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DevOps

Module 1: Introduction to DevOps

Course Topics

Module 1

Introduction to DevOps and its Importance

Module 2

Chef

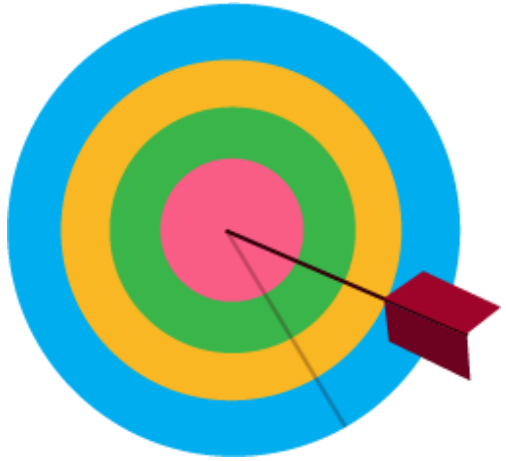
Module 3

DevOps Ecosystem

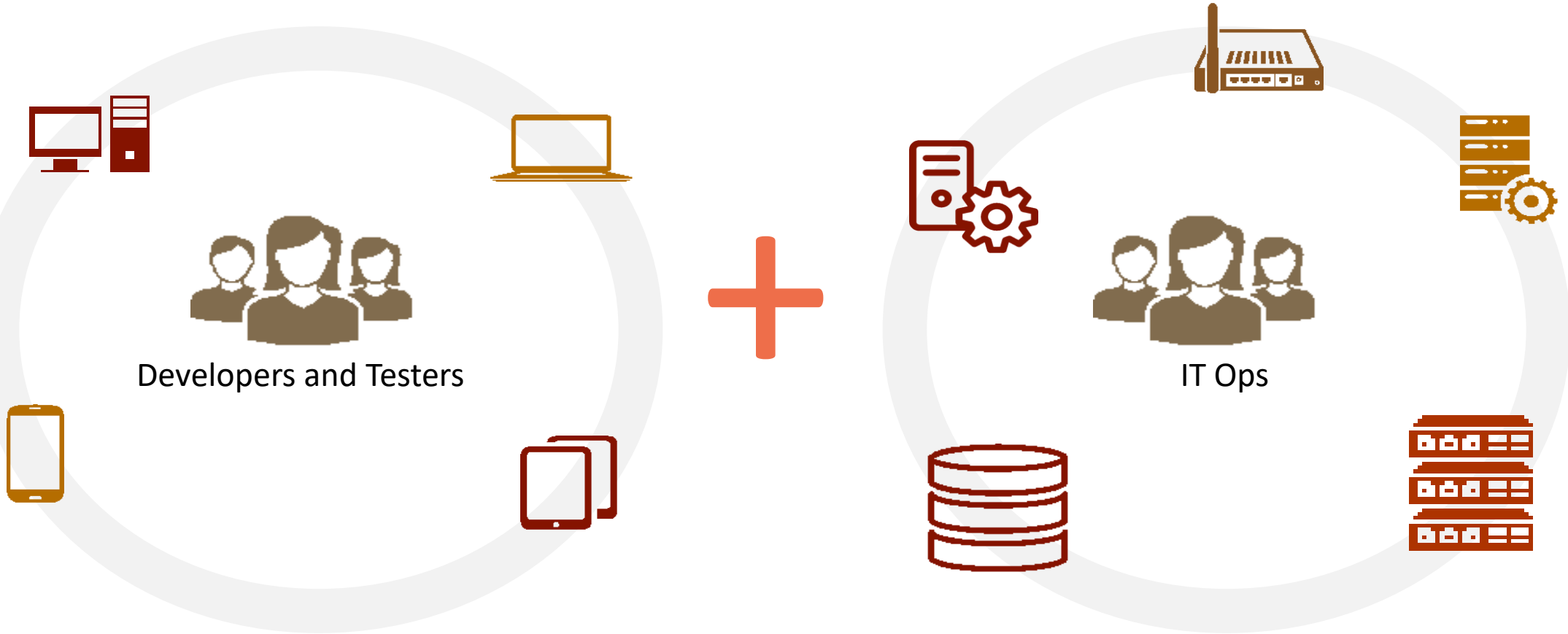
Session Objectives

This session will help you to understand:

- What is Devops?
- DevOps Adoption Process
- DevOps VS Agile
- DevOps Building blocks
- DevOps Case Study



