Sujata Bataraa

Introduction to DevOps

Sujata Batra

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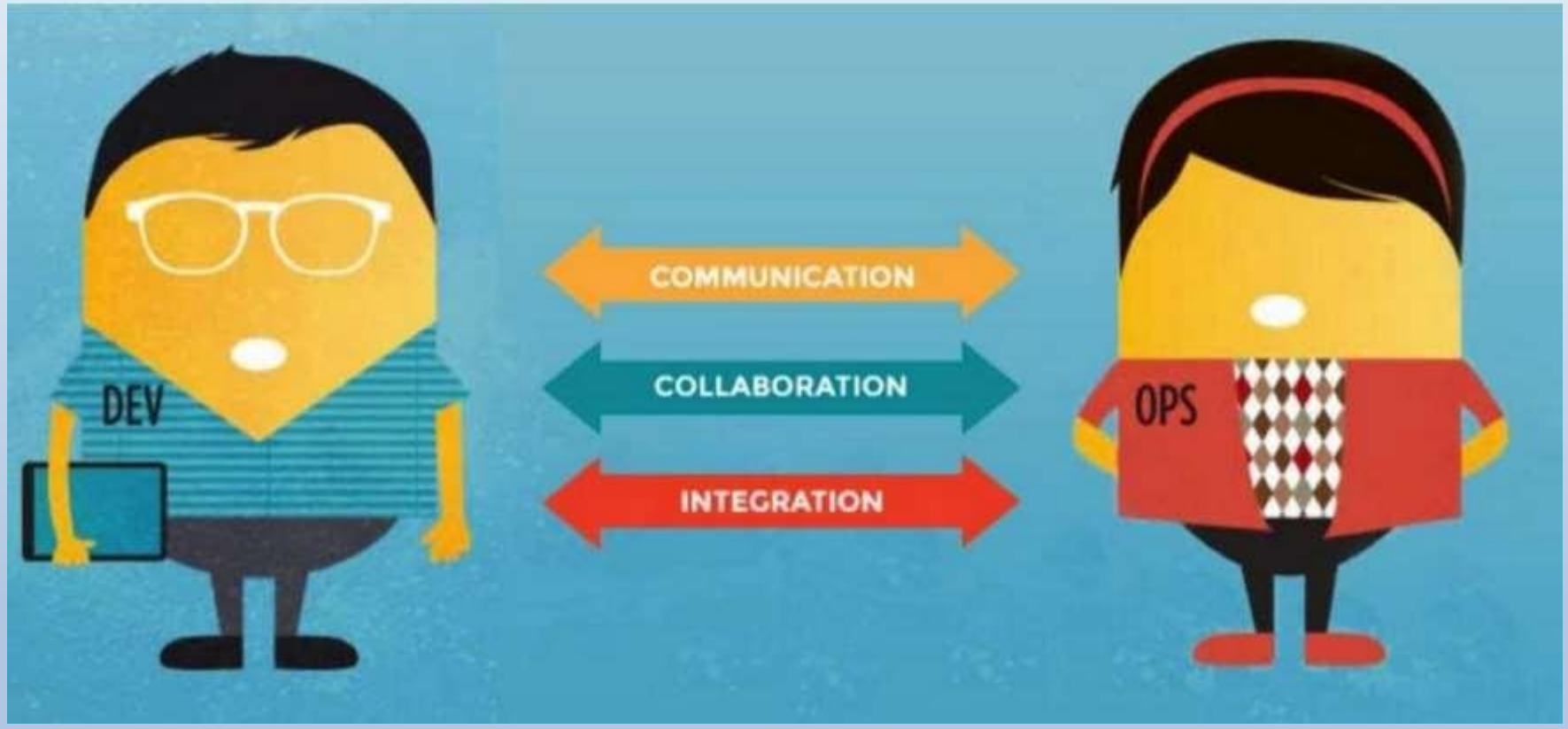
What is DevOps?

What is DevOps?

"It's a movement of people who think its time for change in the IT industry – time to stop wasting money, time to start delivering great software and building systems that scale and last" **– Patrick Debois**

DevOps Philosophy



Once Upon a Time

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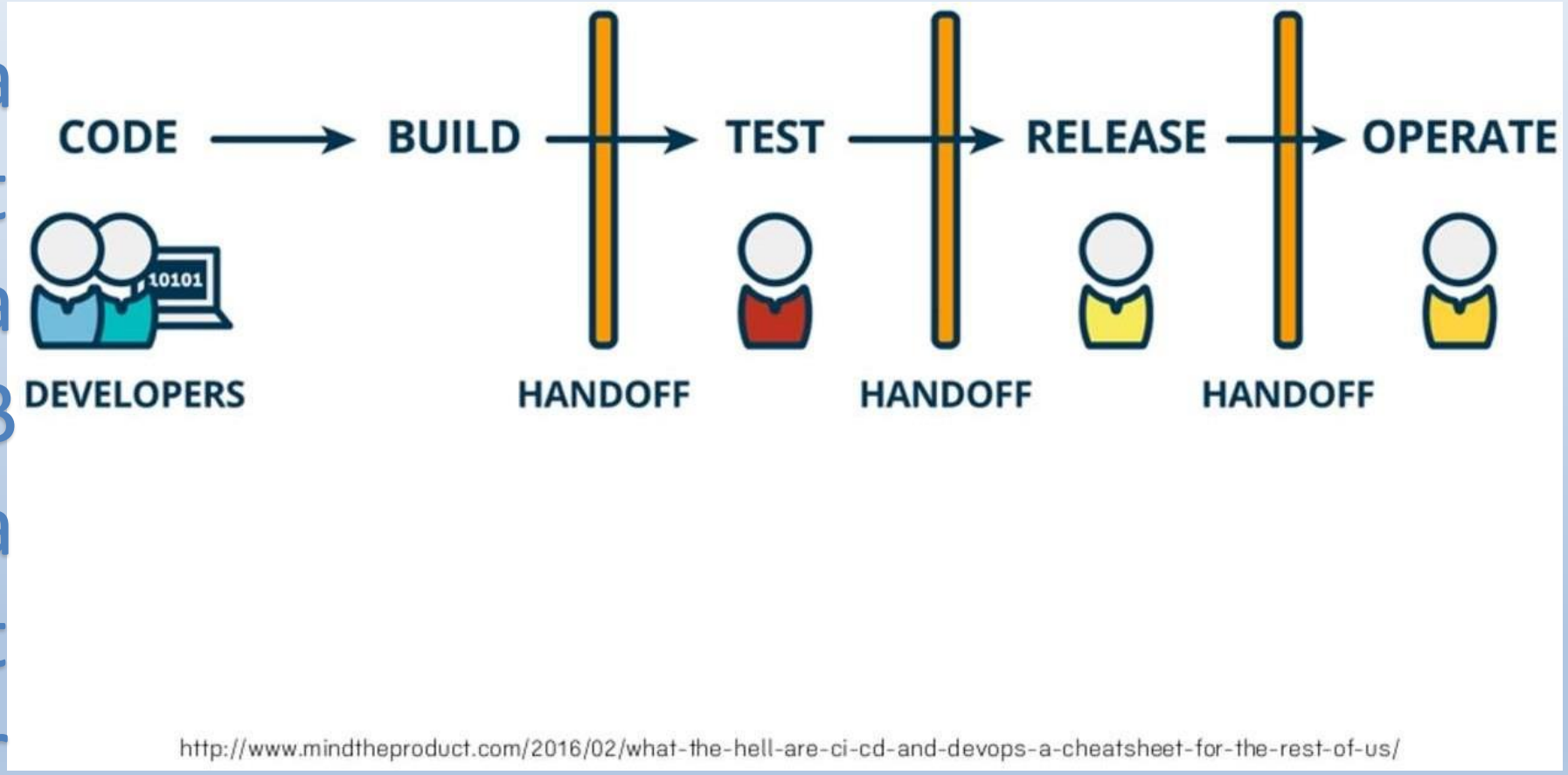

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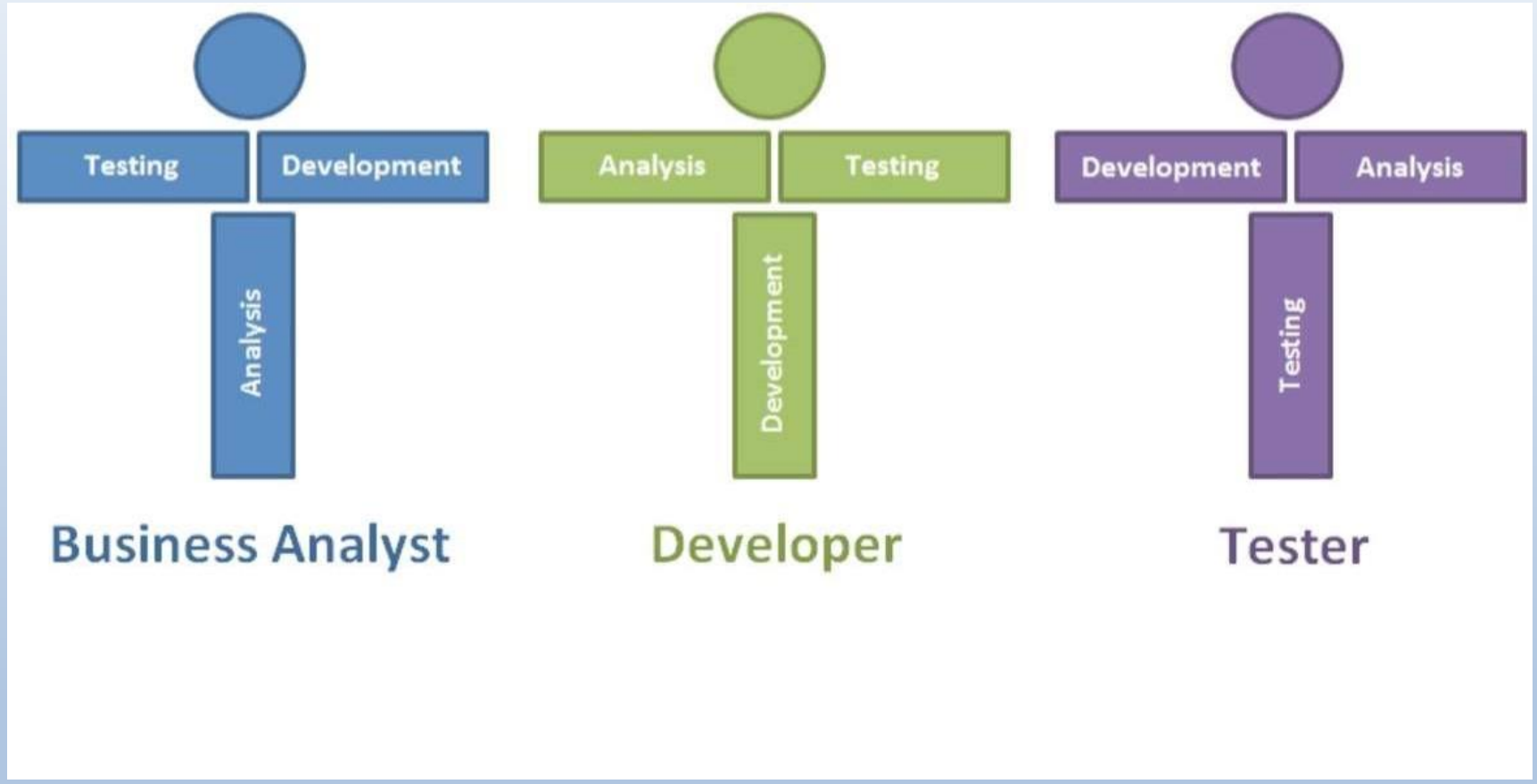

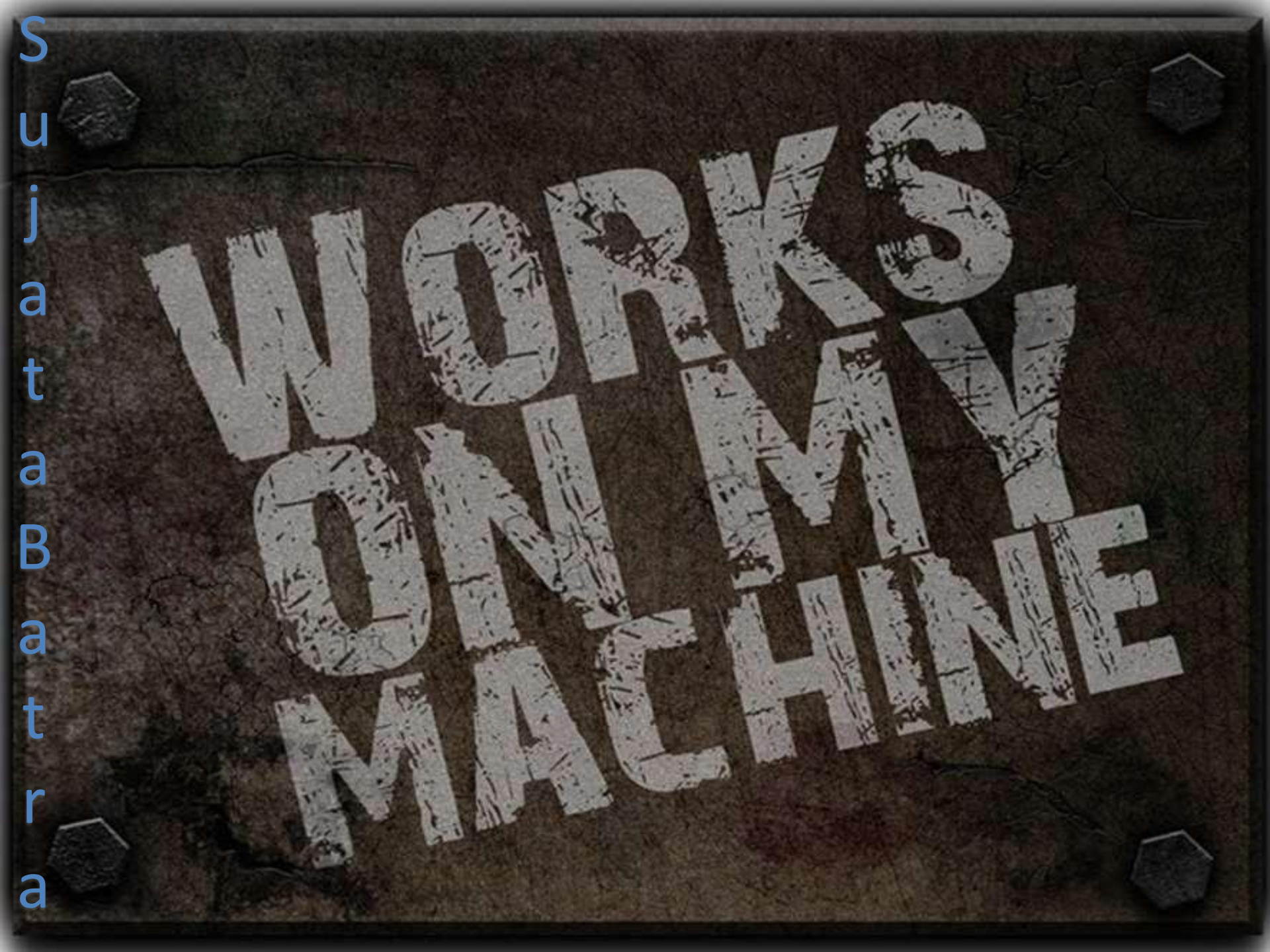

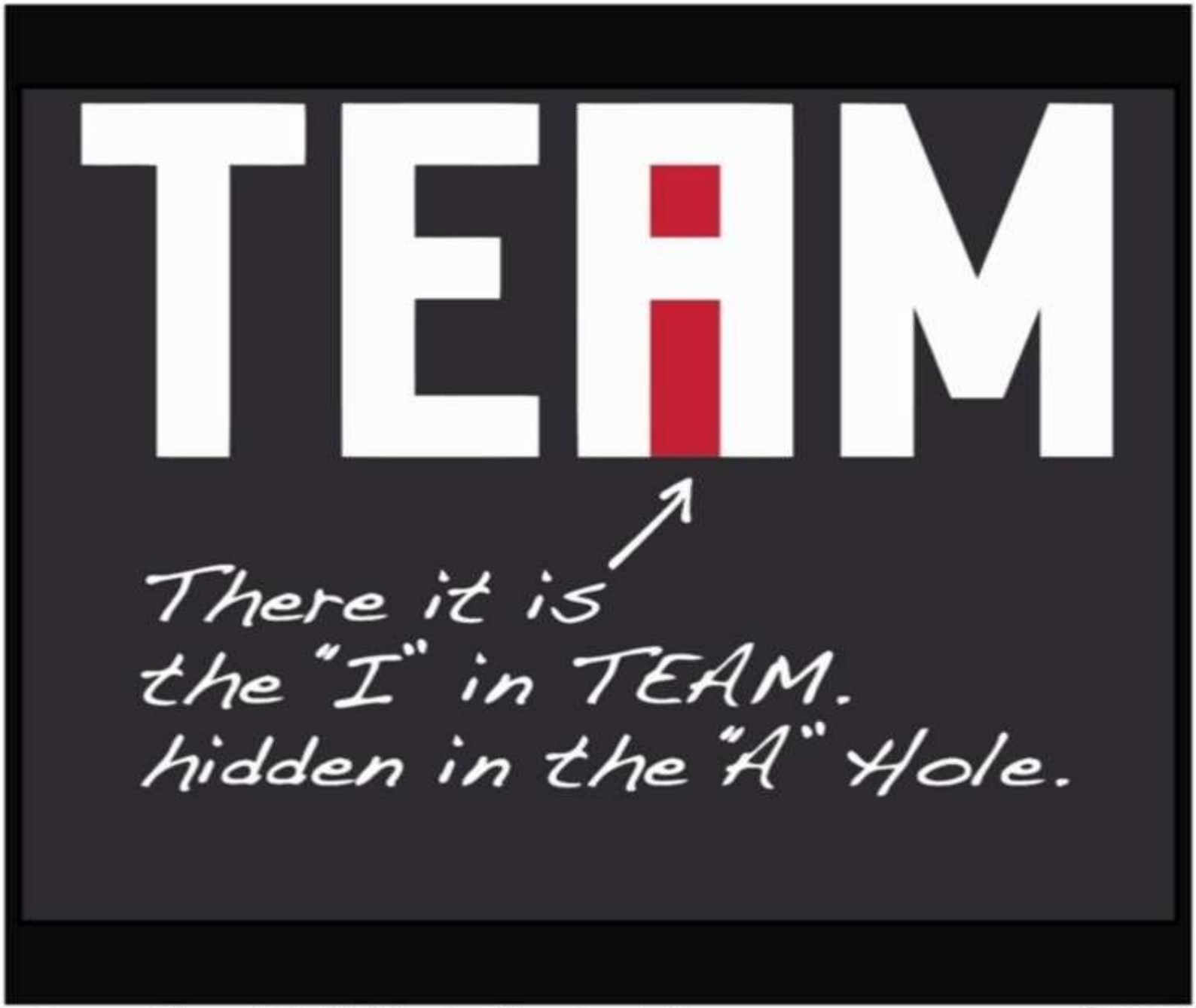

I in Team - There it is hidden in the... *by ginjavv*

Zazzle

Once Upon a Time

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"By 2015, DevOps will evolve from a niche strategy employed by large cloud providers into a mainstream strategy employed by 20% of Global 2000 organizations."

