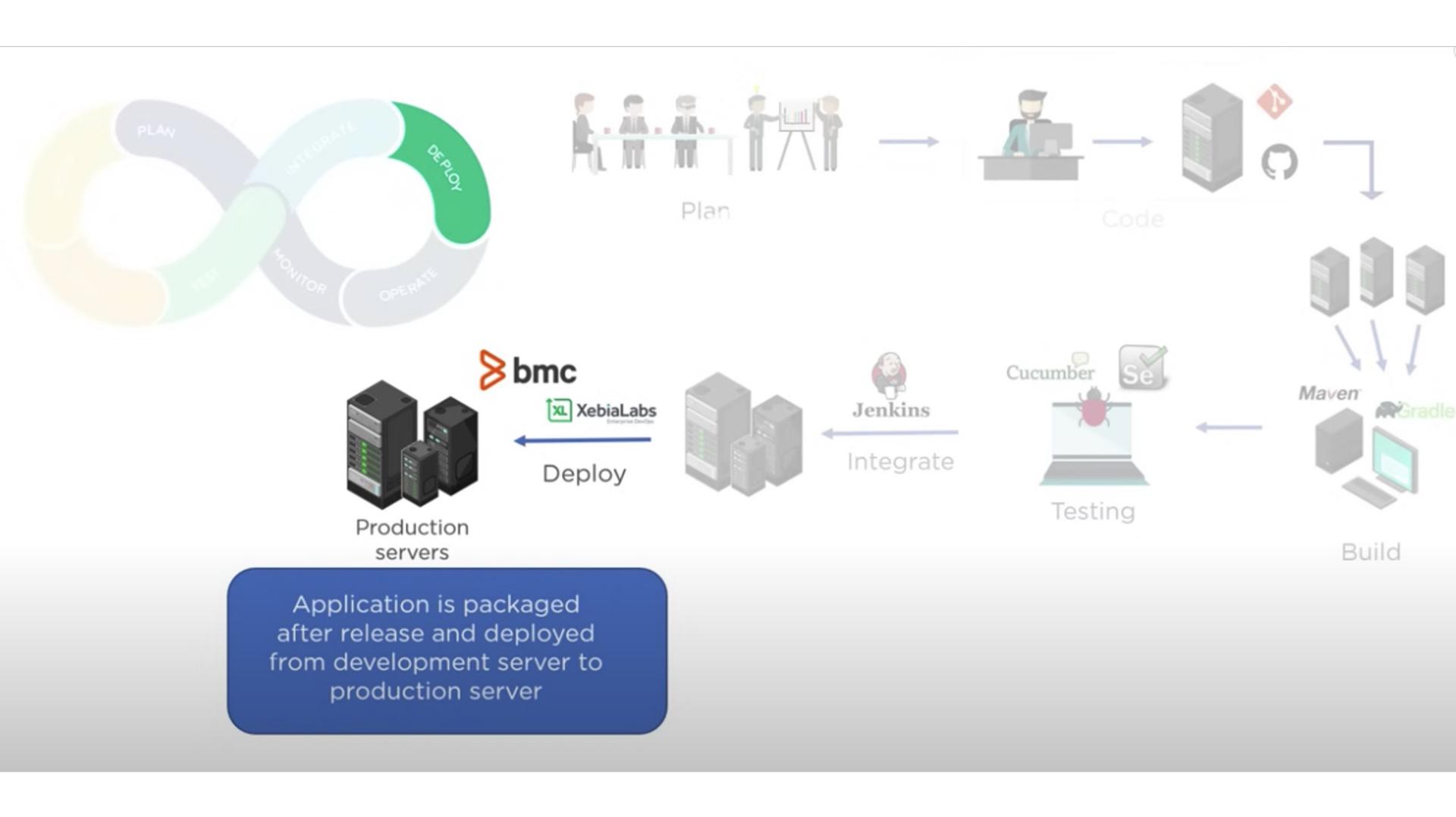
Programmers then design and code the application and use tools like Git to store application code

