INTRODUCTION TO CLOUD COMPUTING & DEVOPS

BY RUPESH DESHMUKH

- **15+ Years** experience working with **Java**, **Scala** and related tools & frameworks
- Working as **Senior Technical Architect** for **Worldline Global Services Private Limited**
- I am passionate coder and is delighted to bring in automation in all processes
- I am from Pen – Raigad (Home Town) and Punekar since 2010
- I love signing and playing outdoor games like Badminton, Volleyball & Cricket

AGENDA

- Why Cloud Computing?
- What is Cloud Computing?
- Categorization in Cloud Computing
- Cloud Service Providers

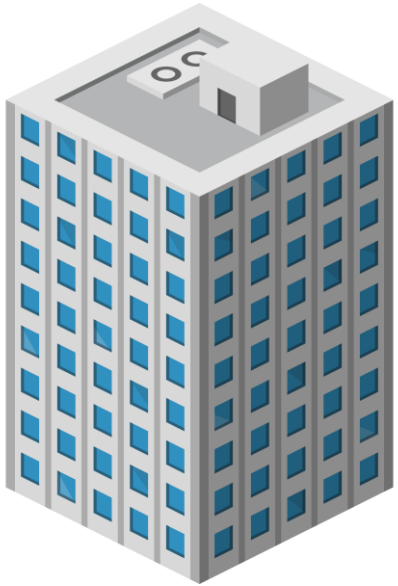
- What is DevOps?
- DevOps Pillars
- Infrastructure as Code
- CI/CD
- Automation

Worldline

WHY CLOUD COMPUTING?

WHY CLOUD COMPUTING?

- Upfront investment, higher price
- Allot dedicated space for servers
- Appoint separate team for hardware and software maintenance
- Less data security
- Less chance of data / disaster recovery
- Less scalability and flexibility
- Less collaboration
- No automatic updates
- Data cannot be accessed remotely
- Implementation takes time and efforts



On-Premise Data Centre

WHAT IS CLOUD COMPUTING?

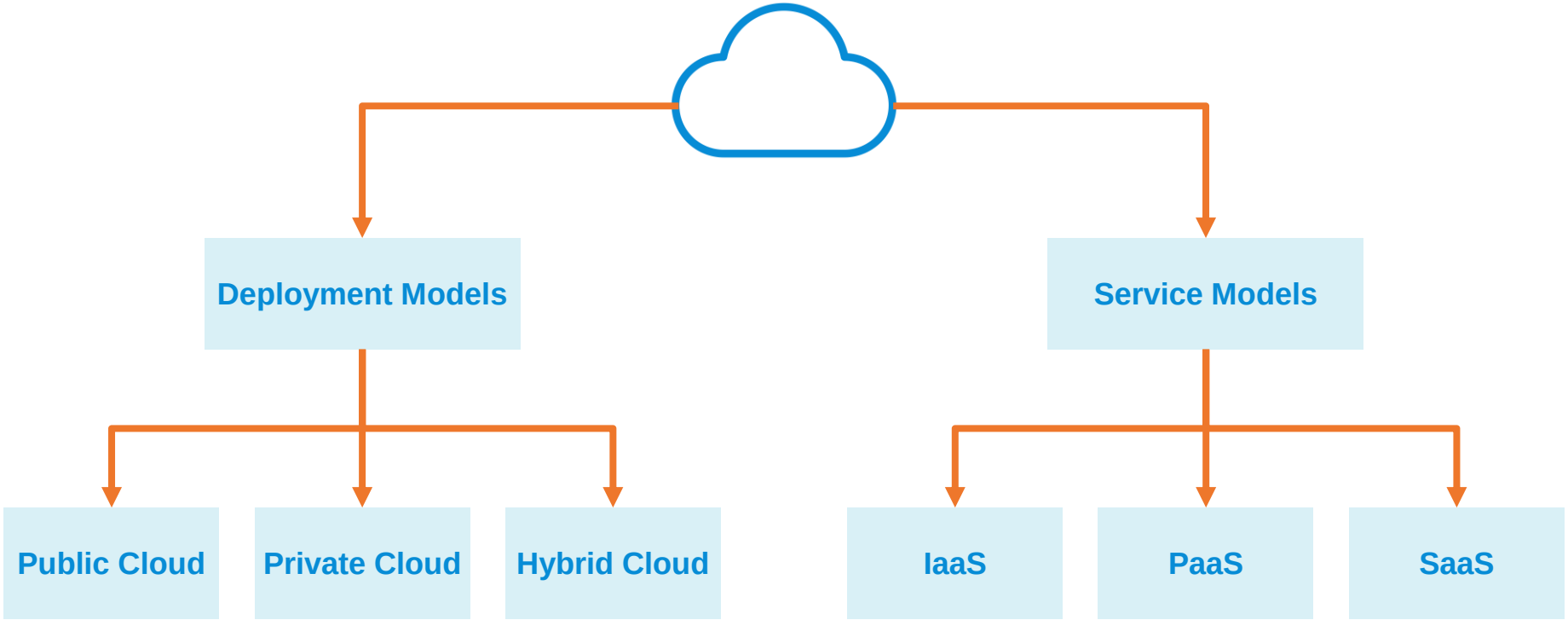
WHAT IS CLOUD COMPUTING?