Patrick Debois

2008

2009

Cameron Haight

2011

2013

John Allpaw

Paul Hammond

Gene Kim

2015+

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Why DevOps?

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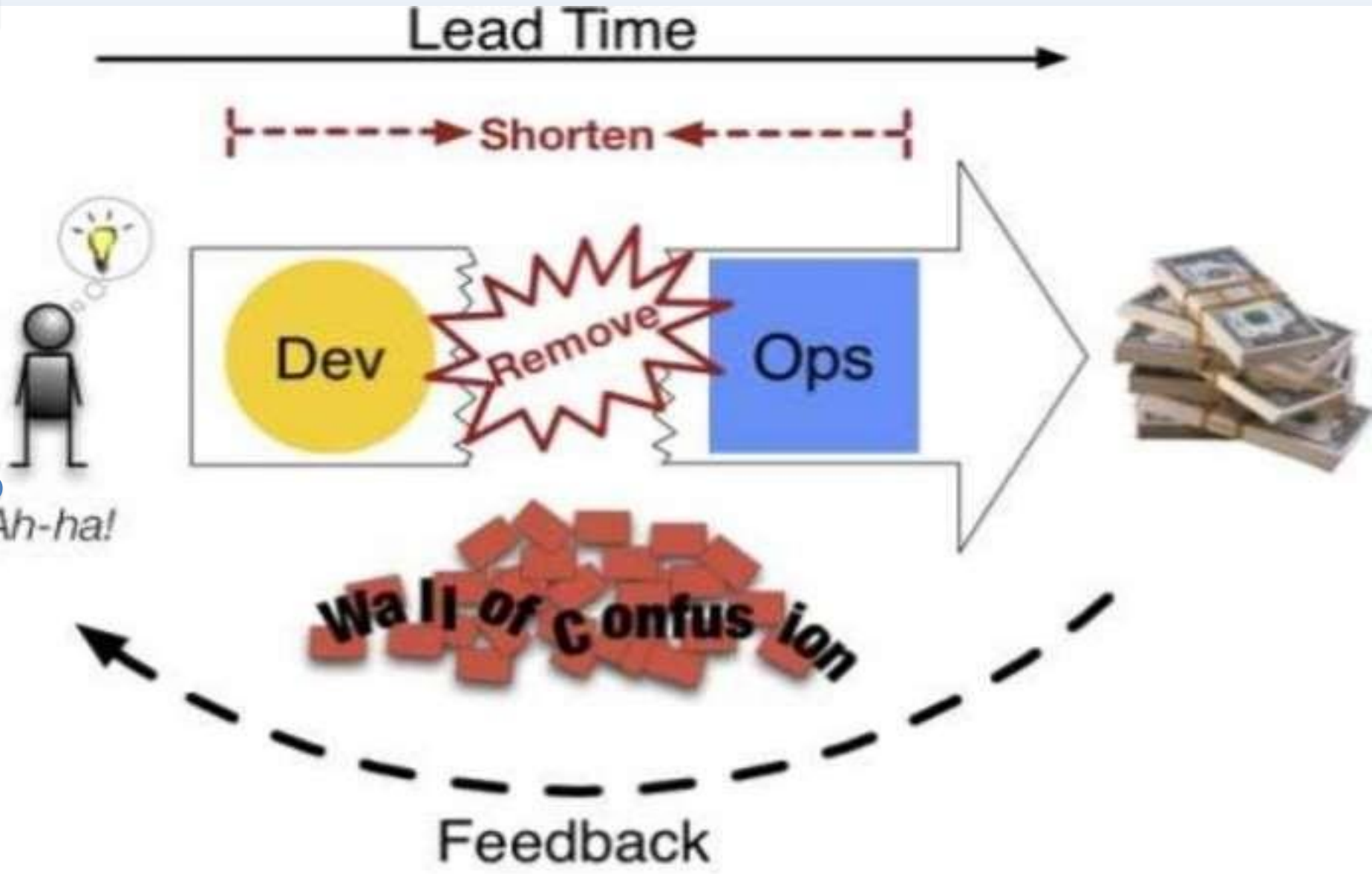

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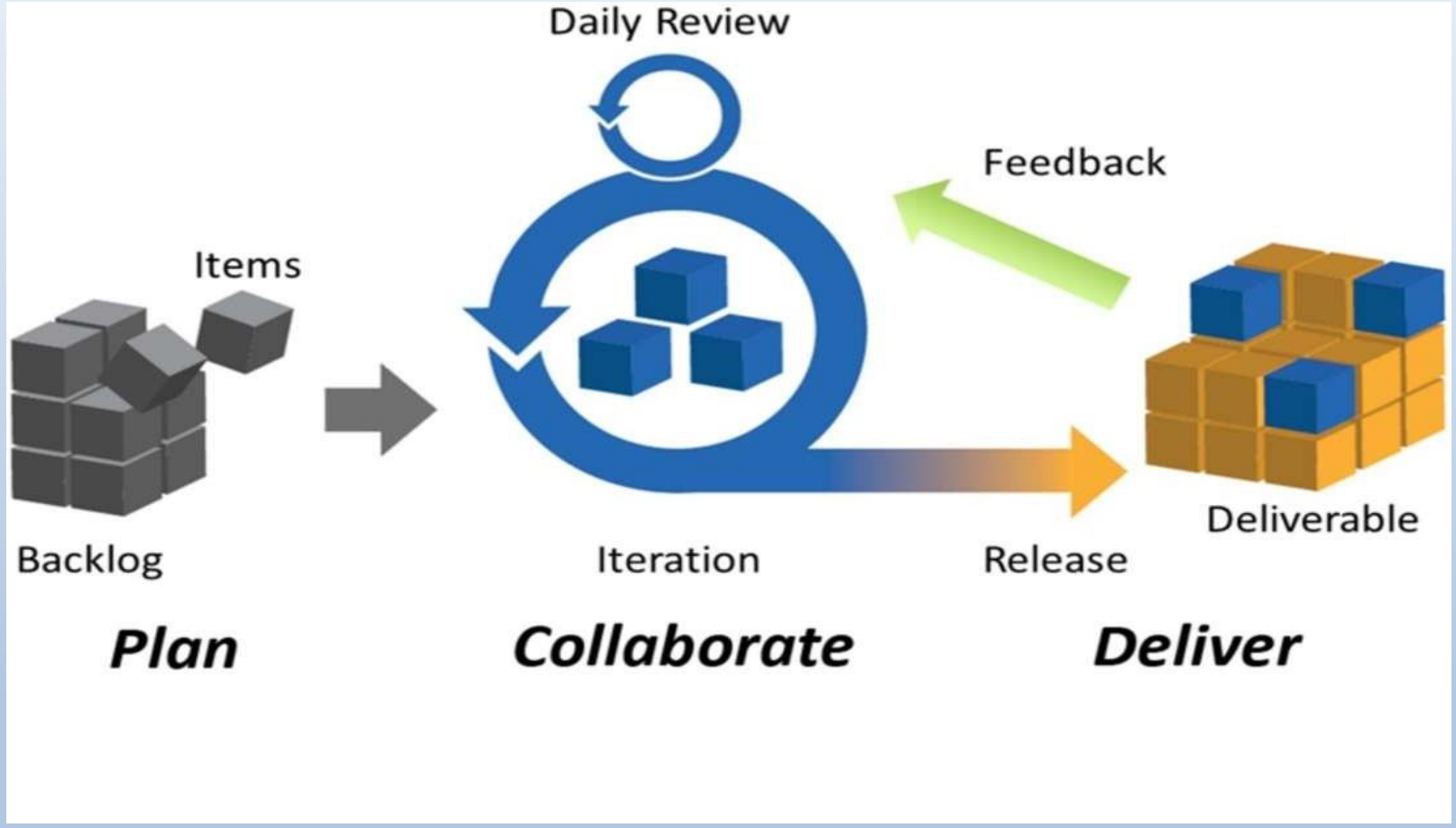

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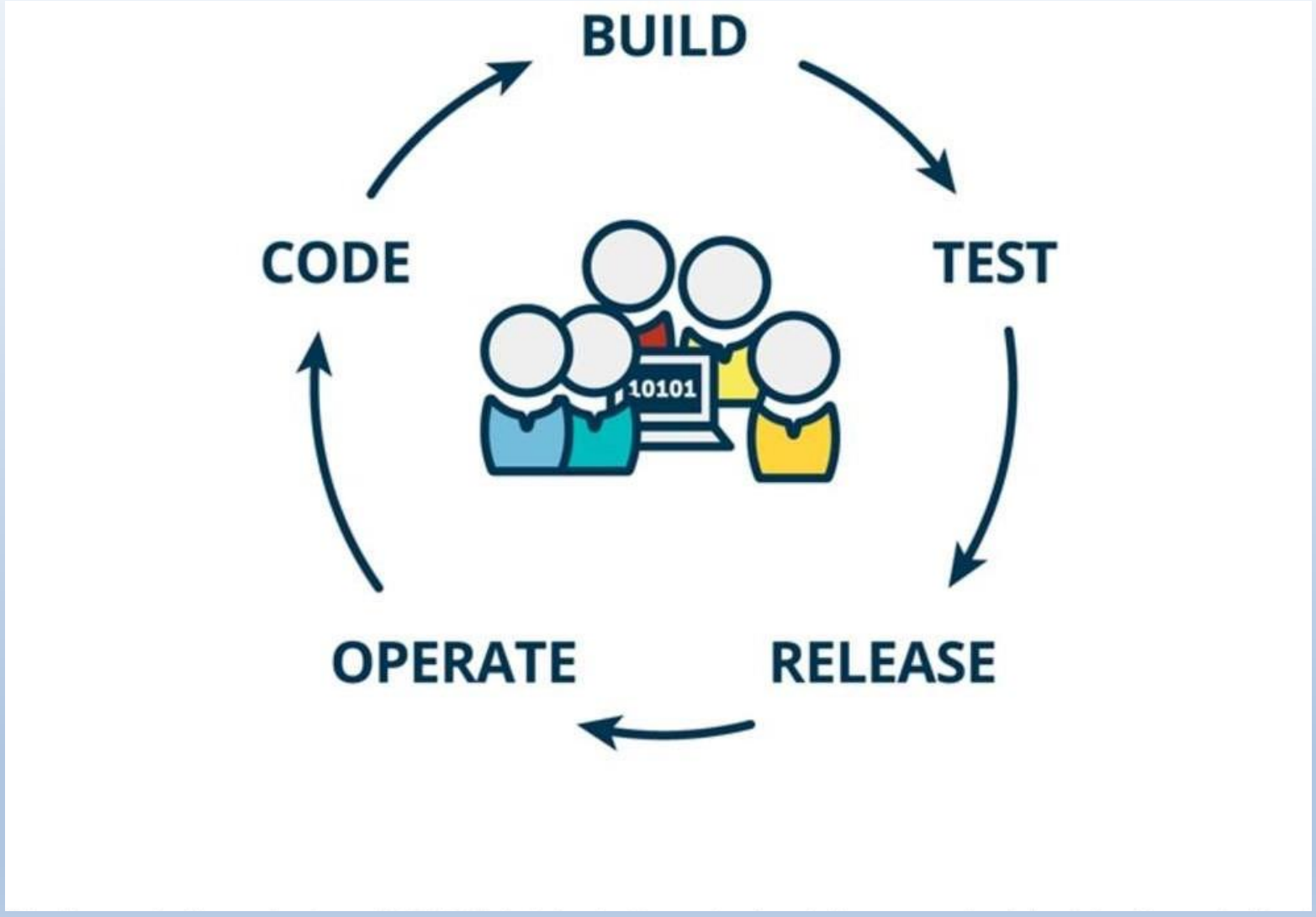

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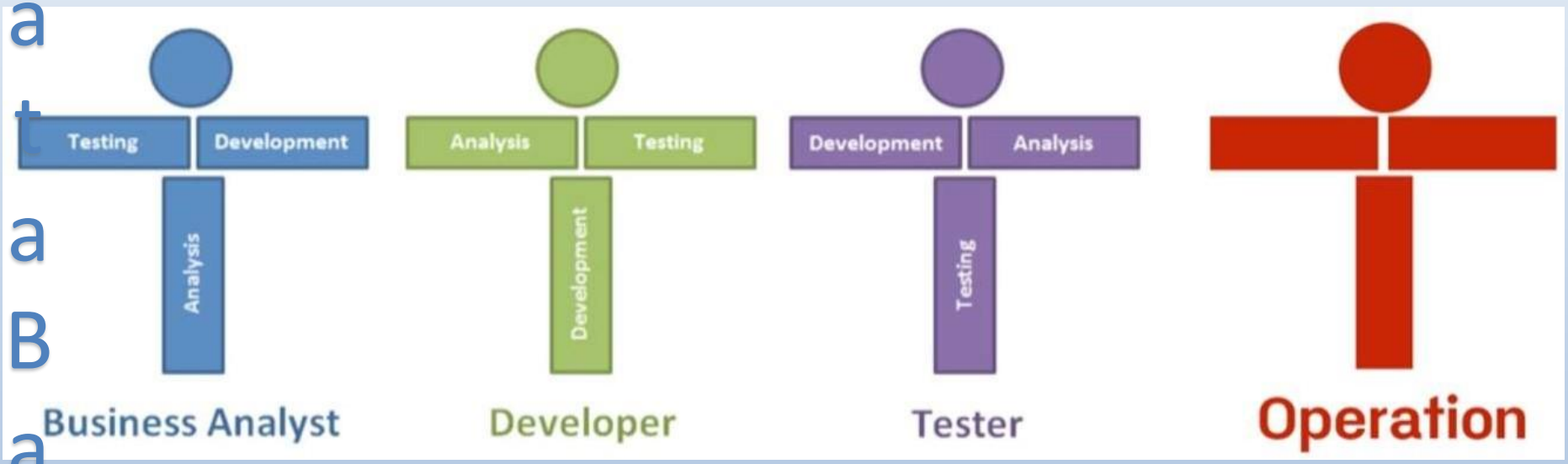
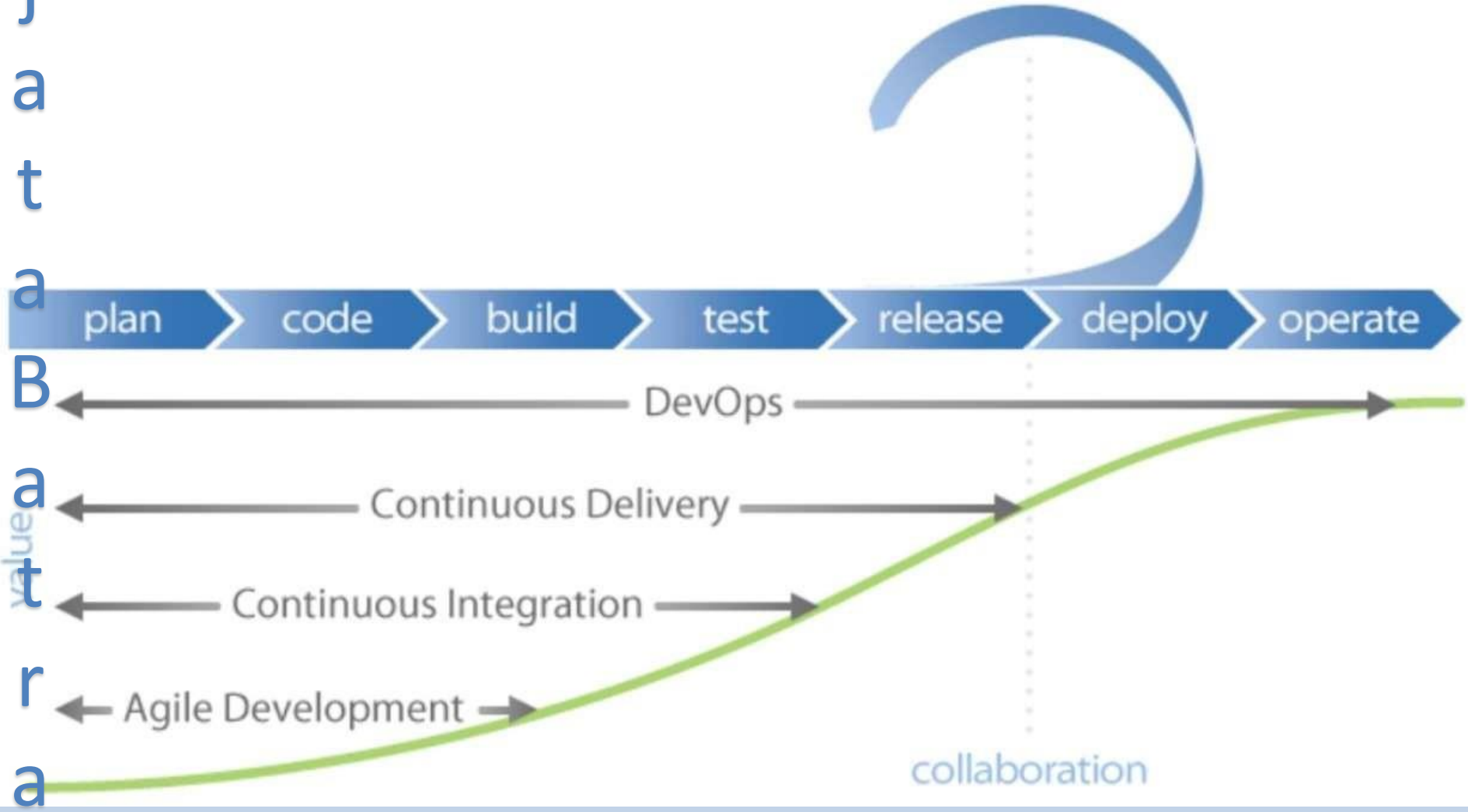


Why does it Matter?