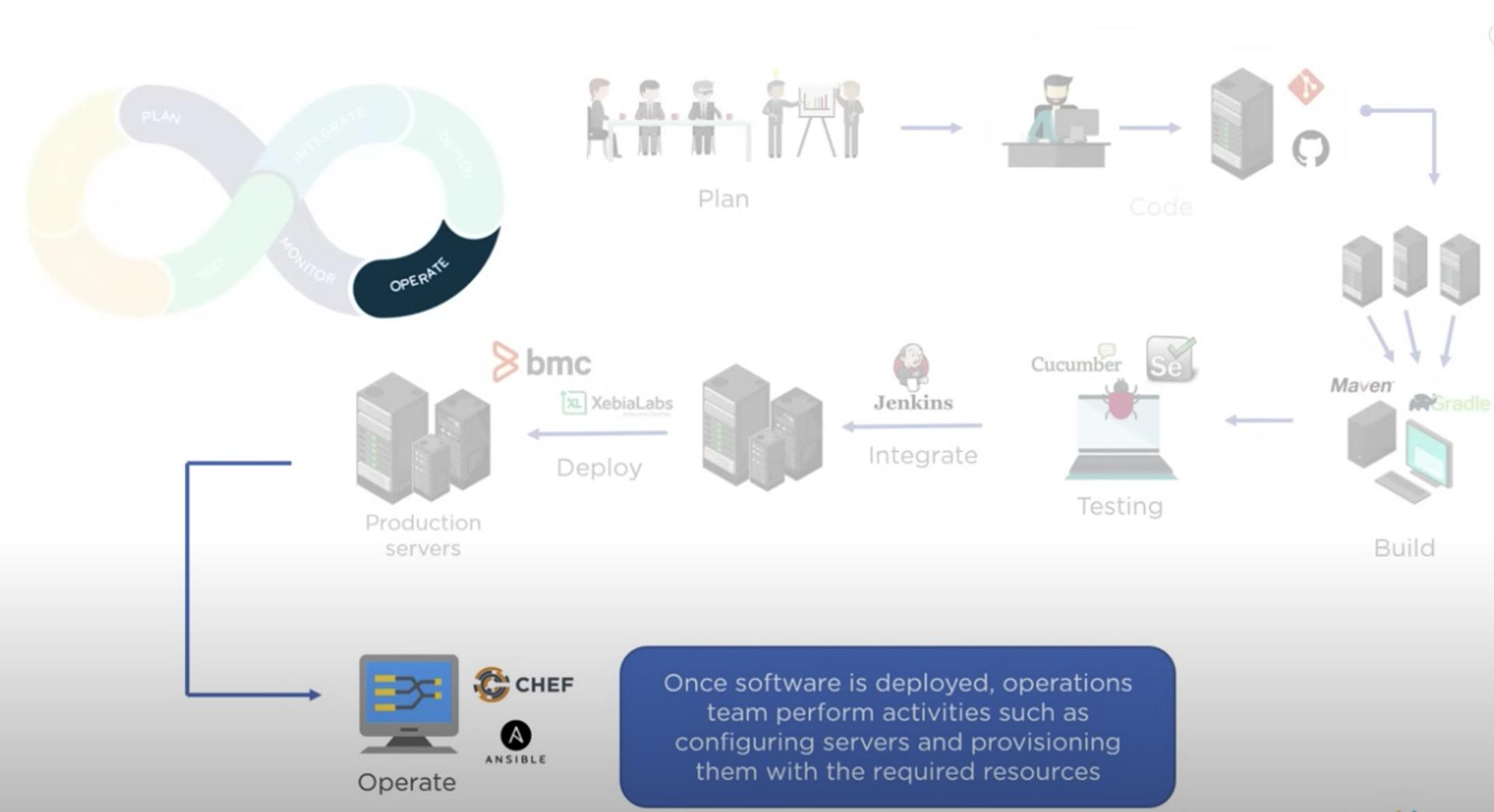


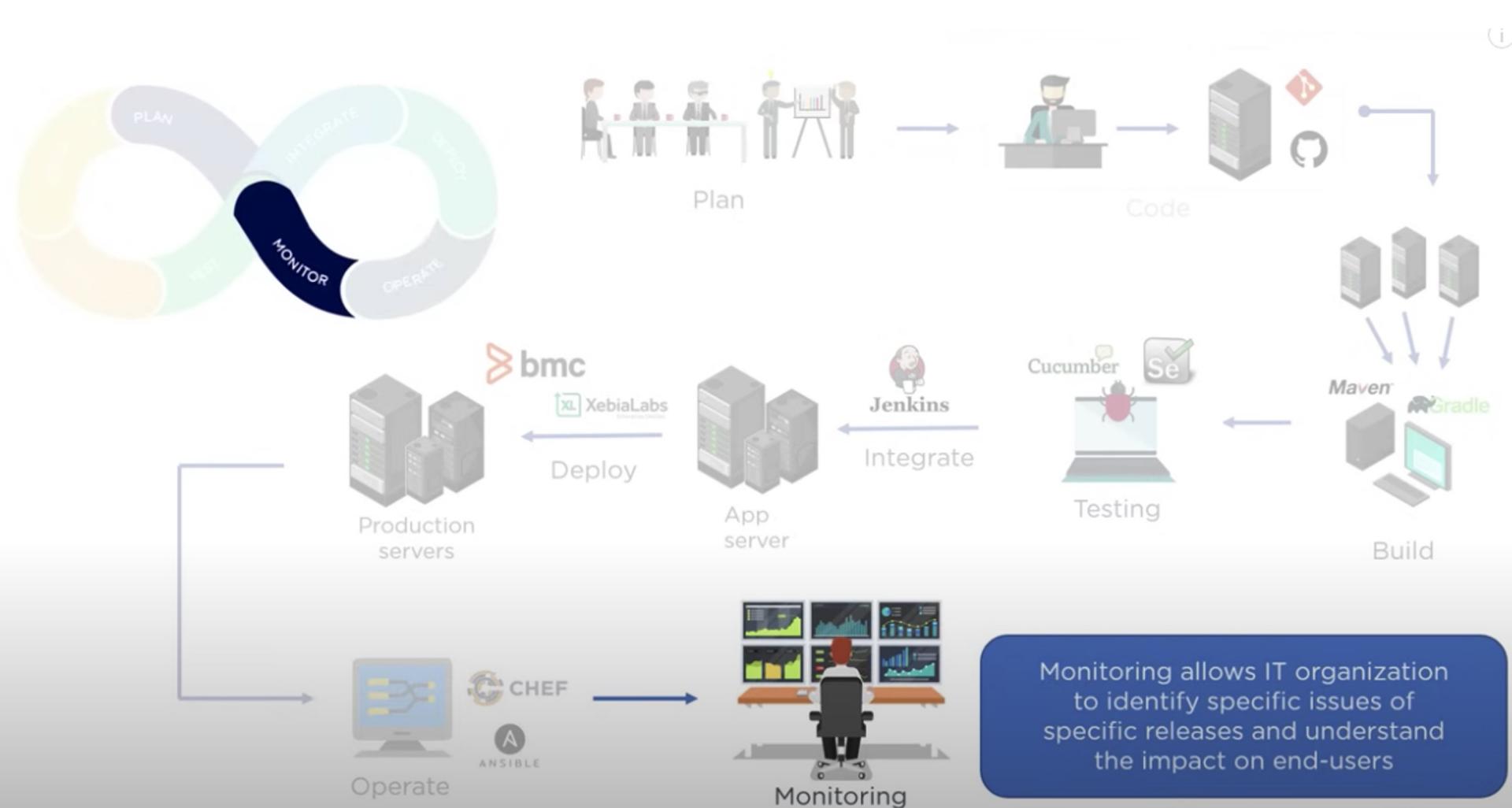




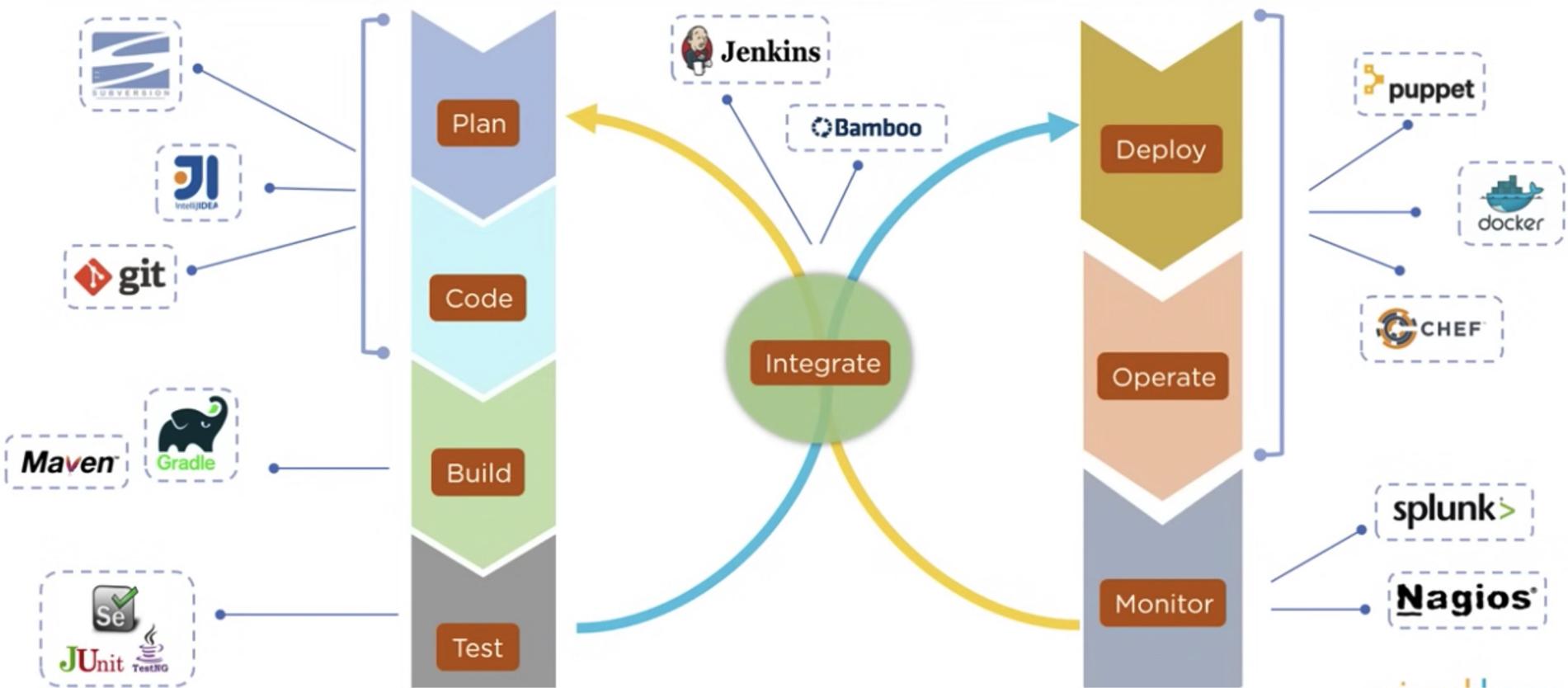
When testing is complete,  
new features are integrated  
automatically to the already  
existing codebase







# DevOps Tools



# How do we do DevOps?

We don't

Don't

Have systems that say NO to our engineers

Do

Freedom & Responsibility

Don't

Uptime at all costs

Do

Velocity of innovation

Don't

Processes and Procedures

Do

Trust

Don't

Require standards

Do

Enablement

Don't

Silos, walls, fences

Do

Making ownership easy, you build it, you run it

Don't

Guesses, Gut instinct, tradition

Do

Data

Don't

Devops

Do

Culture