Cloud computing is the on-demand delivery of compute power, database storage, applications, and other IT resources through a cloud services platform via the Internet with pay-as-you-go pricing.

Using cloud computing, organizations can use shared computing and storage resources rather than building, operating, and improving infrastructure on their own.

CATEGORIZATION IN CLOUD COMPUTING

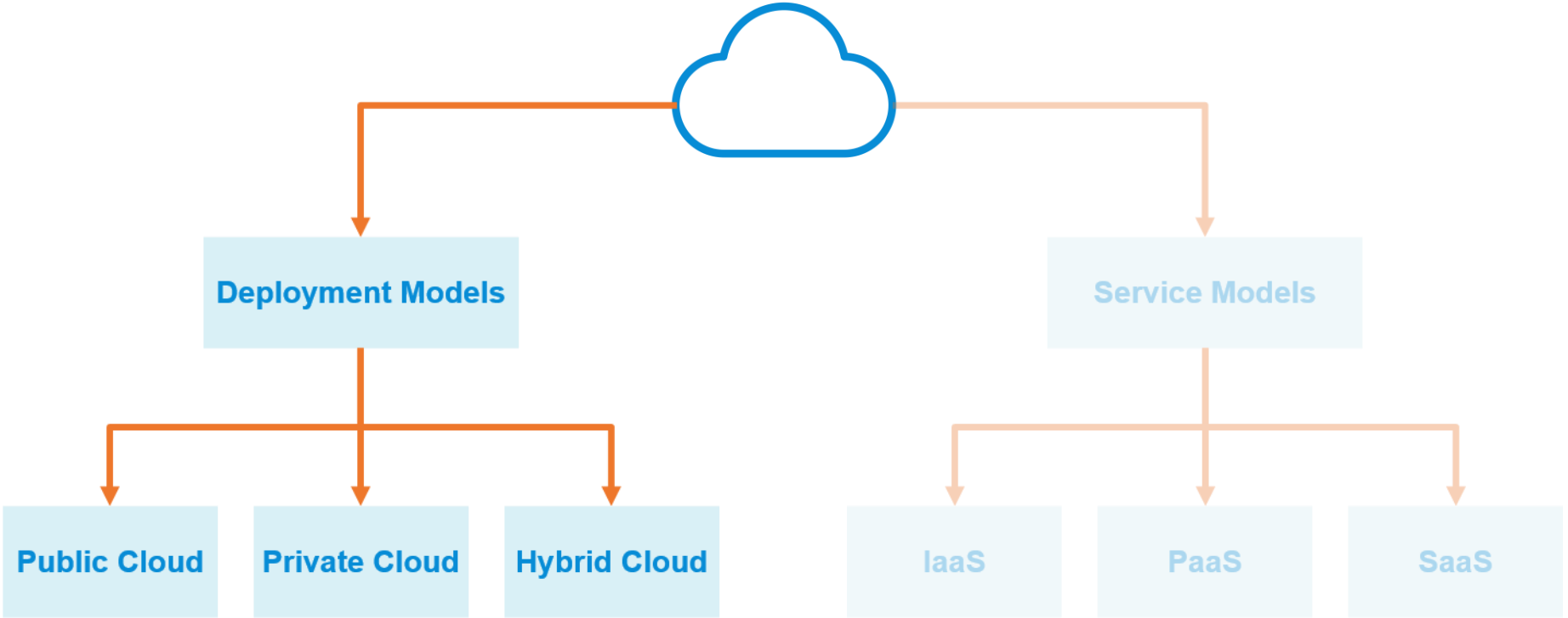
CATEGORIZATION IN CLOUD COMPUTING



CLOUD DEPLOYMENT MODELS

CLOUD DEPLOYMENT MODELS

A cloud deployment model represents a specific type of cloud environment, primarily distinguished by ownership, size and access. It defines where the servers you're using are and who manages them.



CLOUD DEPLOYMENT MODELS

Public Cloud

- Multi-tenant implementation.
- Owned and operated by service provider.
- Bound by multi-tenant data management policies.
- Self-service and automation capabilities.

Private Cloud

- Single tenant implementation.
- Owned and operated by IT organization.
- Define your own data management policies.
- Self-service and automation capabilities.