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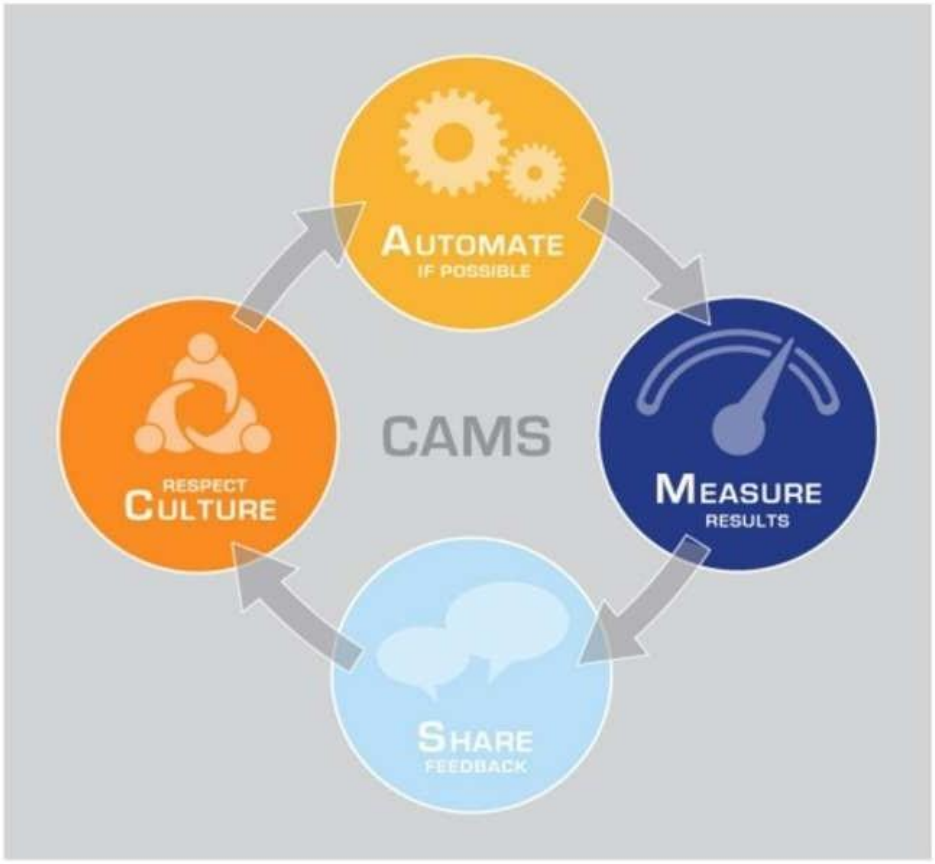
How to start DevOps?

DevOps Principles



DevOps Principles

Culture => People, Process, Tools

Automation => Infrastructure as Code

Measurement => Measure everything

Sharing => Collaboration/Feedback

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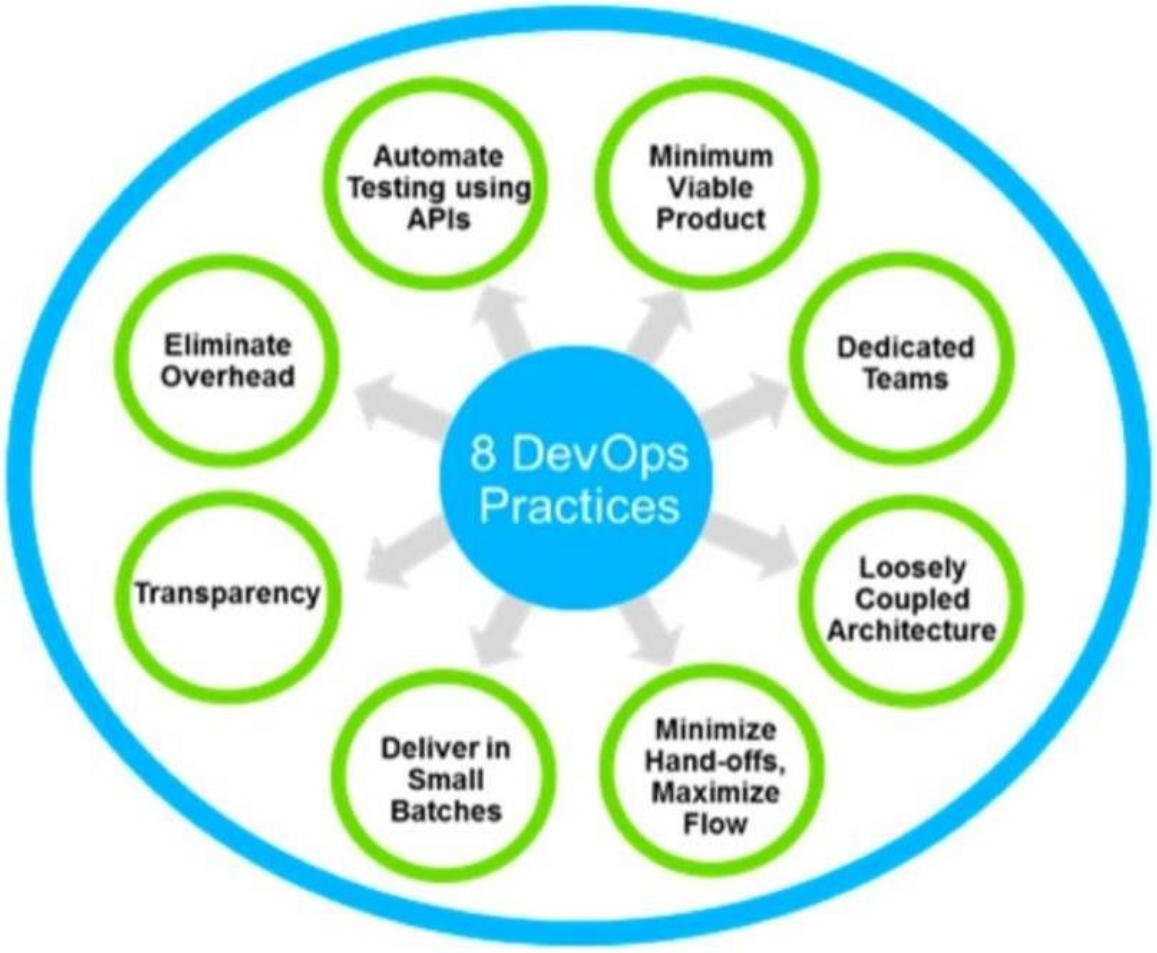
DevOps Practices



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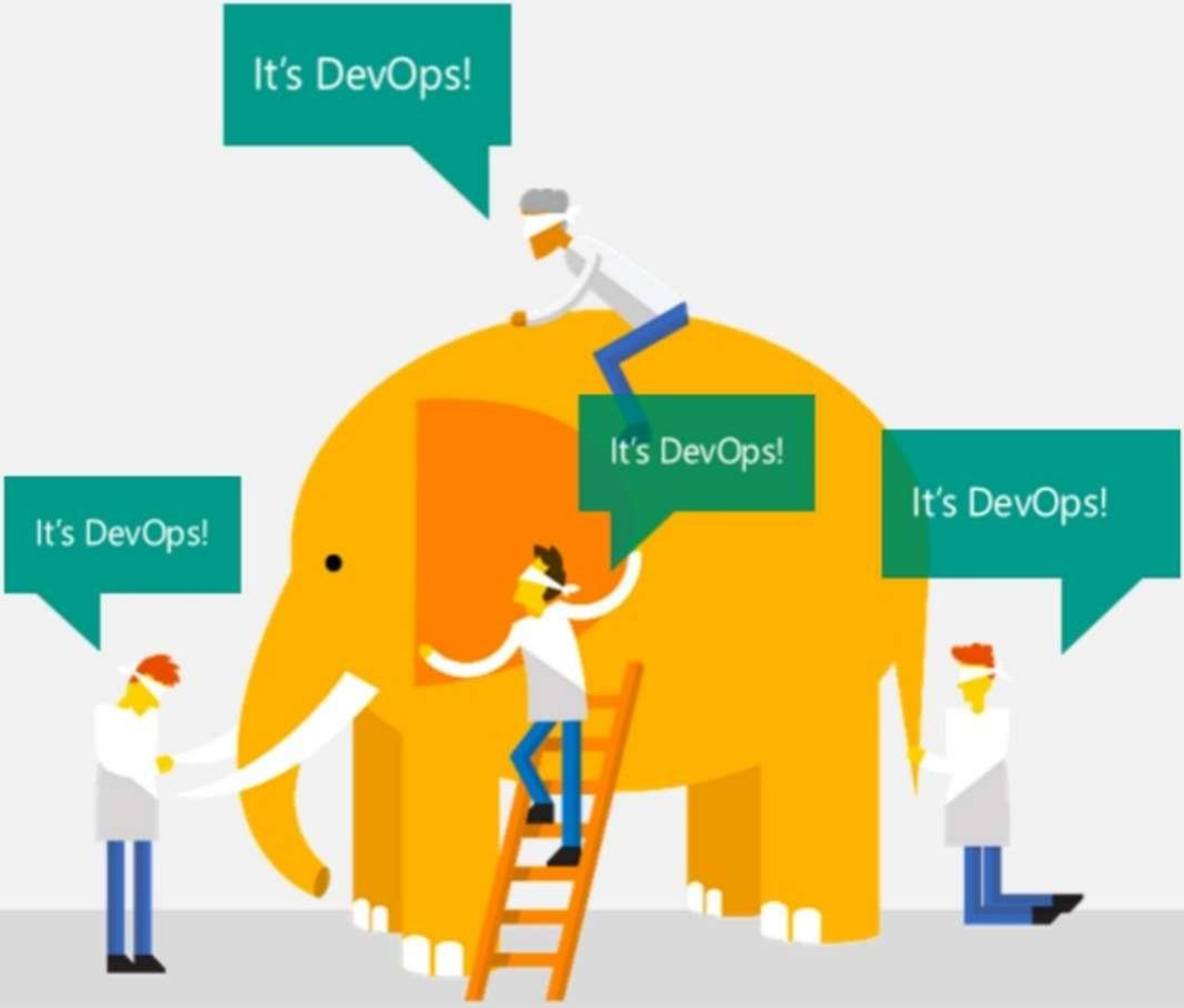

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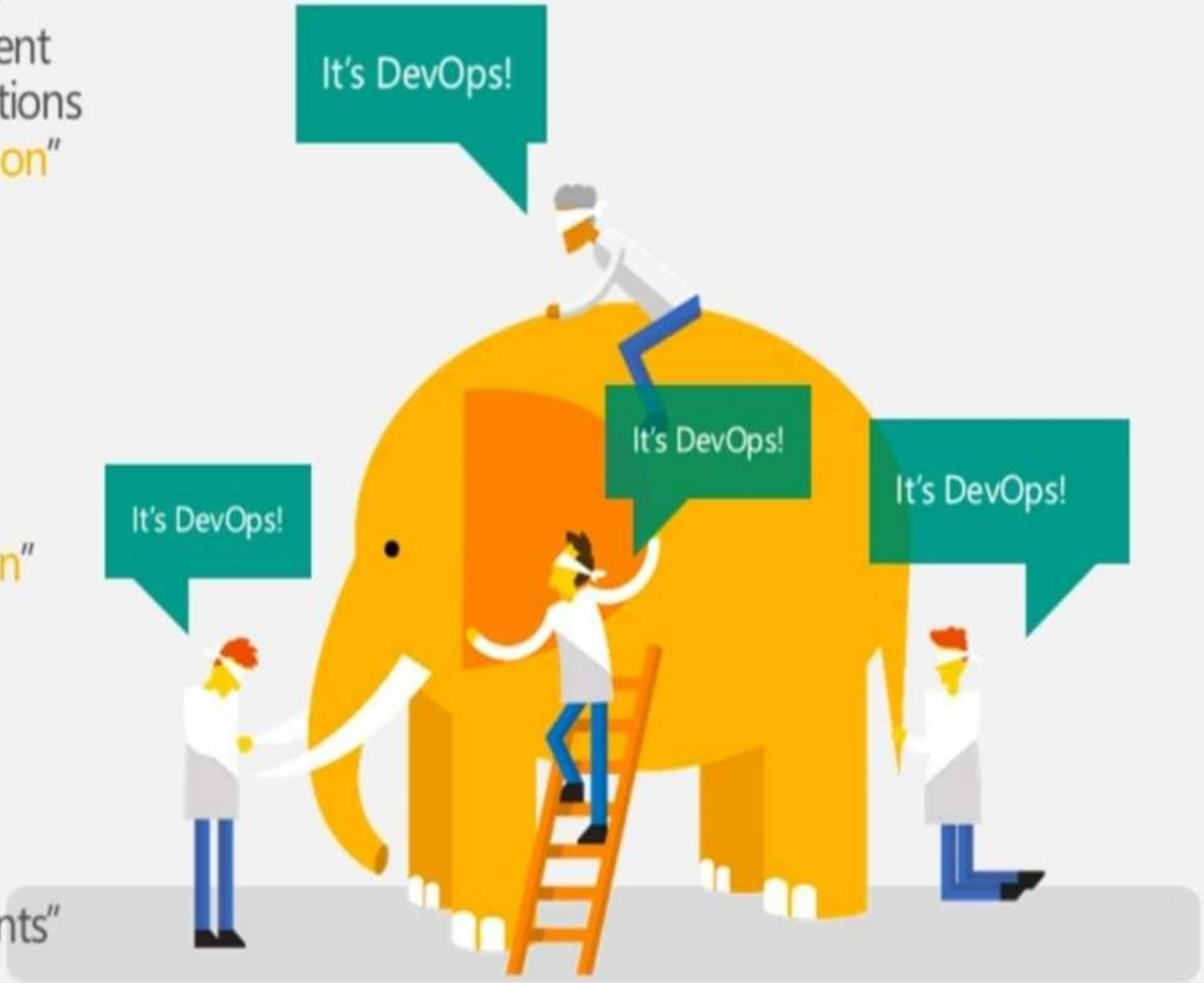

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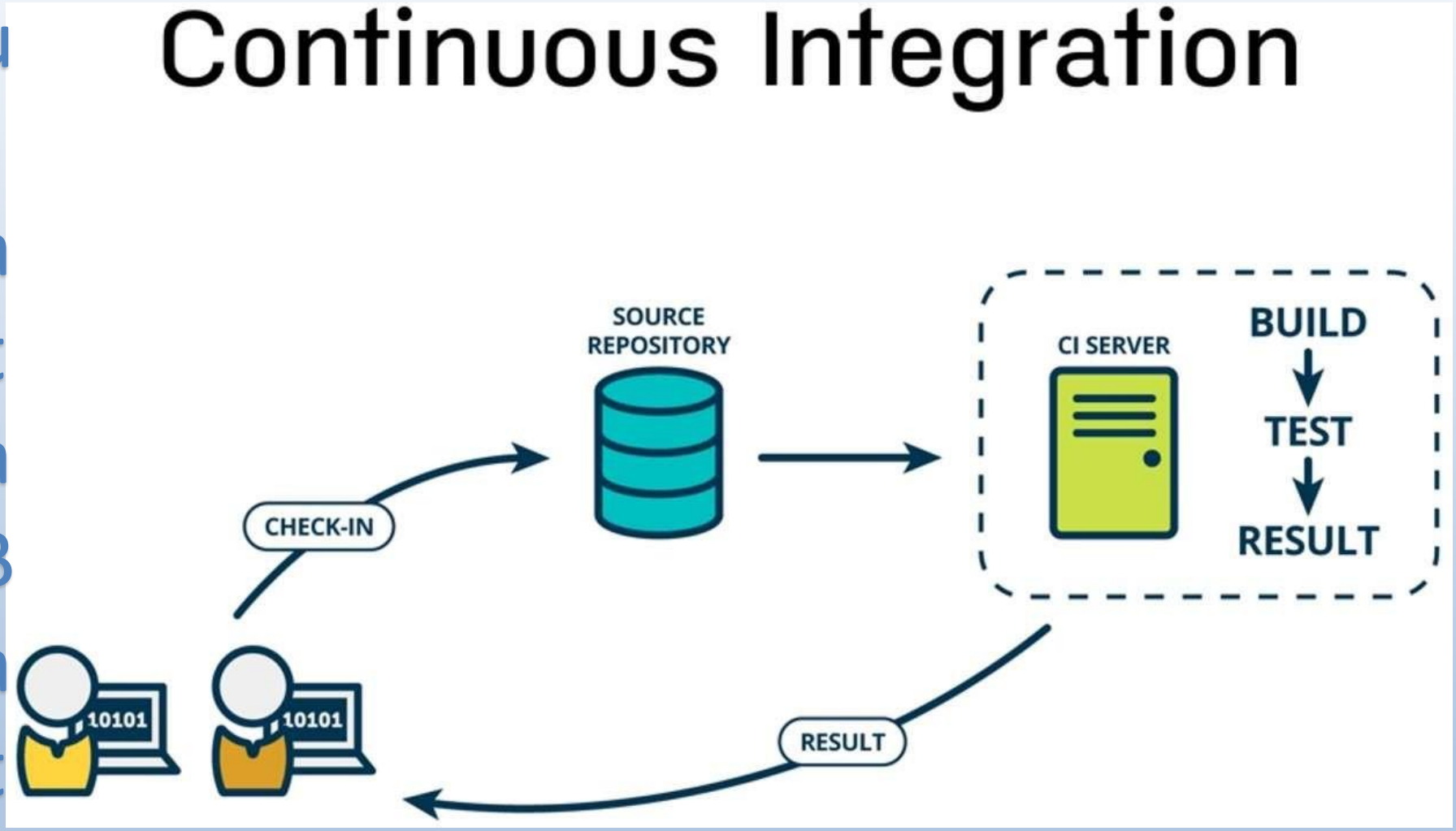
Continuous Integration