# A flavor of what DevOps is for me

- Netflix Drive: Edge software - OSX, Windows, CentOS
- CI/CD: Jenkins, Spinnaker, Mac VM instances on AWS
- Deployments: brew/pkg on OSX, using yum on CentOS, chocolatey on Windows
- Sentry for logging, in-house tools for metrics and observability



pegasus



BUILDs



BRANCHes



PULL REQUESTS



PIPELINES



CANARY CONFIGS



CANARIES



CLUSTERS



LOAD BALANCERS



SECURITY GROUPS



PROPERTIES



GATEWAYS



TASKS



CONFIG

## Filters

Edit multiple

Show  Instances  with details

Create Server Group

Search by field

## ACCOUNT

- titusprodvpc
- titustestvpc

## REGION

- us-east-1

## CATEGORY

- Server Group

## STACK

- (none)
- dev
- intg
- prod
- regtest

## DETAIL

- (none)

## STATUS

TITUSPRODVPC

pegasus-prod

10 ▲ : 100%

US-EAST-1

V460: Build: #1971 mce/pegasus@...bda21e (tag: v0.0.1828-h1971.a408c5b)

10 ▲ : 100%



V459: Build: #1970 mce/pegasus@...eae951 (tag: v0.0.1827-h1970.5743022)



V458: Build: #1969 mce/pegasus@...a51b45 (tag: v0.0.1826-h1969.99c4590)



TITUSTESTVPC

pegasus-dev

10 ▲ : 100%

US-EAST-1

V007: Build: #1577 mce/pegasus@...55dae3 (tag: v0.0.1809-h1577.47fef08)

10 ▲ : 100%



V006: Build: #1553 mce/pegasus@...cbfddc (tag: v0.0.1792-h1553.9451b1b)



V005: Build: #1549 mce/pegasus@...310b04 (tag: v0.0.1789-h1549.87bfa2f)



TITUSTESTVPC

pegasus-intg

10 ▲ : 100%

US-EAST-1

# Thank you