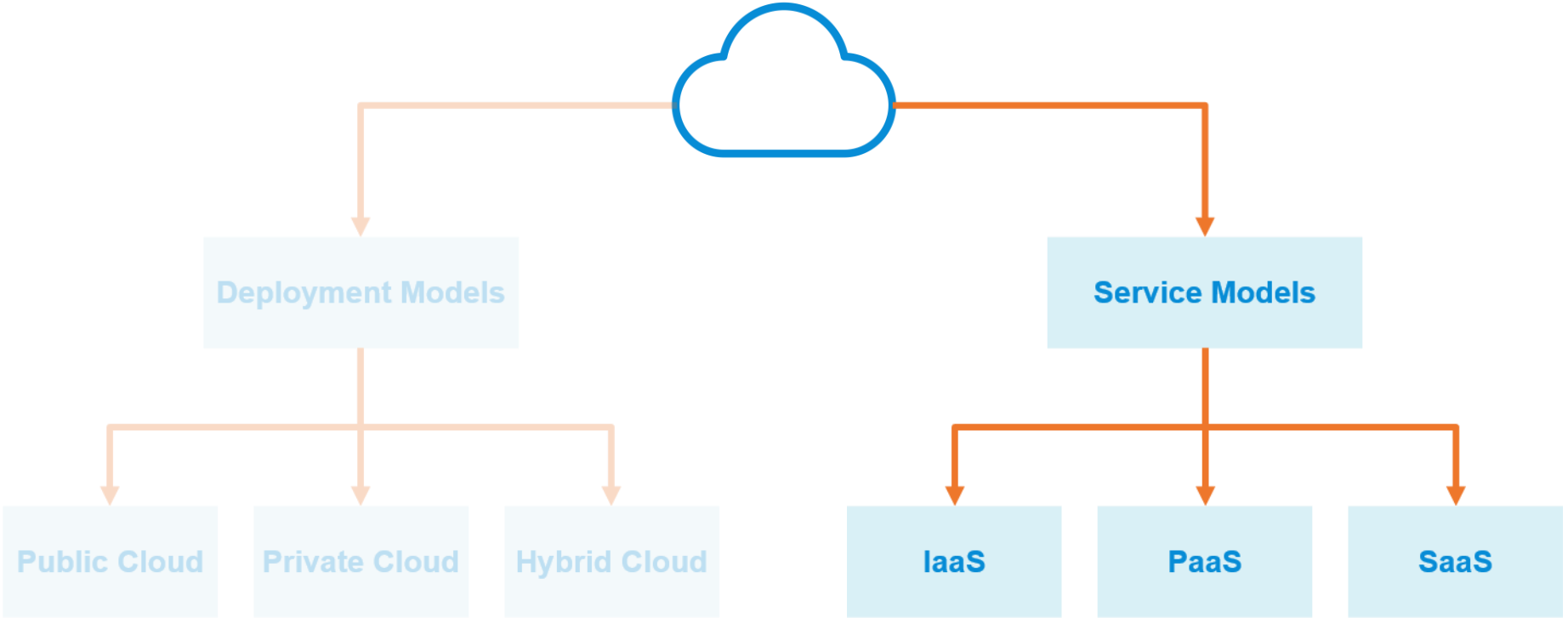
Hybrid Cloud

- Combination for private & one or more public clouds.
- Allows IT organizations to be broker of the service.