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Jenkins

Bamboo

TeamCity

go

Visual Studio
Team Foundation Server

Hudson

Travis

wercker

circleci

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CI is a practice

Discipline to **integrate frequently**

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CI is a practice

Strive to make **small change**

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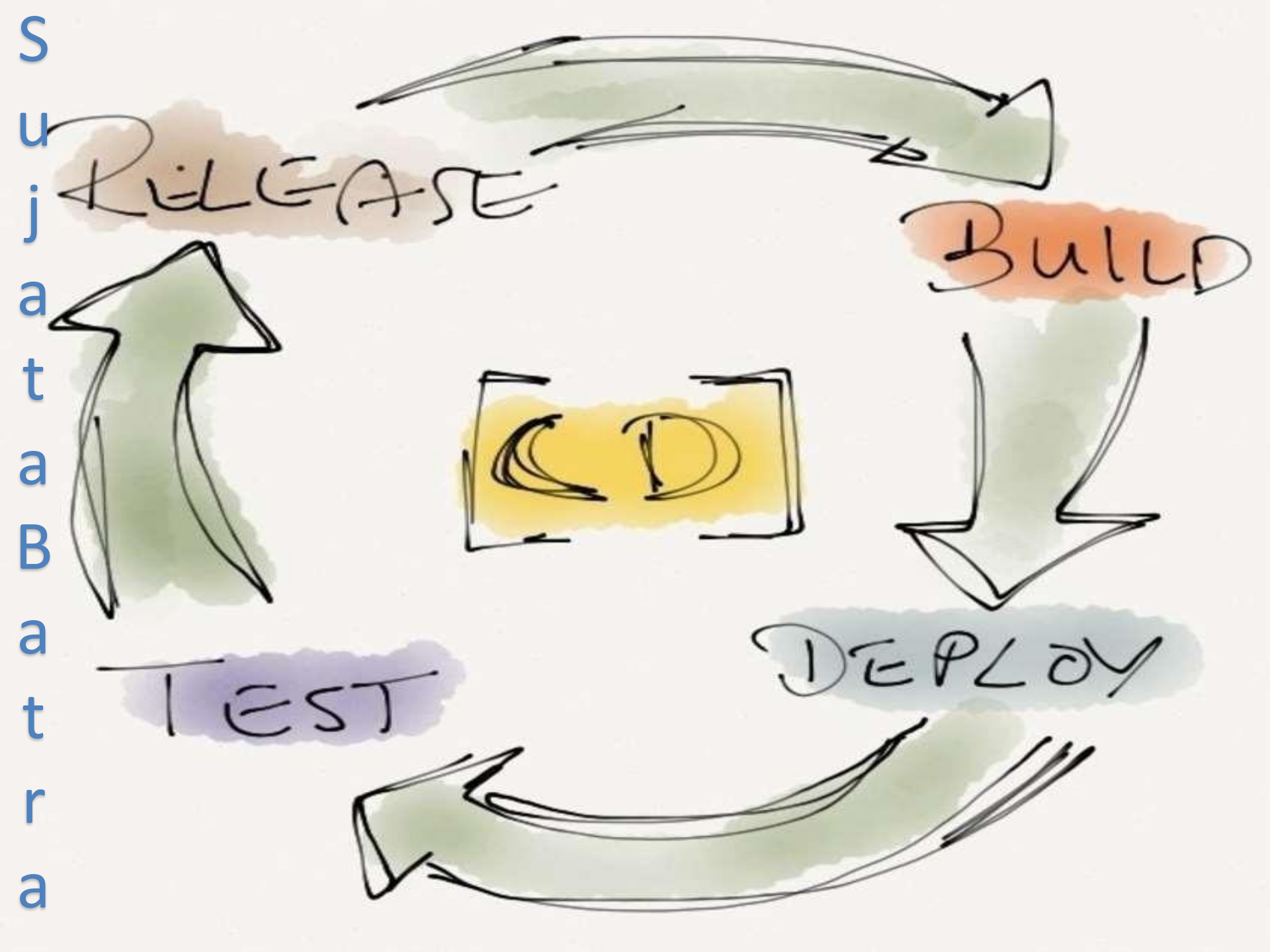
CI is a practice

Strive for **fast feedback**



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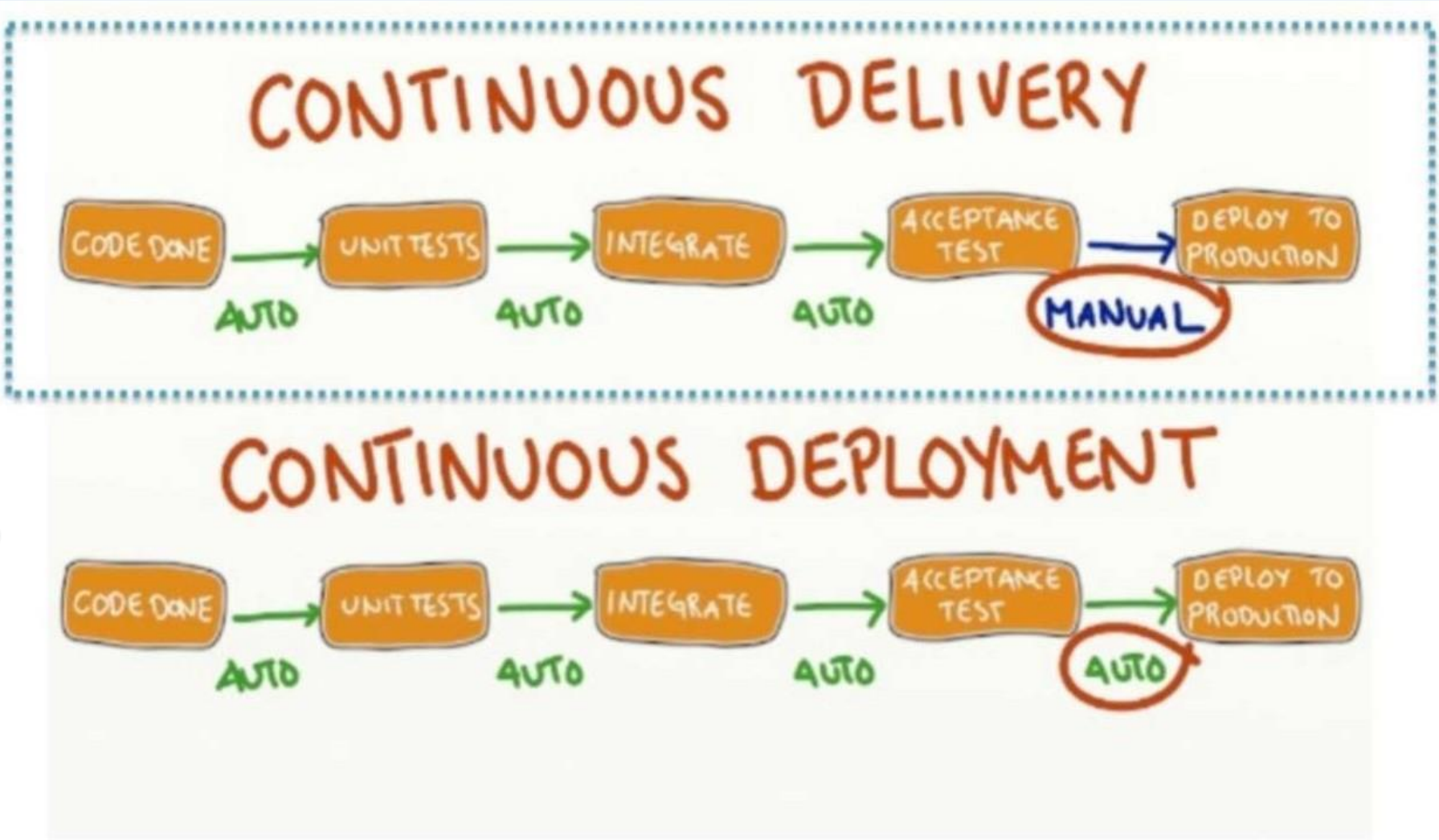

http://blog.crisp.se/2013/02/05/yassalsundman/continuous-delivery-vs-continuous-deployment

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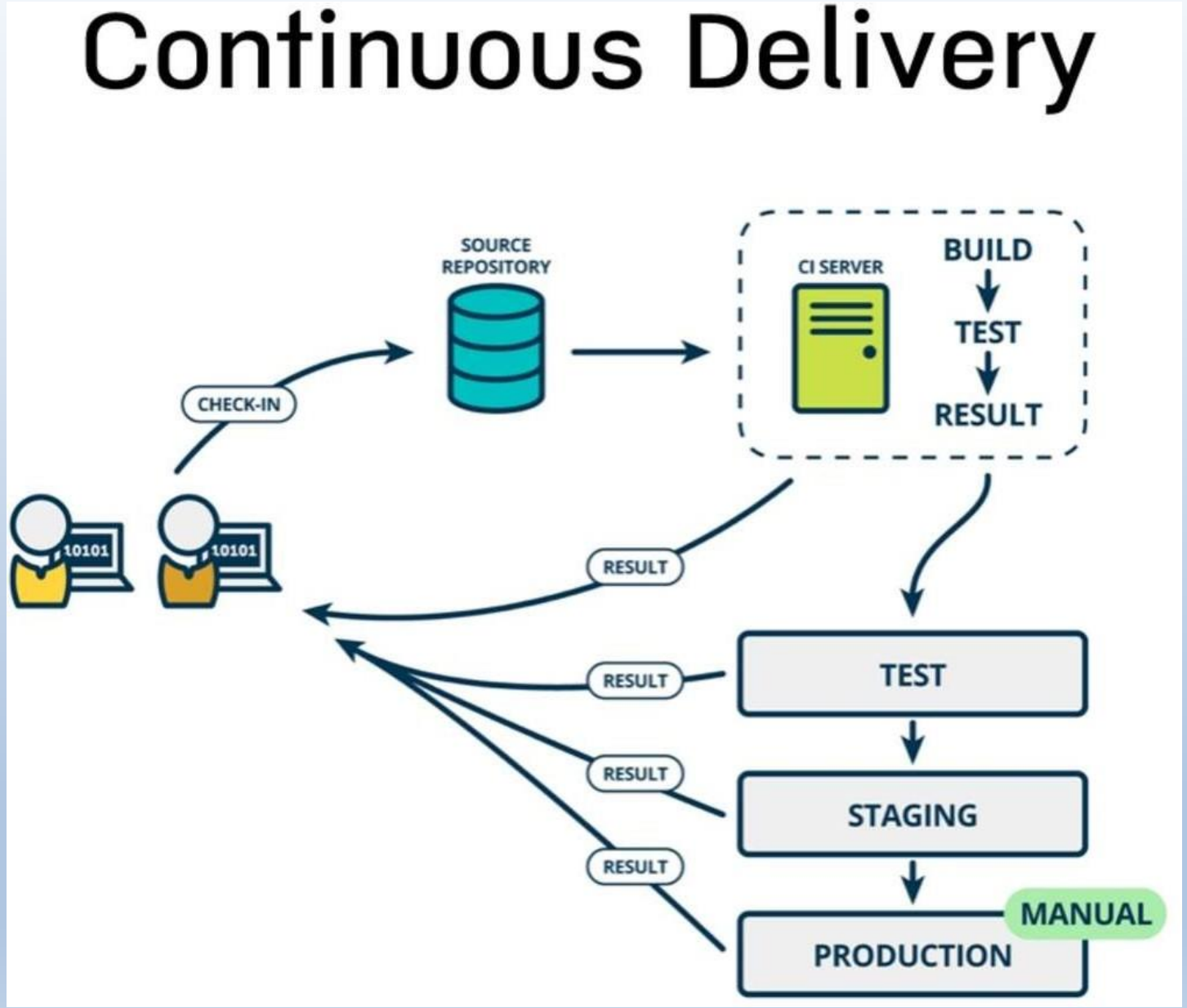
Continuous Delivery



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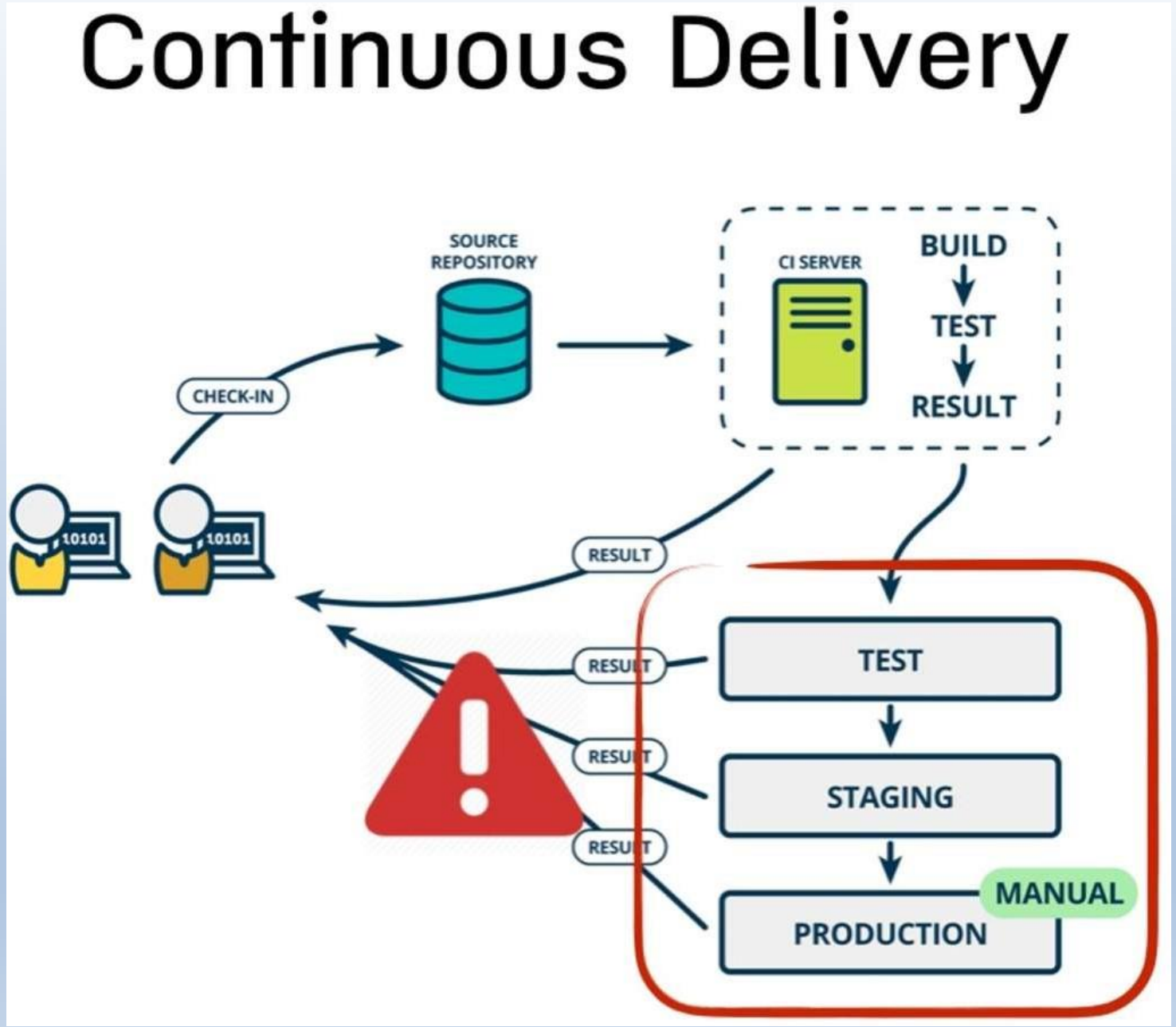
Continuous Delivery



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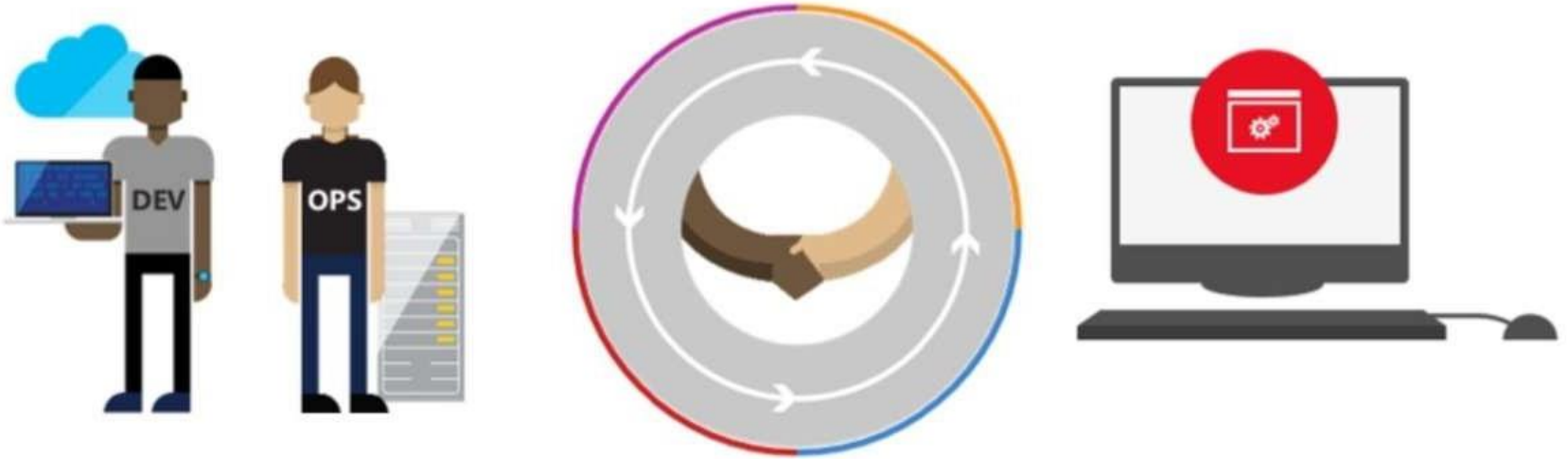
DevOps culture



1 People

2 Process

3 Products

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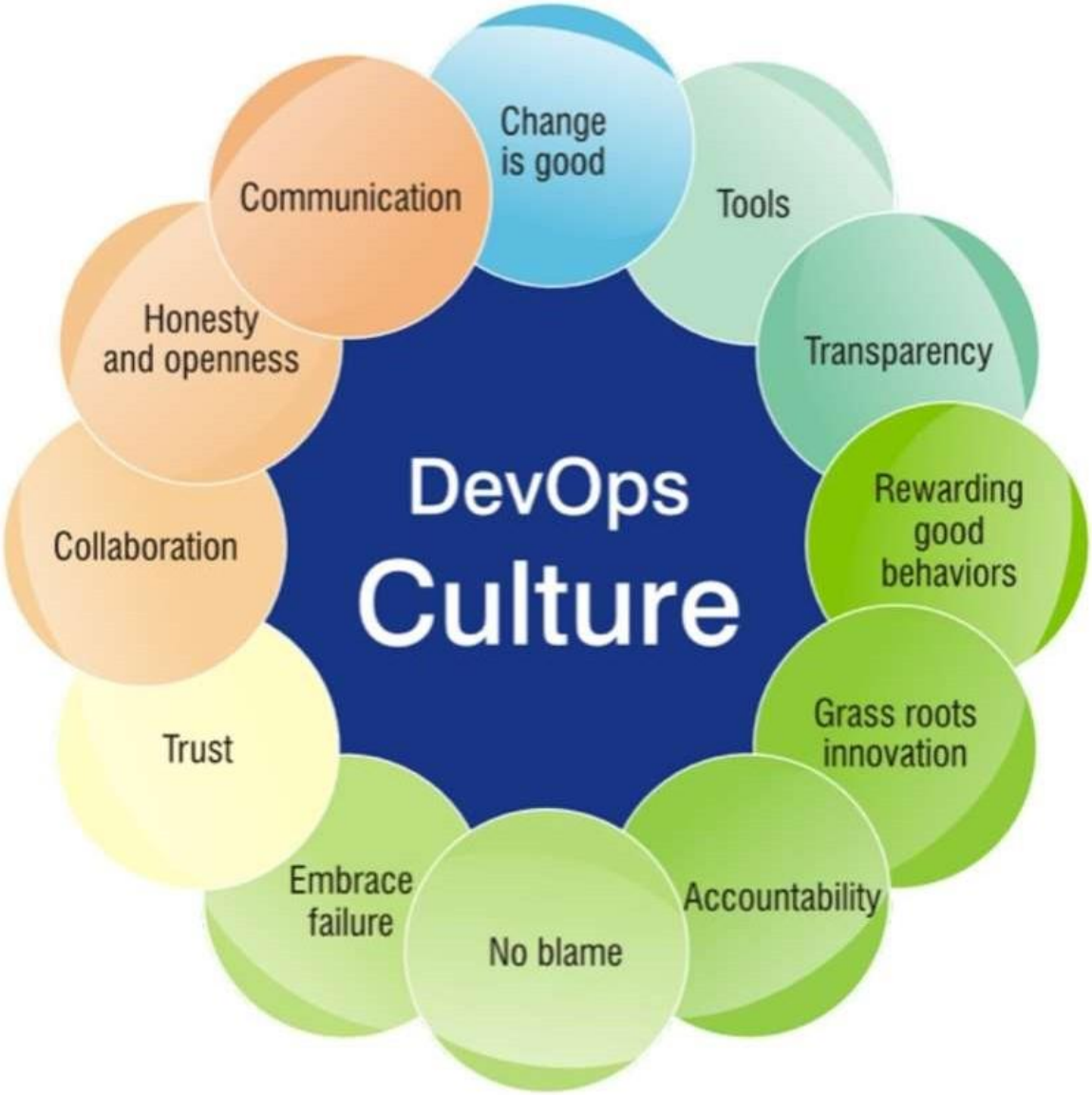

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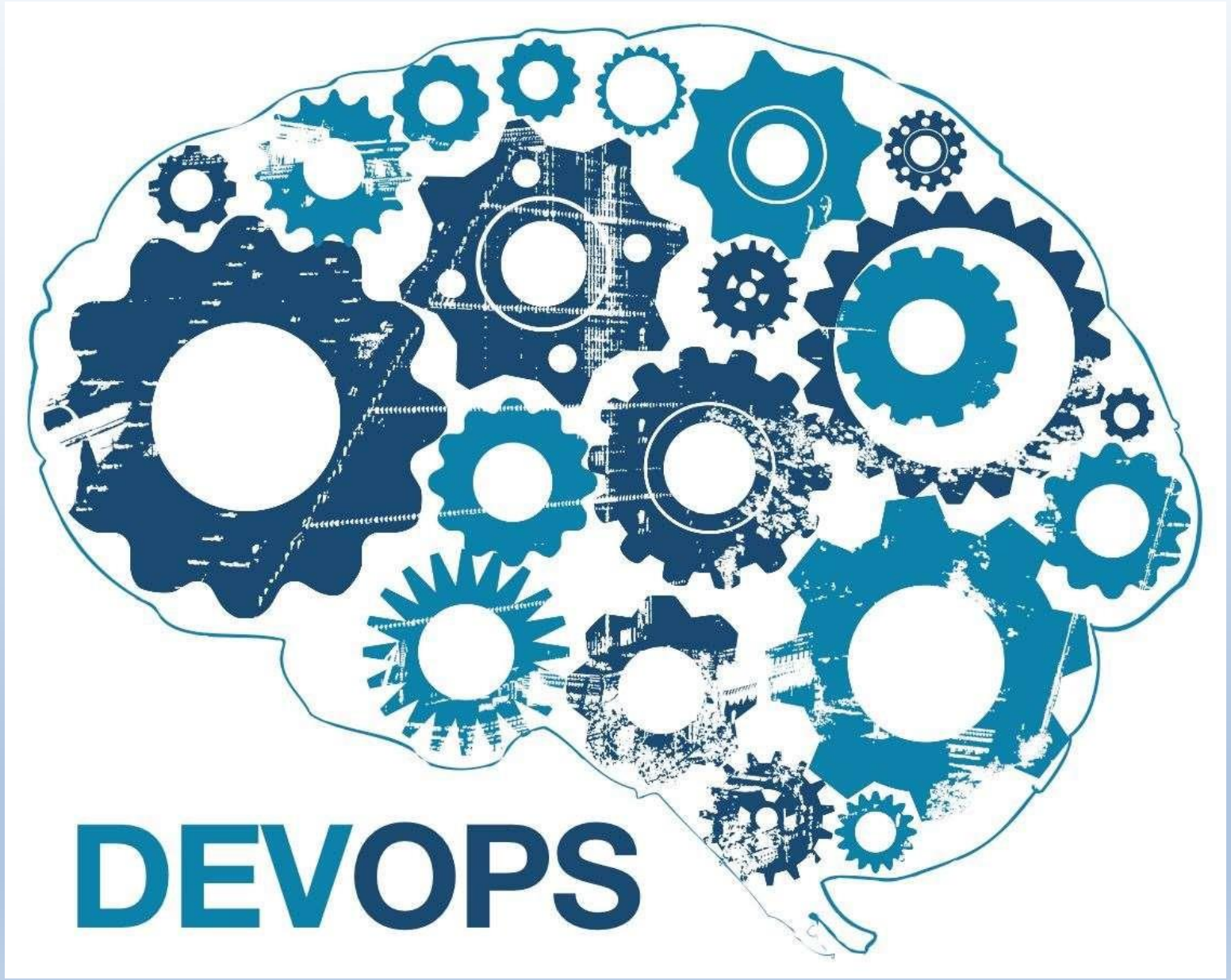

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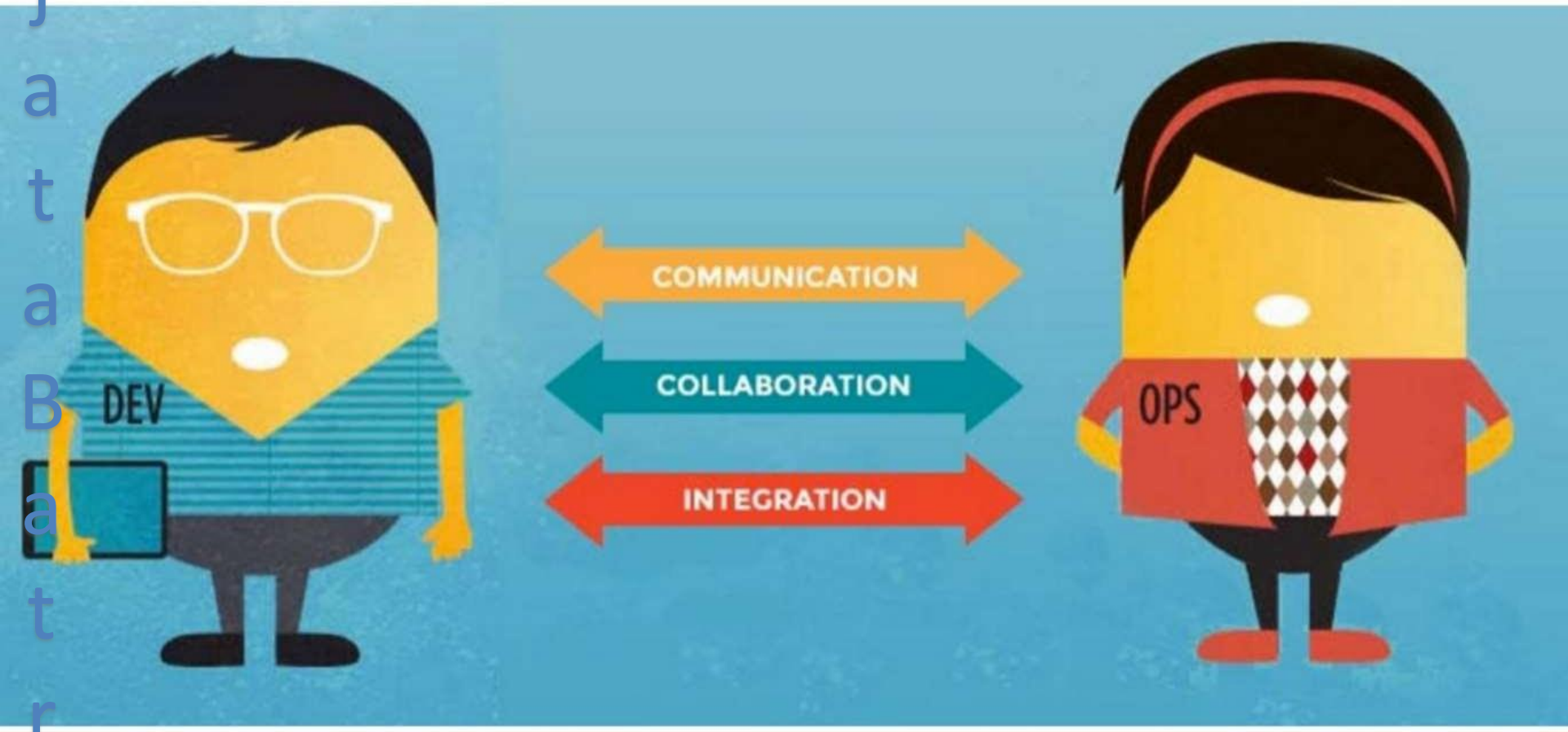
DevOps



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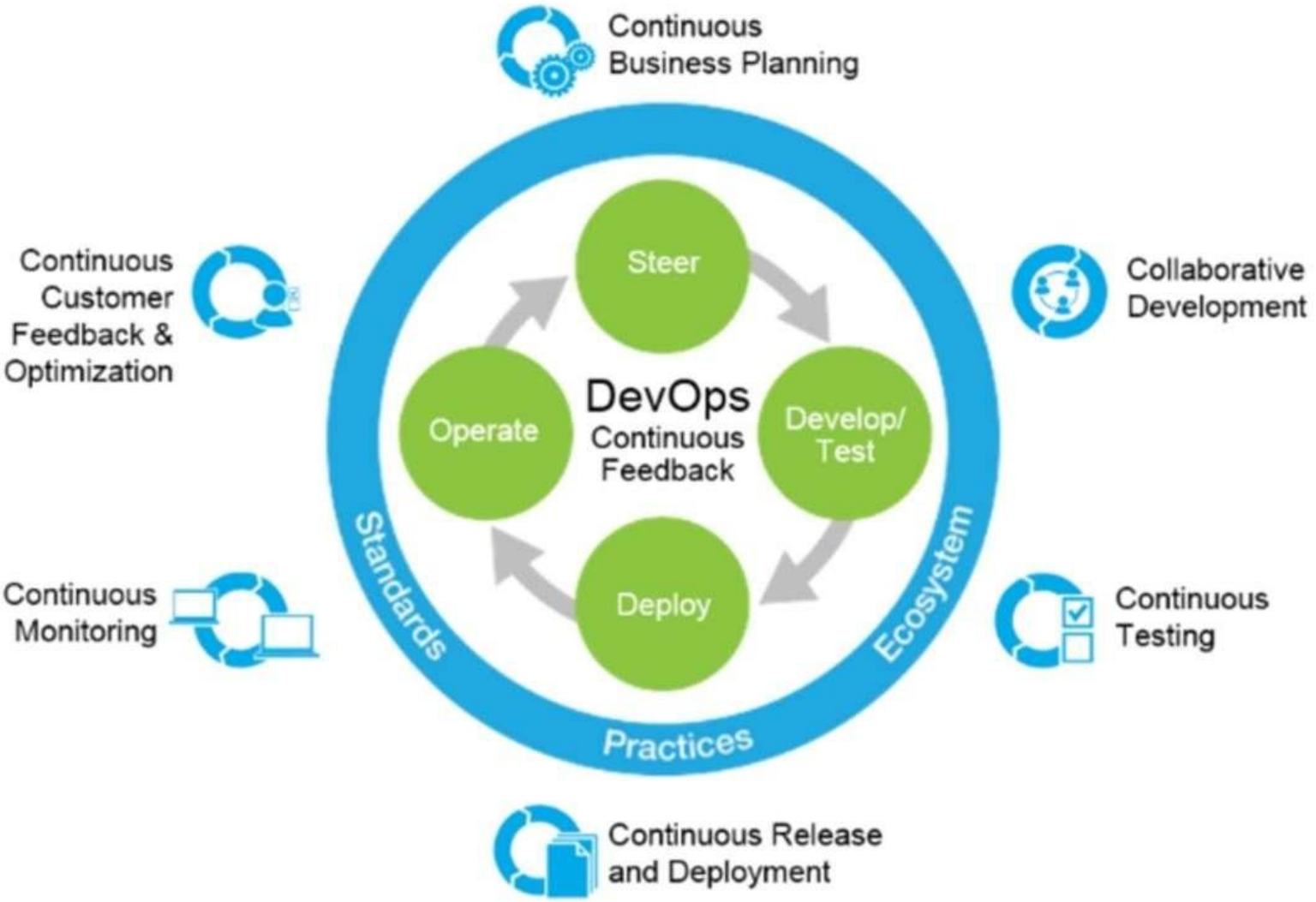
Goals



https://www.linkedin.com/pulse/9-critical-steps-devops-transformation-enterprises-sakthi-vadivelu

Add Ops into Dev

- Enhance Service Design with Operation al Knowledge
  - Reliability
  - Performance
  - Security
  - Test Them
- Build Feedback Loops from Production
  - Monitoring and KPI Dashboards
  - Postmortems
- Foster Culture of Responsibility
  - Whether your code passes test, gets deployed and stays up for users us your responsibility
- Make Development Better with Ops
  - Productionlike enviromnents
  - Power tooling

Accelerate Flow to Production

- Reduce batch size
- Automated environments means identical dev/test/prod
- Create safety through automation
  - Continuous Integration/Testing
  - Automated Regression Testing
  - Continuous Delivery
  - Continuous Deployment
  - Feature Flags (A/B Testing)
  - Security Testing

Add Dev into Ops

- Don’t do tasks for people
  - Build tools so they can do their own work
- Monitoring/logging/metrics feeds back into dev (and the business)
- Blameless incident postmortems
- Developers Do production support/empower ops acceptance