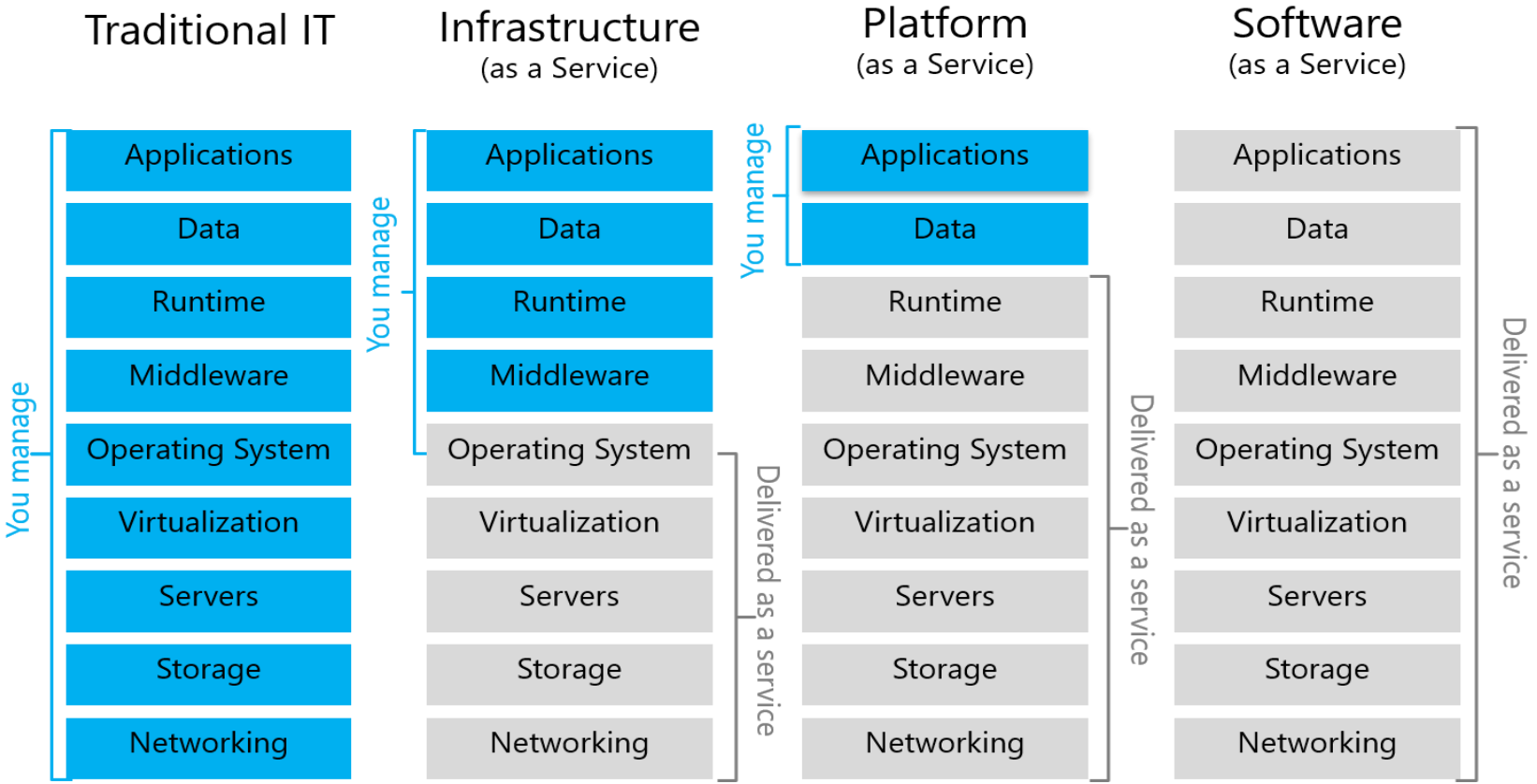
CLOUD SERVICE MODELS

CLOUD SERVICE MODELS

Cloud service models are the reference models on which Cloud Computing is based. It defines which layer of service you manage, and which layer the cloud service provider manages.



CLOUD SERVICE MODELS



CLOUD SERVICE PROVIDERS

CLOUD SERVICE PROVIDERS

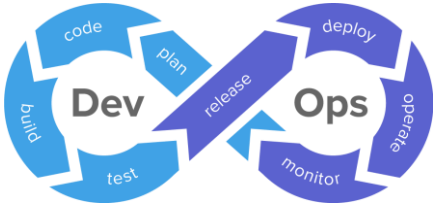
CLOUD SERVICE PROVIDERS

Figure 1. Magic Quadrant for Cloud Infrastructure and Platform Services

WHAT IS DEVOPS?

WHAT IS DEVOPS?

DEVELOPMENT + OPERATIONS =



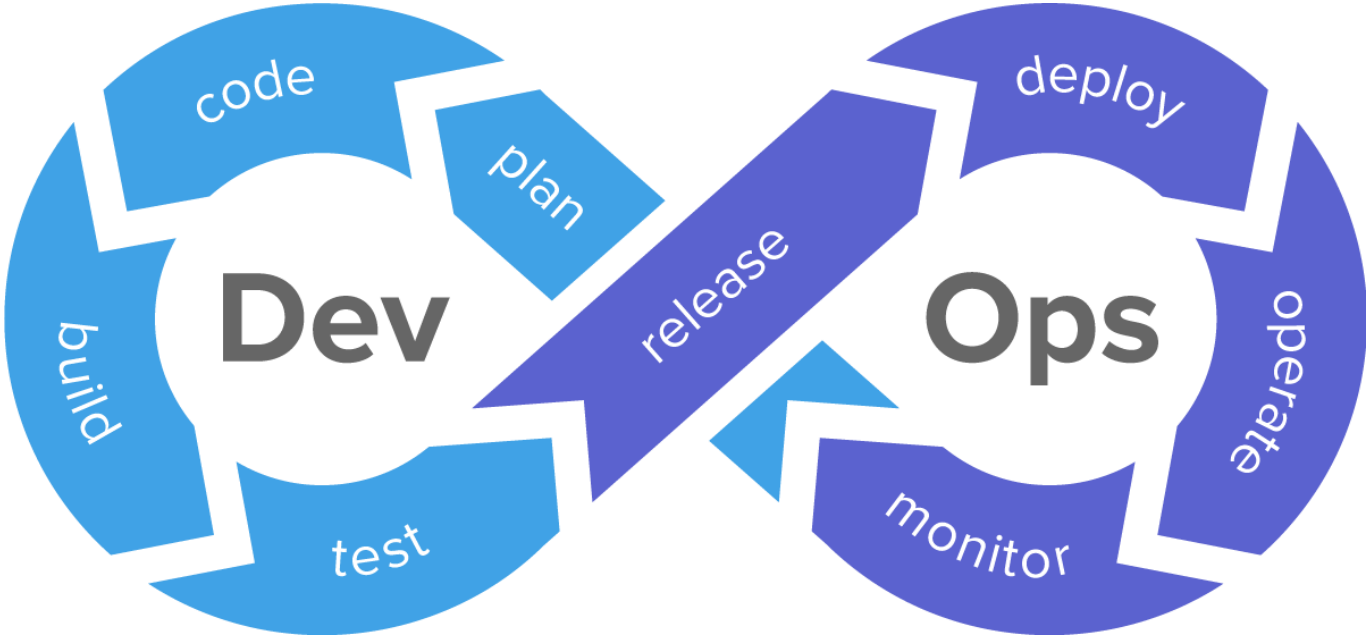
DevOps is a culture which needs to be practiced in order to do achieve organizational goals in a better and quicker way.