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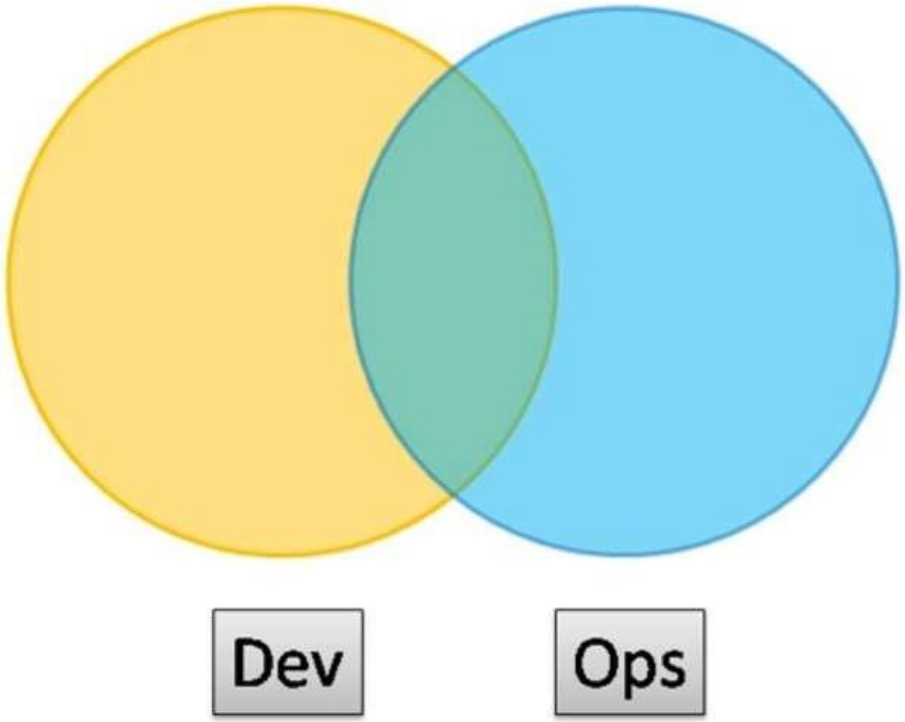
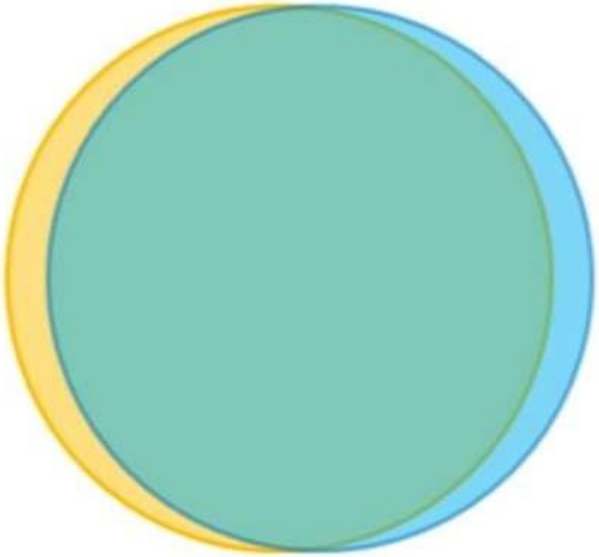
DevOps Team Topologies

Type 1 – Smooth Collaboration

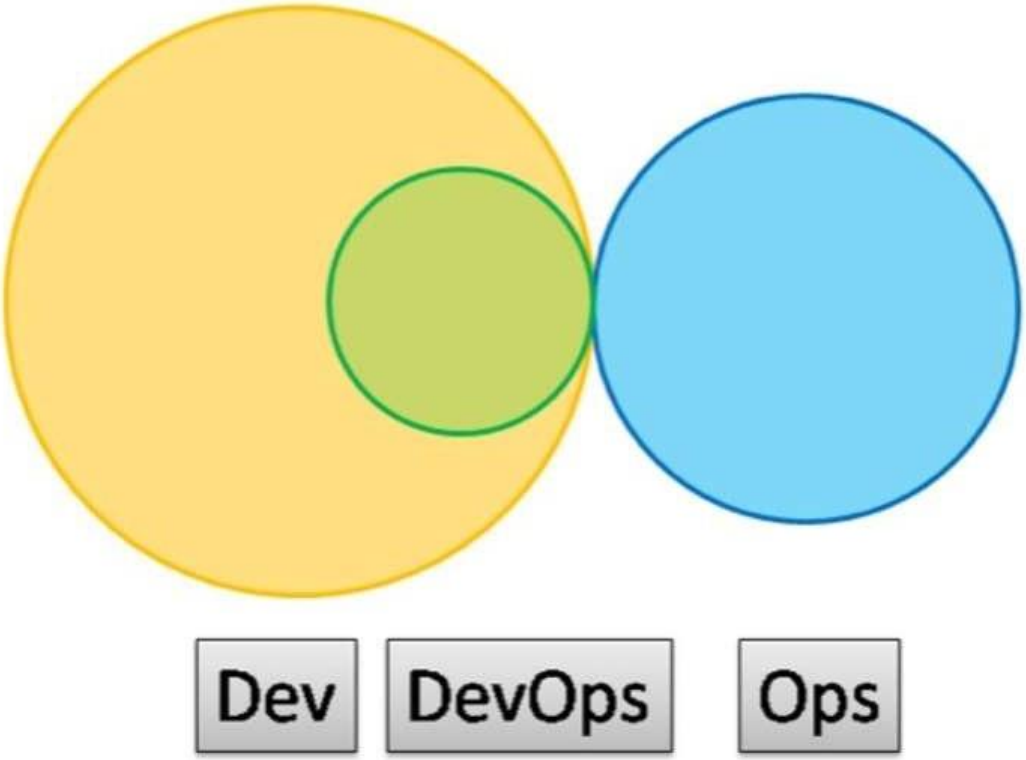


https://blog.matthewskelton.net/2013/10/22/what-team-structure-is-right-for-devops-to-flourish/

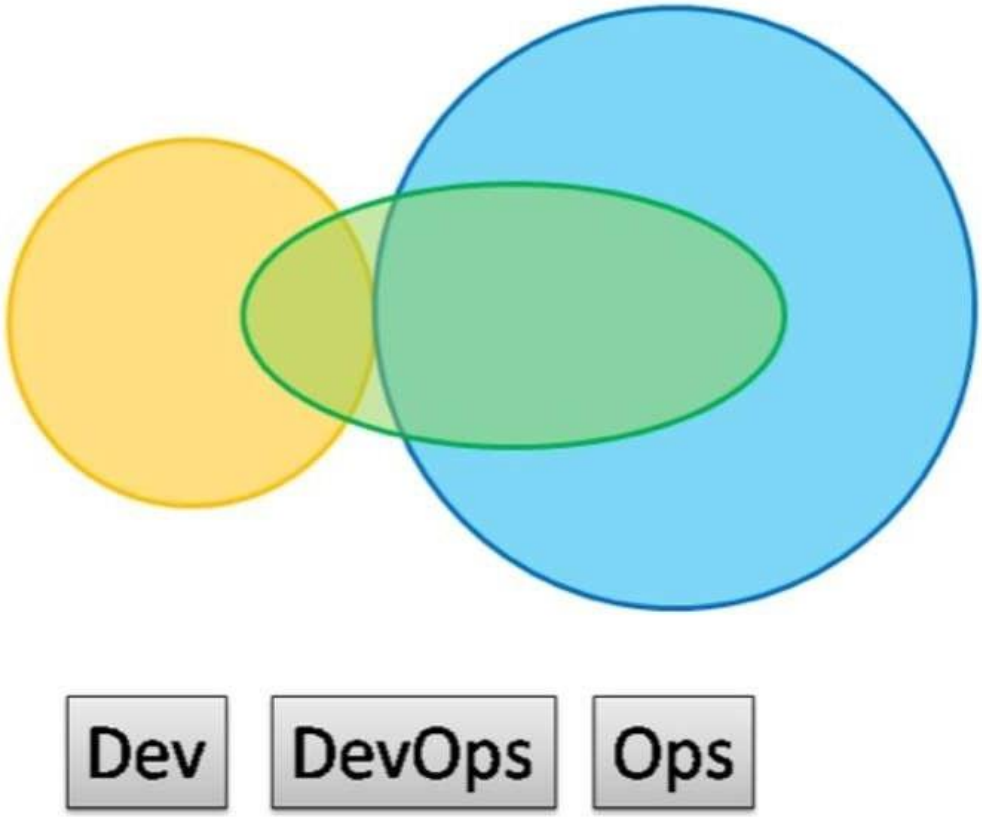
Type 2 – Fully Embedded



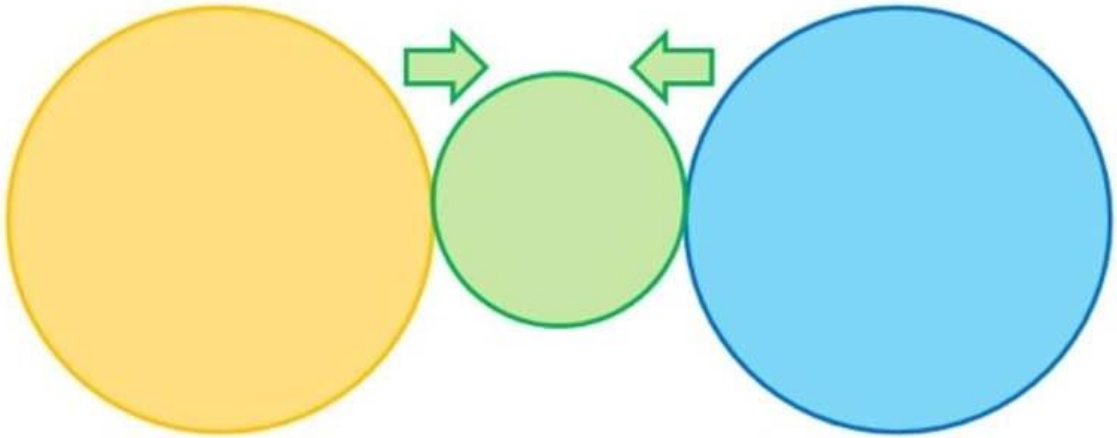
Type 3 – Infrastructure-as-a-Service



Type 4 – DevOps-as-a-Service



Type 5 – Temporary DevOps Team



Dev DevOps Ops

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No DevOps Team

== problem department ==

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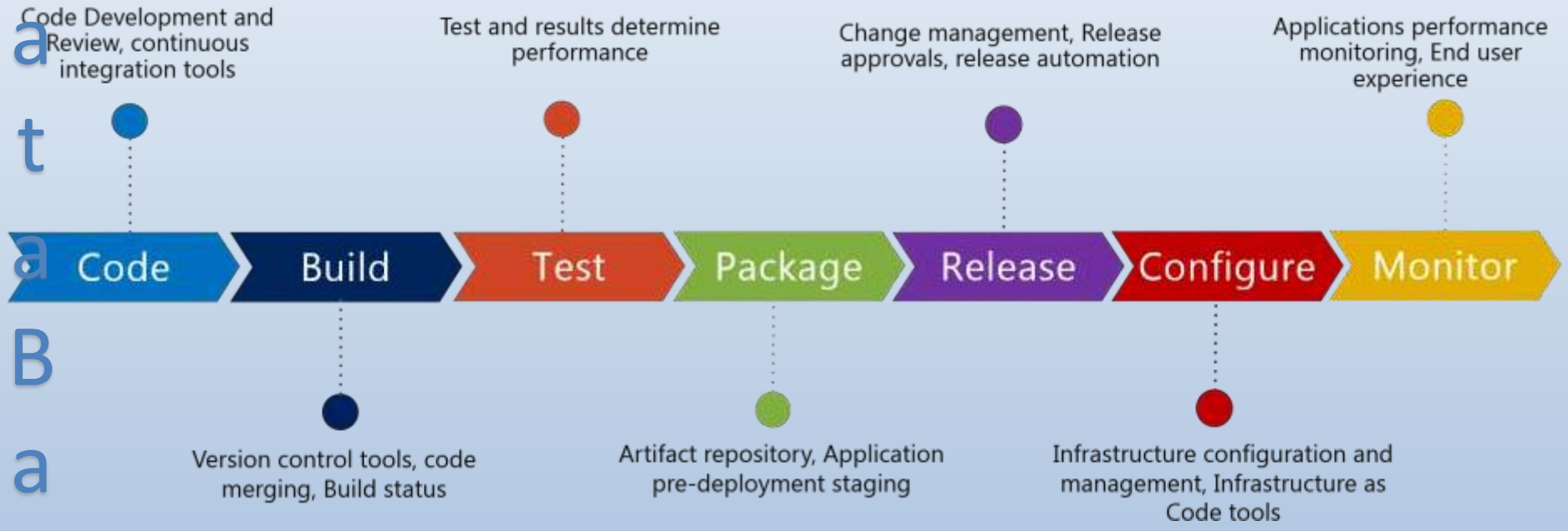
DevOps Tools ?

DevOps Toolchain



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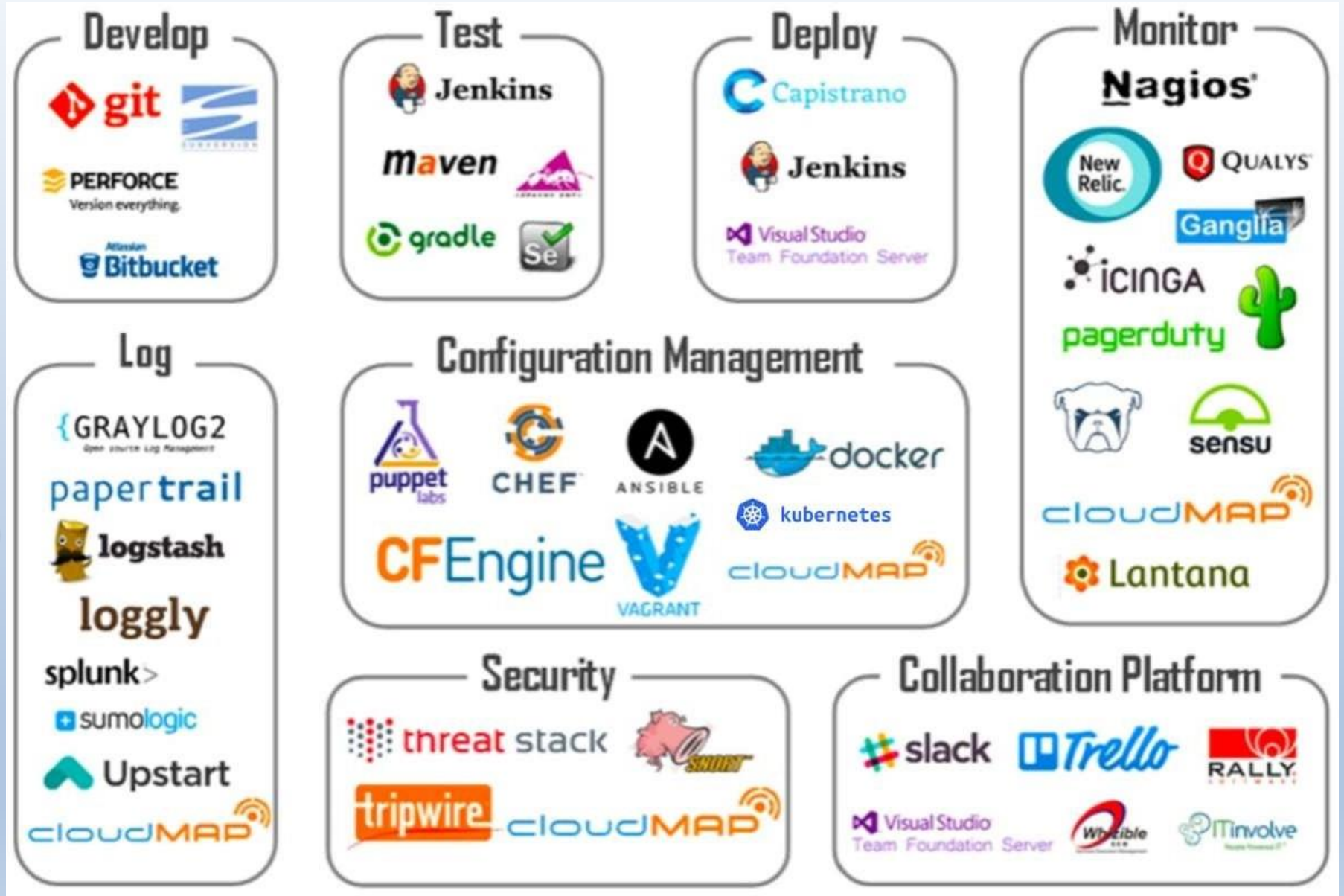