In Technical Terms…

DevOps is a set of practices and cultural changes supported by automation tools and lean processes that creates an automated software delivery pipeline, enabling organizations to deliver better quality services and applications faster.

WHAT IS DEVOPS?

DEVOPS LIFECYCLE



WHAT IS DEVOPS?
DEVOPS CULTURE

Collaboration

Automation Mindset

Accept Change

Knowledge Sharing

Accept Failures

NO Blame

DEVOPS PILLARS

DEVOPS PILLARS

Infrastructure as Code

We provision and maintain project environments ourselves

CI / CD

We manage, build and deployment pipelines

Automation

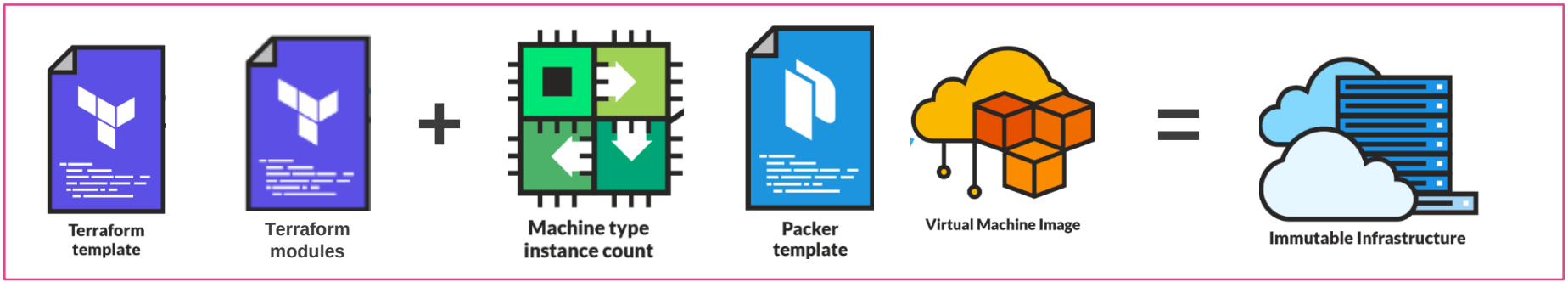
We automate everything

DEVOPS PILLARS
INFRASTRUCTURE AS CODE

DEVOPS PILLARS

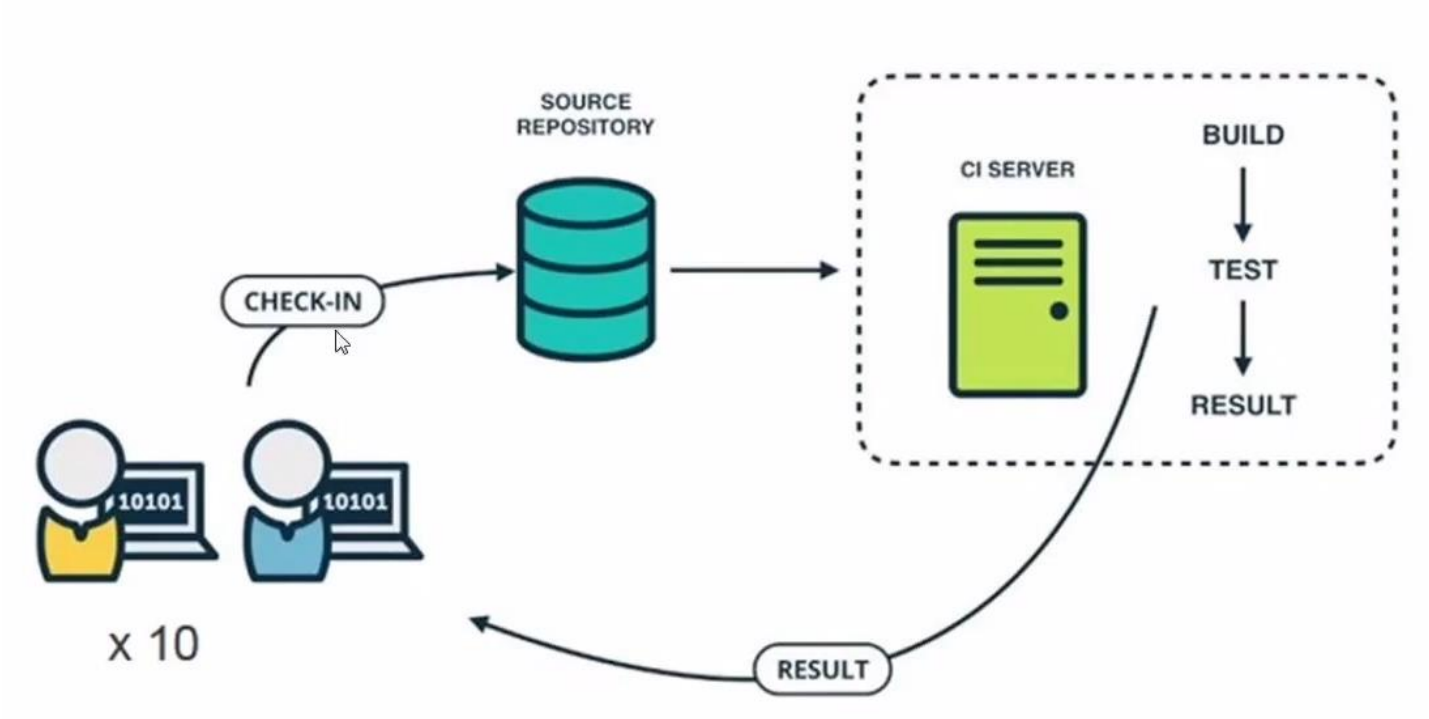
INFRASTRUCTURE AS CODE

Entire ITAP environment of applications being developed are provisioned using Terraform and Packer scripts / templates.