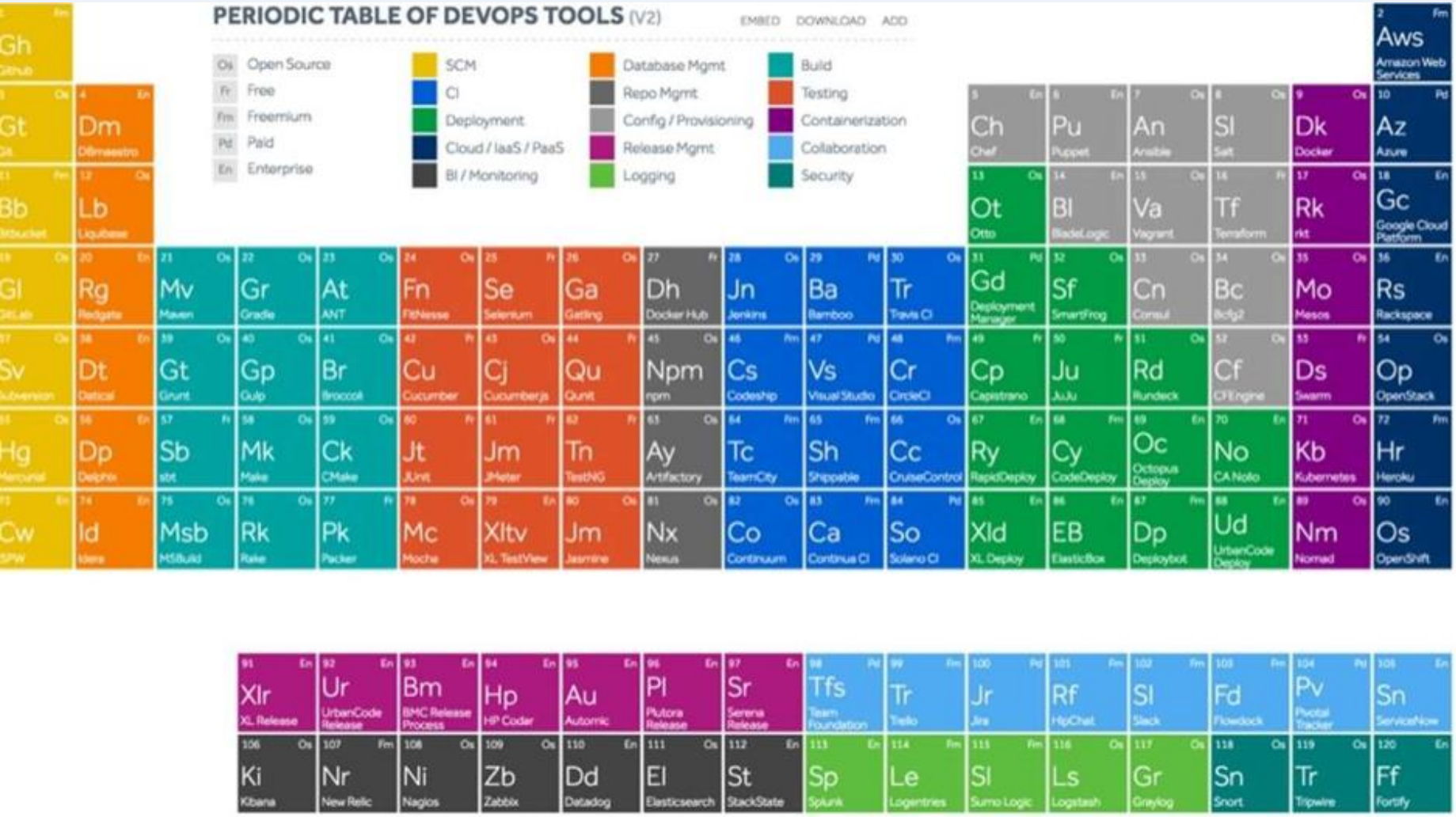
PERIODIC TABLE OF DEVOPS TOOLS (V2)
EMBED
DOWNLOAD
ADD
Os Open Source
Fr Free
Fm Freemium
Pd Paid
En Enterprise
SCM
CI
Deployment
Cloud / IaaS / PaaS
BI / Monitoring
Database Mgmt
Repo Mgmt
Config / Provisioning
Release Mgmt
Logging
Build
Testing
Containerization
Collaboration
Security
Gh GitHub
Aws Amazon Web Services
Gt Git
Dm DBmaestro
Bb Bitbucket
Lb Liquibase
Ch Chef
Pu Puppet
An Ansible
Sl Salt
Dk Docker
Az Azure
Ot Otto
Bl BladeLogic
Va Vagrant
Tf Terraform
Rk rkt
Gc Google Cloud Platform
Gl GitLab
Rg Redgate
Mv Maven
Gr Gradle
At ANT
Fn Fitnesse
Se Selenium
Ga Gatling
Dh Docker Hub
Jn Jenkins
Ba Bamboo
Tr Travis CI
Gd Deployment Manager
Sf SmartFrog
Cn Consul
Bc Bcfg2
Mo Mesos
Rs Rackspace
Sv Subversion
Dt Datical
Gt Grunt
Gp Gulp
Br Broccoli
Cu Cucumber
Cj Cucumberjs
Qu Qunit
Npm npm
Cs Codeship
Vs Visual Studio
Cr CircleCI
Cp Capistrano
Ju JuJu
Rd Rundeck
Cf CFEngine
Ds Swarm
Op OpenStack
Hg Mercurial
Dp Delphix
Sb sbt
Mk Make
Ck CMake
Jt JUnit
Jm JMeter
Tn TestNG
Ay Artifactory
Tc TeamCity
Sh Shippable
Cc CruiseControl
Ry RapidDeploy
Cy CodeDeploy
Oc Octopus Deploy
No CA Nolio
Kb Kubernetes
Hr Heroku
Cw SPW
Id Idera
Msb MSBuild
Rk Rake
Pk Packer
Mc Mocha
Xltv XL TestView
Jm Jasmine
Nx Nexus
Co Continuum
Ca Continua CI
So Solano CI
Xld XL Deploy
EB ElasticBox
Dp Deploybot
Ud UrbanCode Deploy
Nm Nomad
Os OpenShift
Xlr XL Release
Ur UrbanCode Release
Bm BMC Release Process
Hp HP Codar
Au Automic
Pl Plutora Release
Sr Serena Release
Tfs Team Foundation
Tr Trello
Jr Jira
Rf HipChat
Sl Slack
Fd Flowdock
Pv Pivotal Tracker
Sn ServiceNow
Ki Kibana
Nr New Relic
Ni Nagios
Zb Zabbix
Dd Datadog
El Elasticsearch
St StackState
Sp Splunk
Le Logentries
Sl Sumo Logic
Ls Logstash
Gr Graylog
Sn Snort
Tr Tripwire
Ff Fortify

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DevOps Trends

Google Trends | Explore

Interest over time

Interest by region

Region

1	India	100
2	Israel	96
3	Singapore	73
4	Finland	60
5	Netherlands	51
6	Ukraine	50
7	Australia	48
8	United States	44
9	Sweden	43
10	United Kingdom	42

Related queries

1	devops what is
2	devops engineer
3	devops tools
4	agile
5	agile devops

DevOps Report 2015

Strong IT Performance is a competitive advantage

Firms with high-performing IT organizations were 2x as likely to exceed their profitability, market share, and productivity goals

Deploy code 30x faster

and with 200x shorter lead time as compared to their lower-performing peers

Have 60x fewer failures

and recover from failure 168x faster as compared to their lower-performing peers

DevOps Practices improve IT performance

DevOps Report 2016

High-performing teams deploy more frequently and have much faster lead times.

They make changes with fewer failures, and recover faster from failures.

200x more frequent deployments

2,555x shorter lead times

3x lower change failure rate

24x faster recovery from failures

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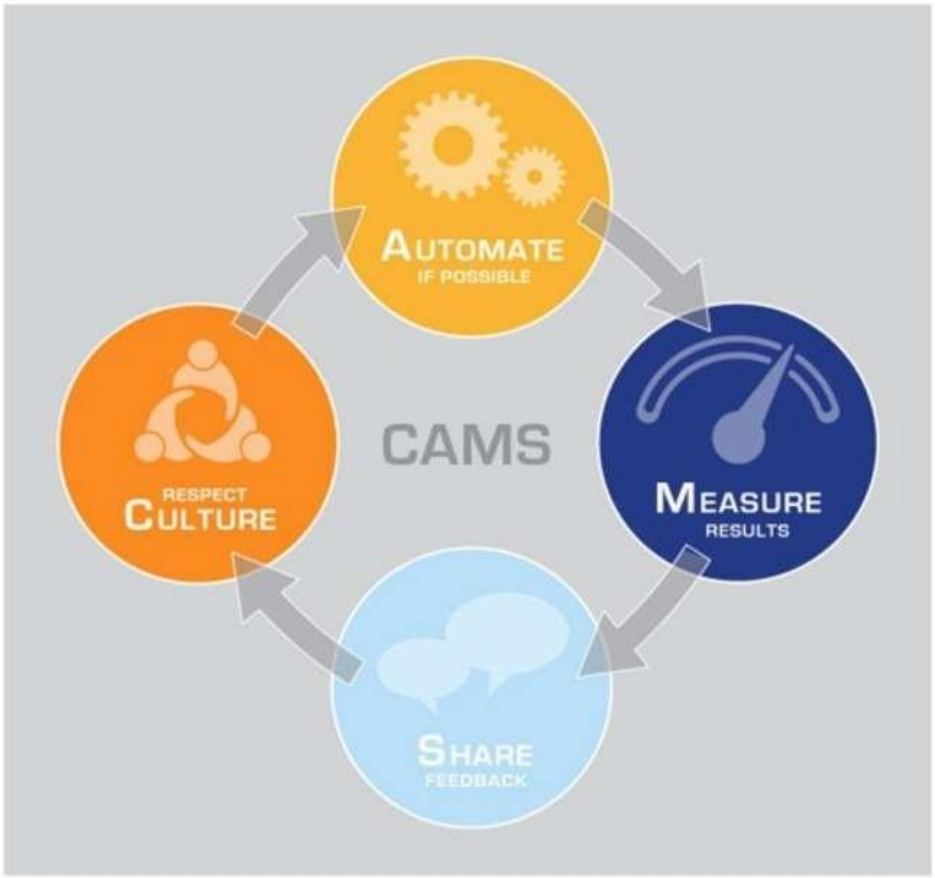
Summary

DevOps Principles



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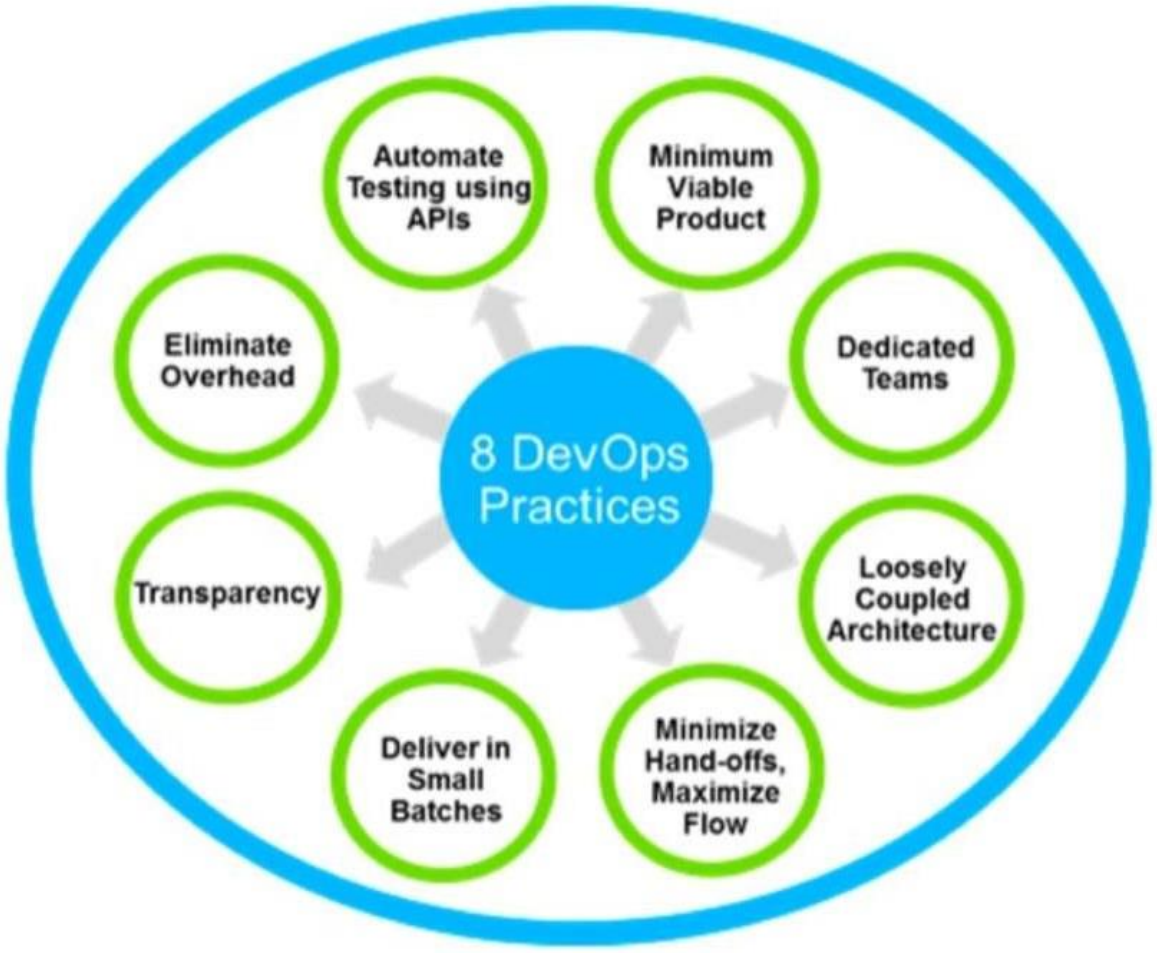
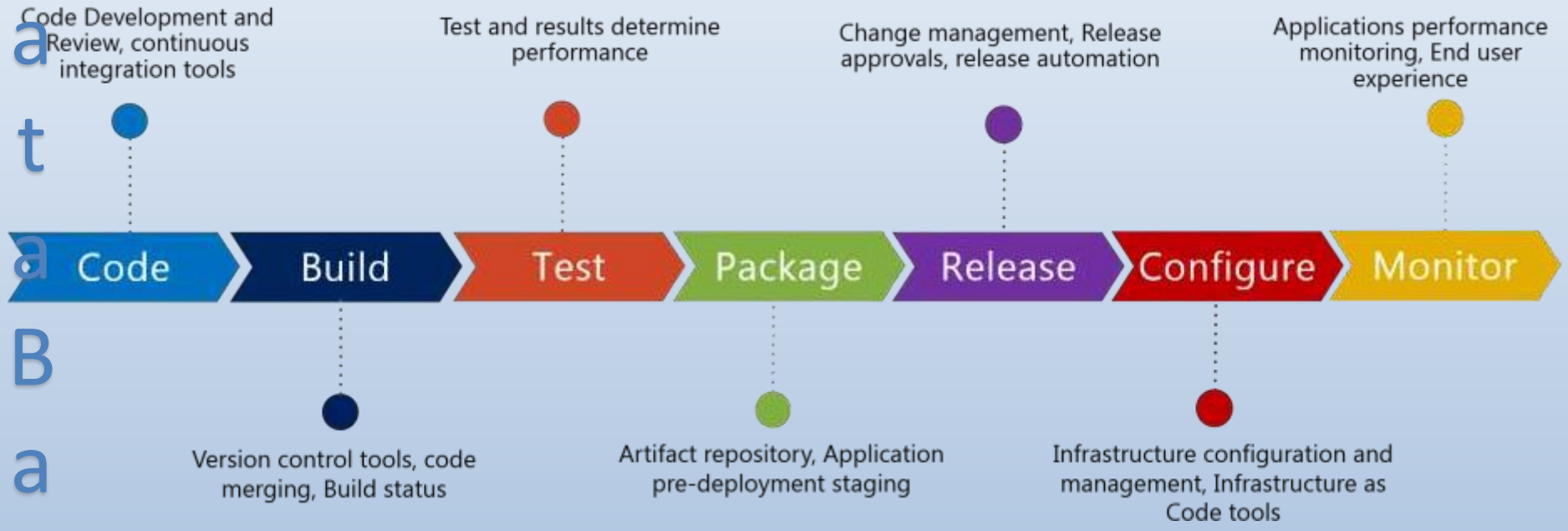
DevOps Practices



DevOps Toolchain



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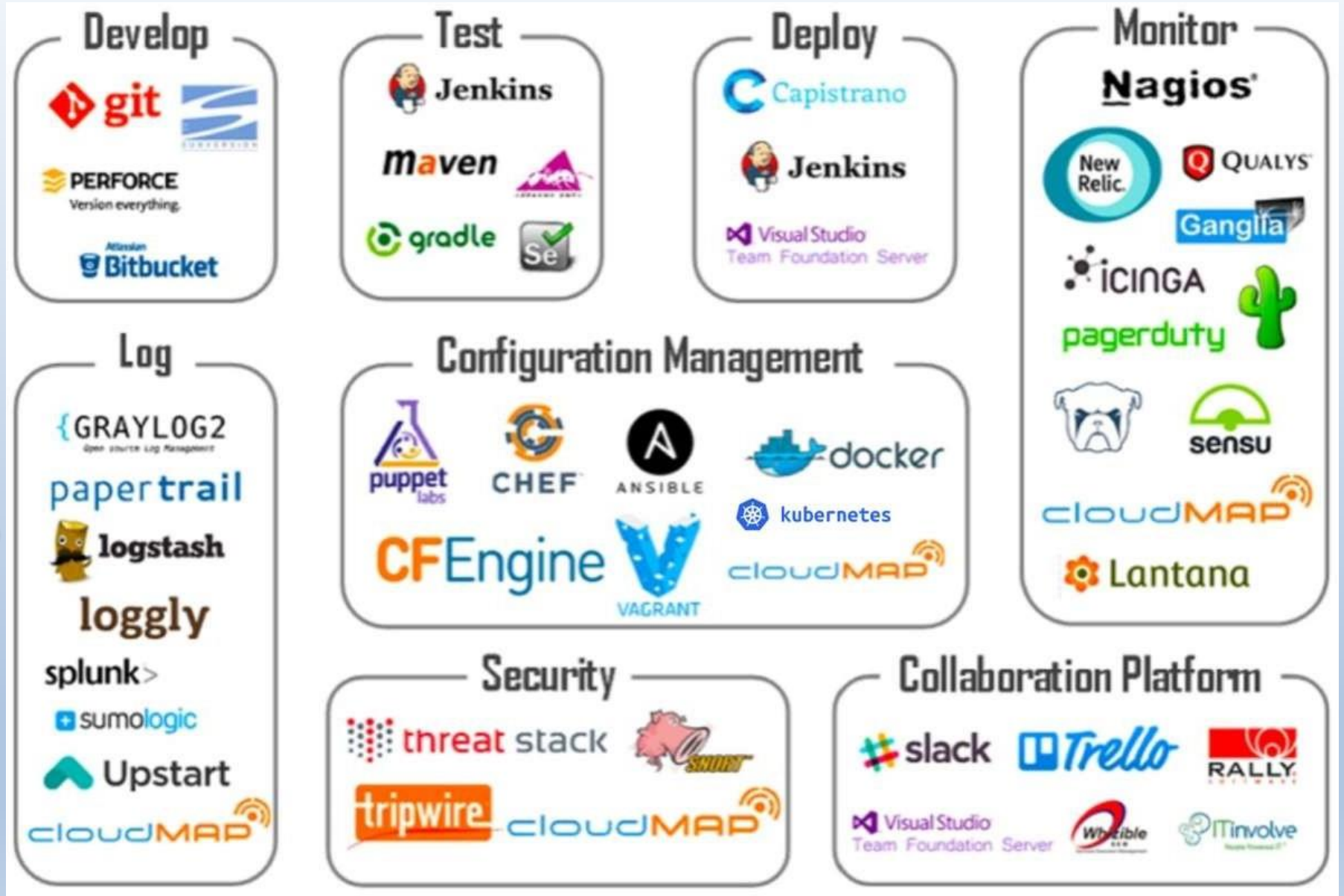

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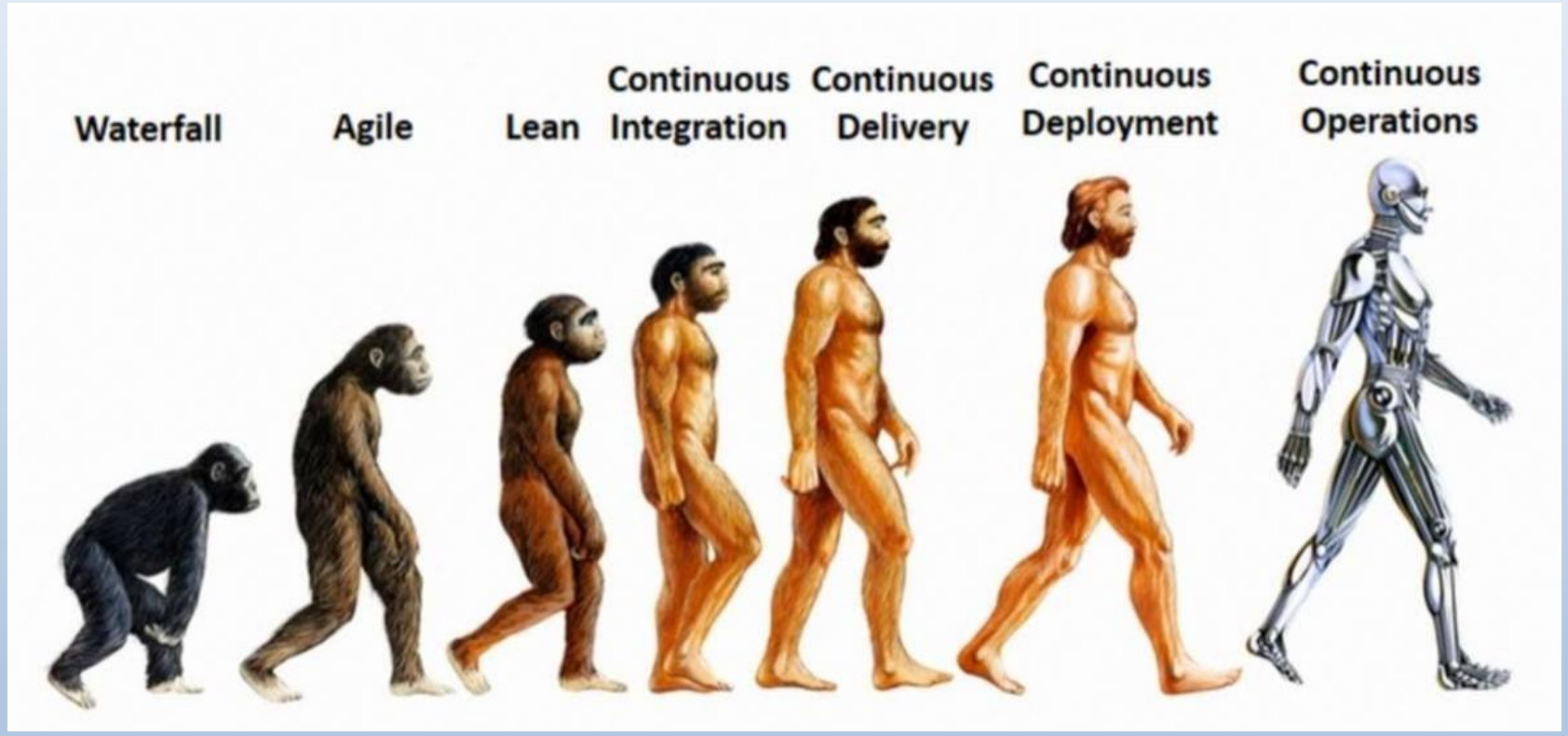

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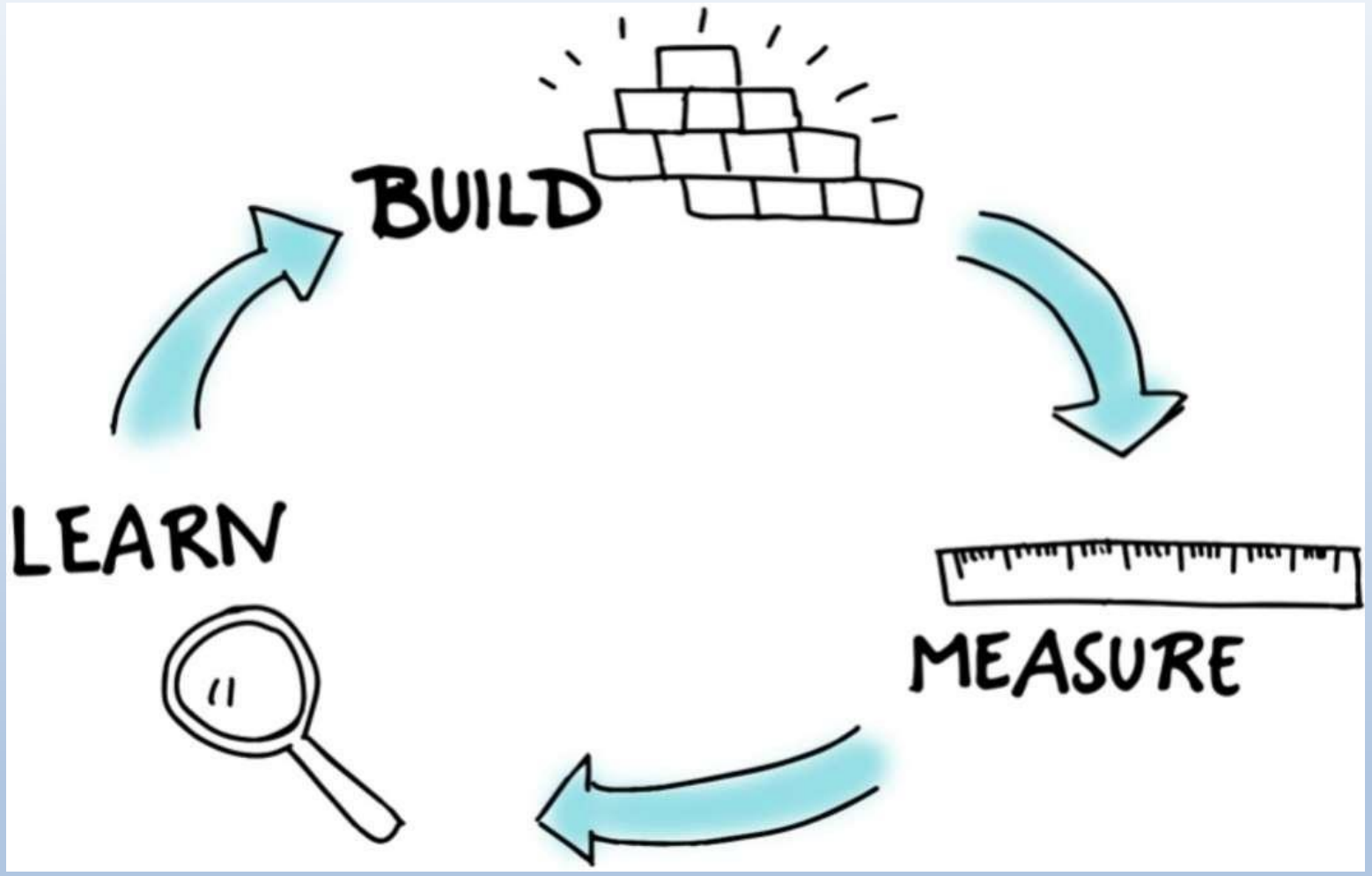

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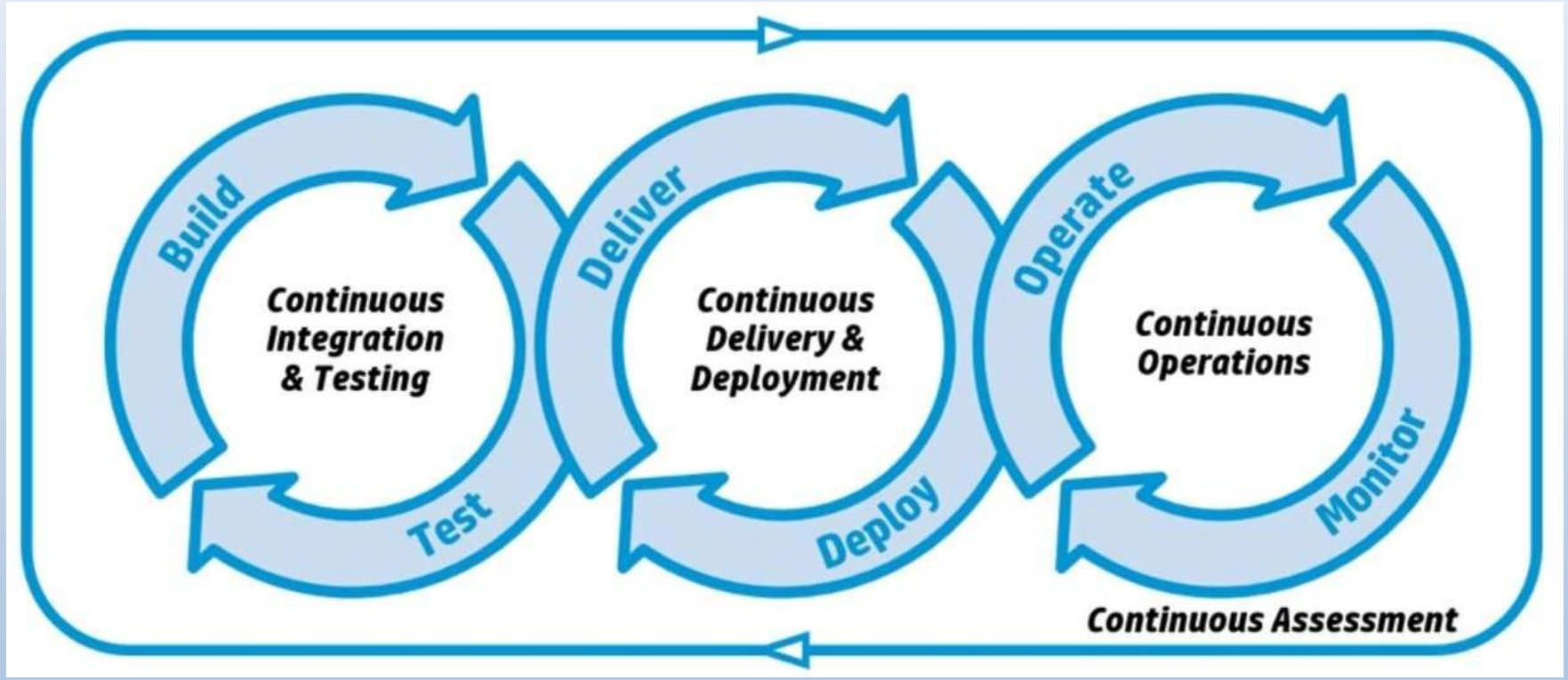

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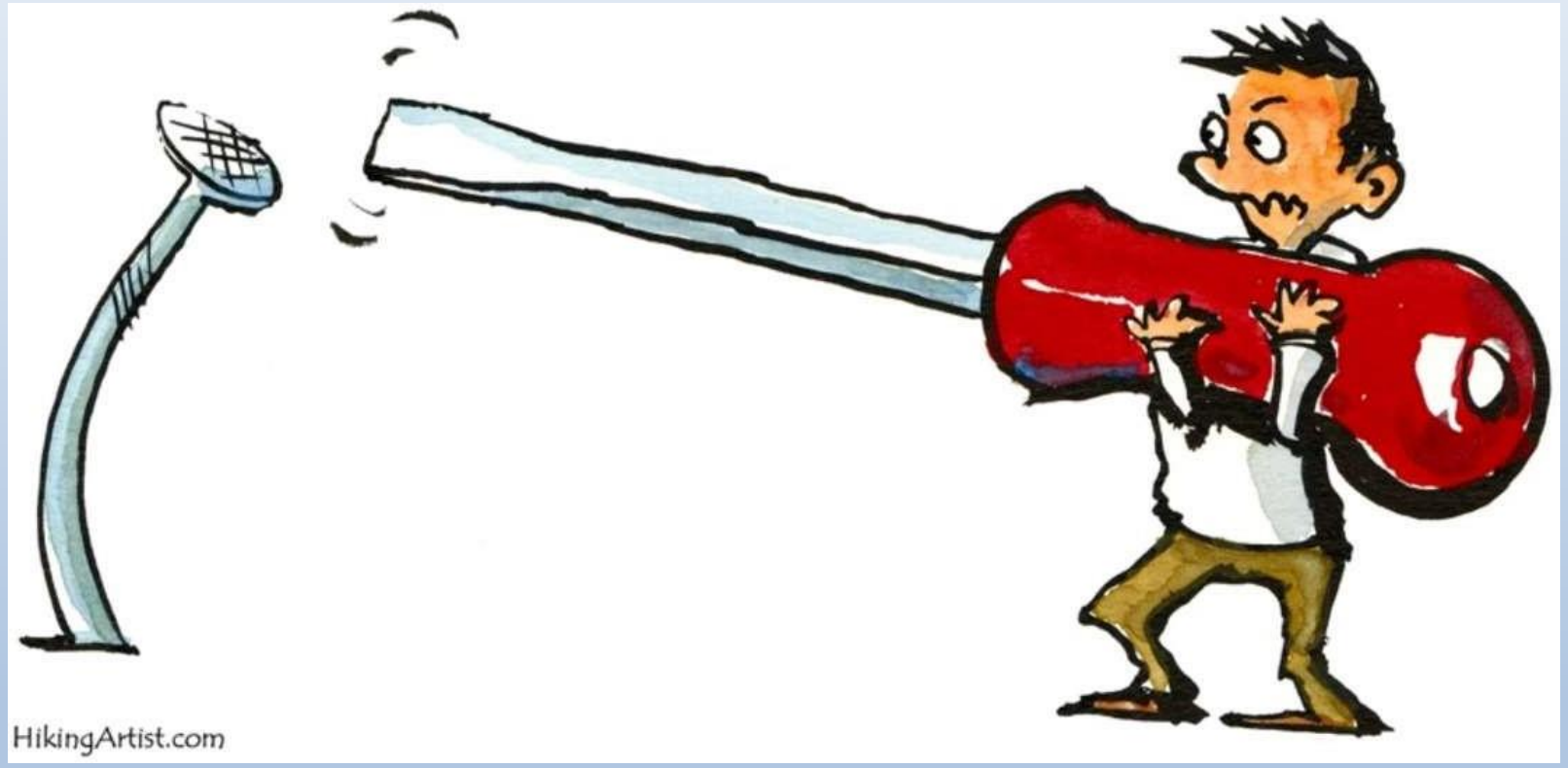

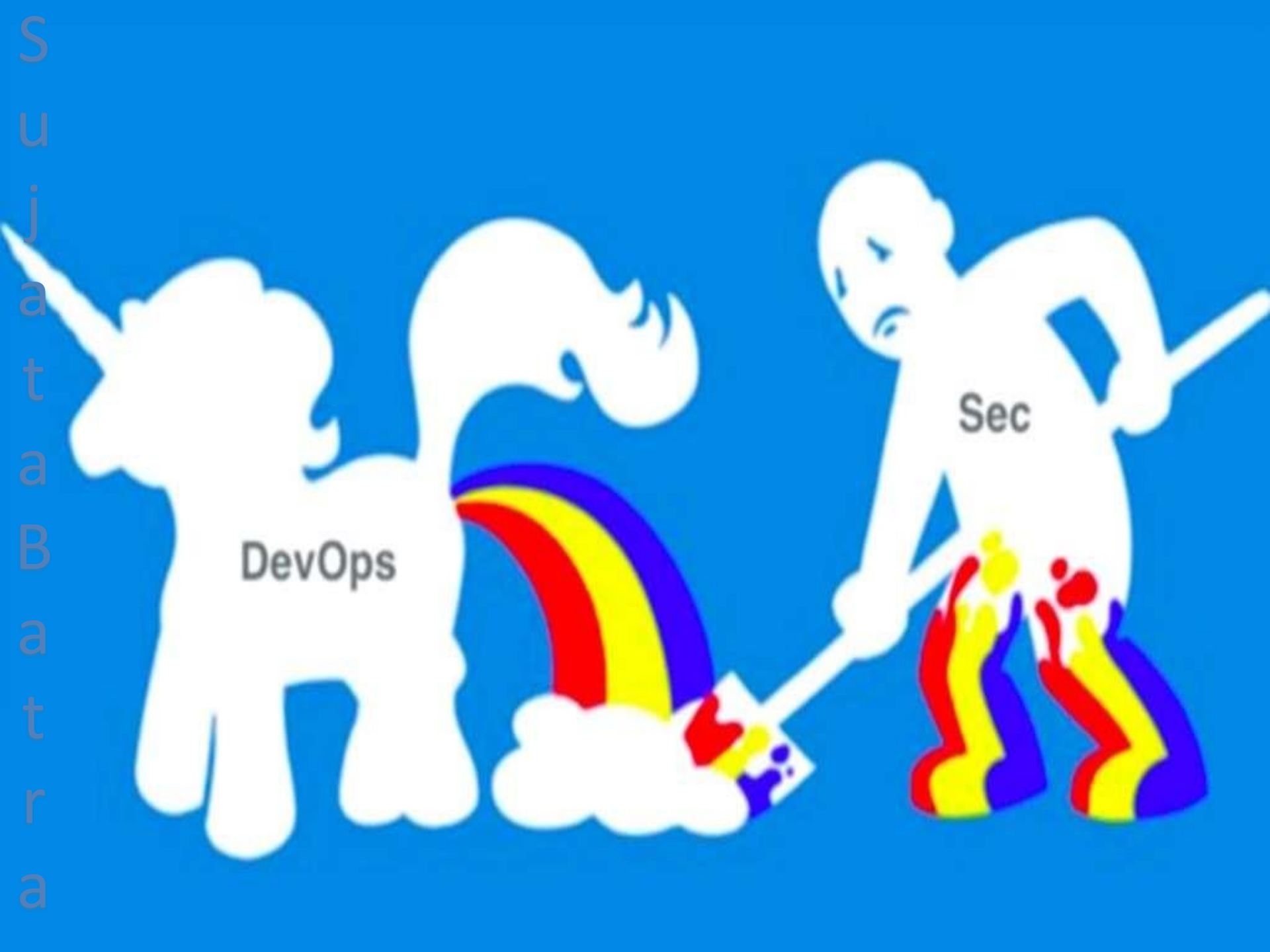

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Questions?