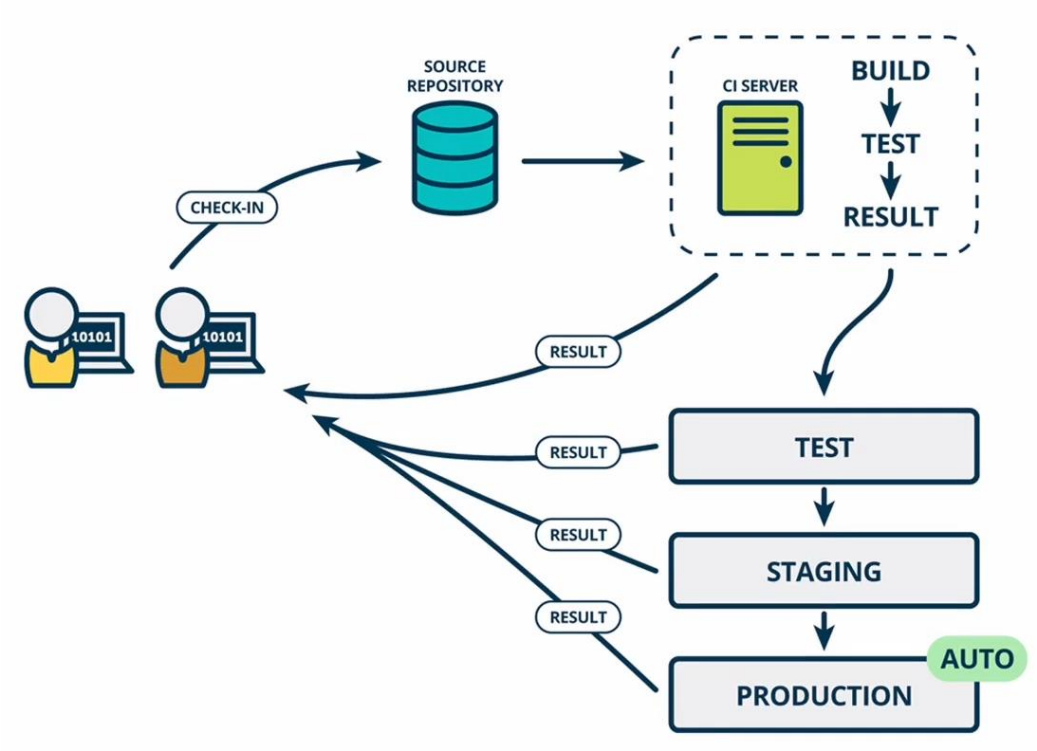


DEVOPS PILLARS
CONTINUOUS INTEGRATION / CONTINUOUS DEPLOYMENT

DEVOPS PILLARS
CONTINUOUS INTEGRATION

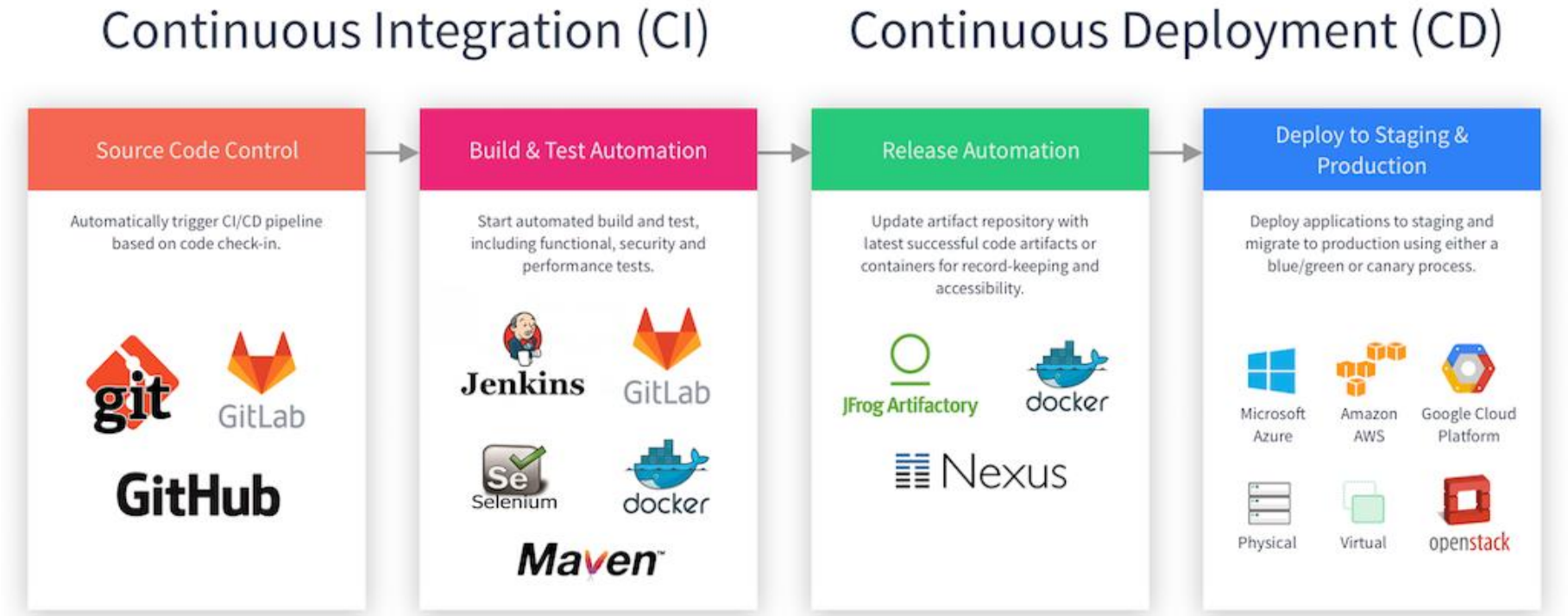


DEVOPS PILLARS
CONTINUOUS DEPLOYMENT



DEVOPS PILLARS

CONTINUOUS INTEGRATION / CONTINUOUS DEPLOYMENT



DEVOPS PILLAR

CONTINUOUS INTEGRATION / CONTINUOUS DELIVERY

Docker Image Build

Docker Stack Deploy

DEVOPS PILLARS

TEST AUTOMATION – REGRESSION TESTS

Acceptance Scenarios

Cucumber

BDD style feature files

Cucumber Jenkins Plugin

TEST AUTOMATION – PERFORMANCE TESTS

Gatling LOAD TESTING

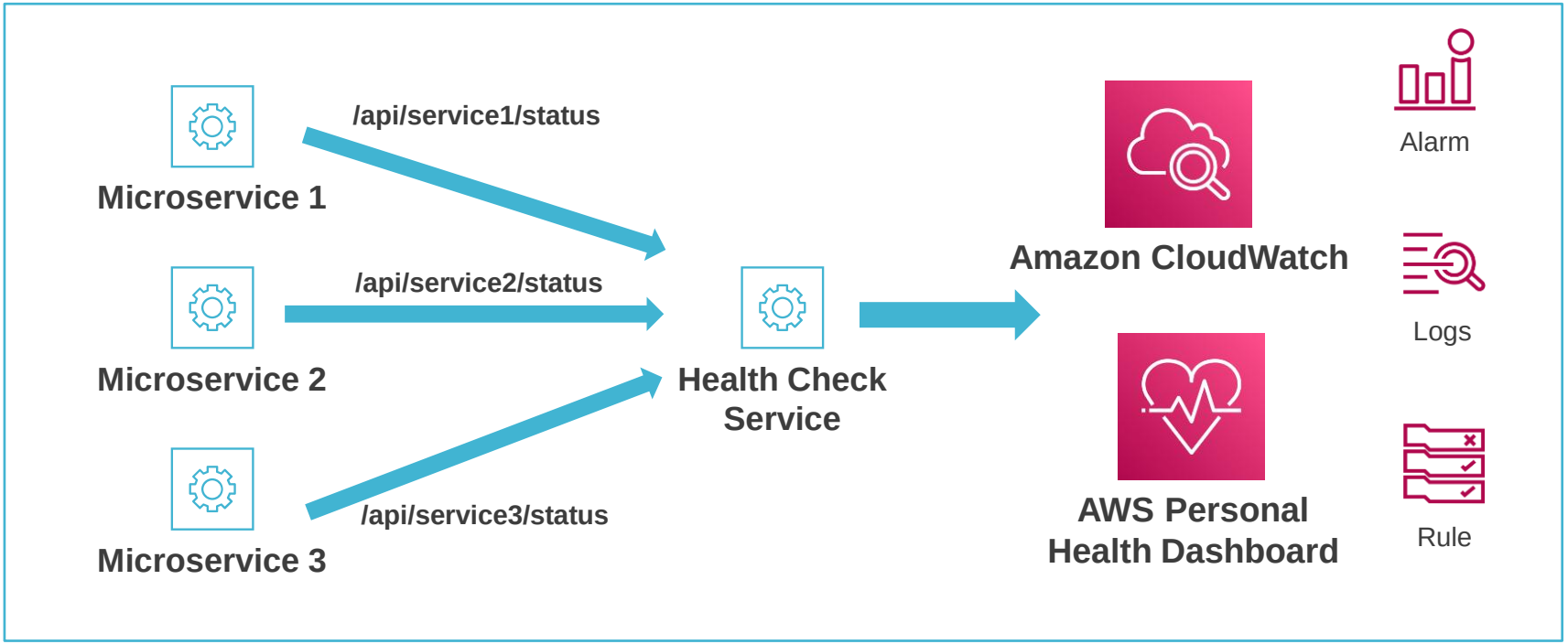
Scala based Gatling Scenarios

Gatling Jenkins Plugin

DEVOPS PILLARS
AUTOMATION

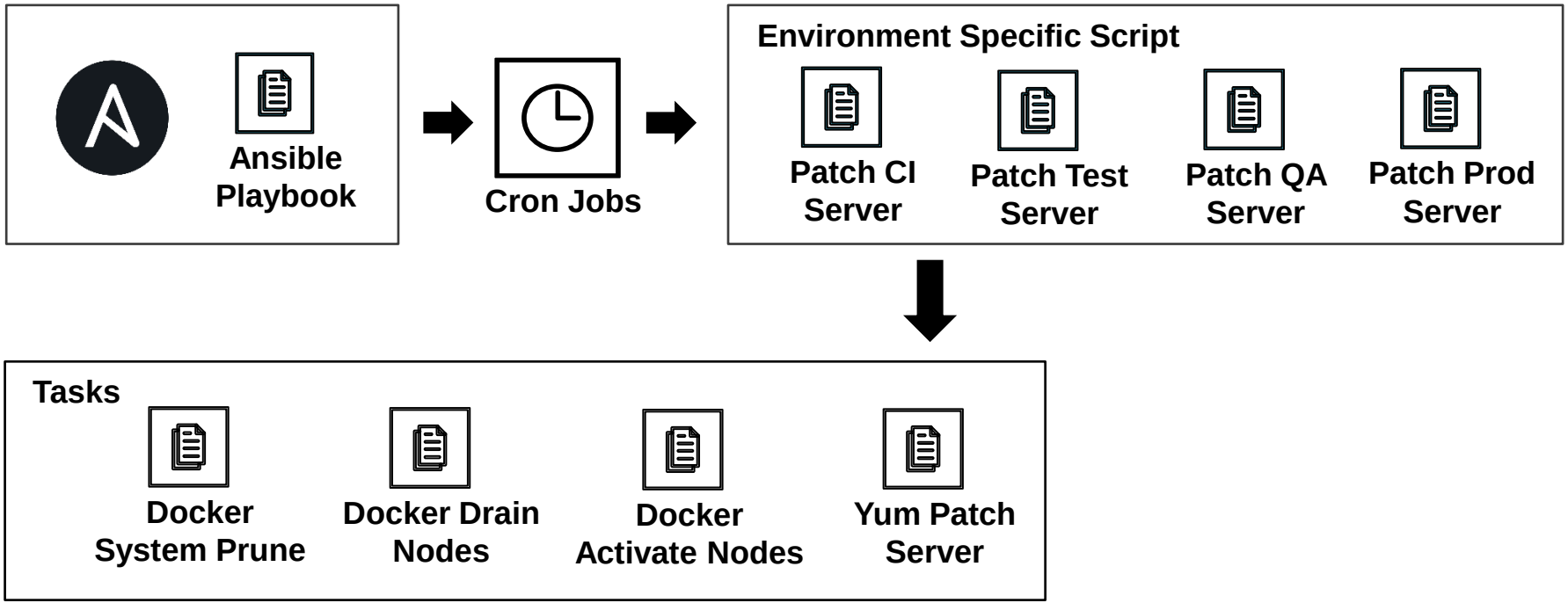
DEVOPS PILLARS

AUTOMATION – APPLICATION MONITORING



DEVOPS PILLARS

AUTOMATION – SERVER PATCHING



WAKE UP ITS ALL OVER ☺

Name: Rupesh Deshmukh
Position: Senior Technical Architect
Department: Digital Development Unit – Worldline Global Services
Phone number: +919833049266
E-mail: rupesh.deshmukh@worldline.com

DIGITAL PAYMENTS
FOR A TRUSTED WORLD

Worldline