Introduction to DevOps

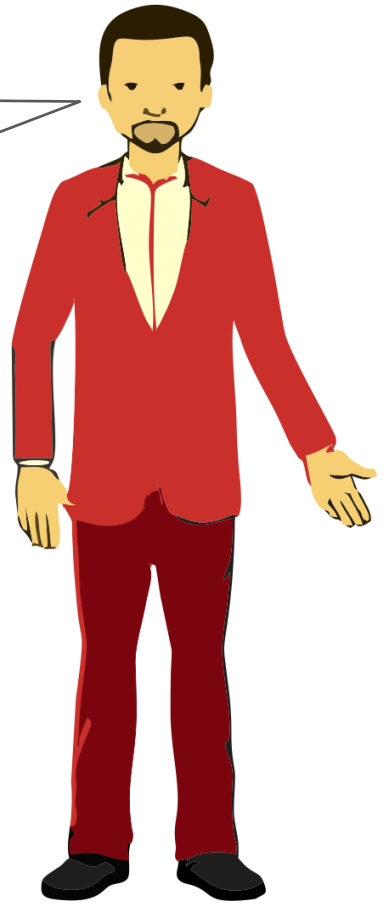


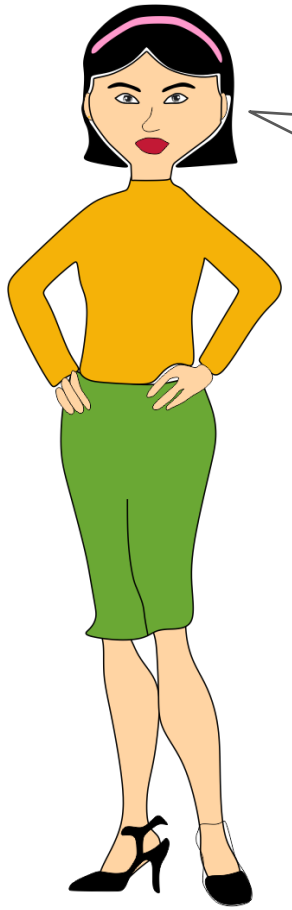
DevOps is the bridge between the development and operations excellence

It is an extension of the lean and Agile principles, which streamlines and helps rapid deployments

Meet Mark and Linda

Hi, I am Mark and I work in the Development team



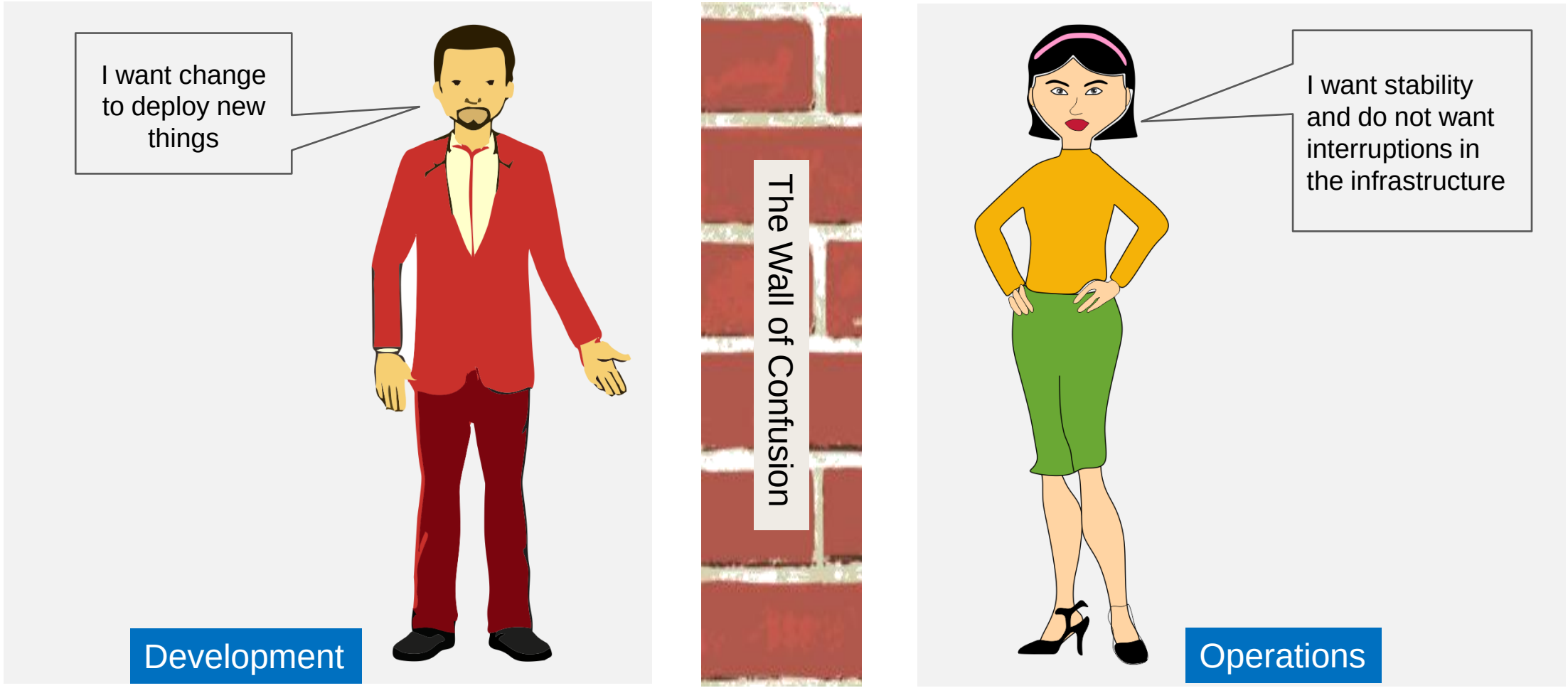


Hi, I am Linda and I work in the Operations team

Mark and Linda, will be your companion for the entire course

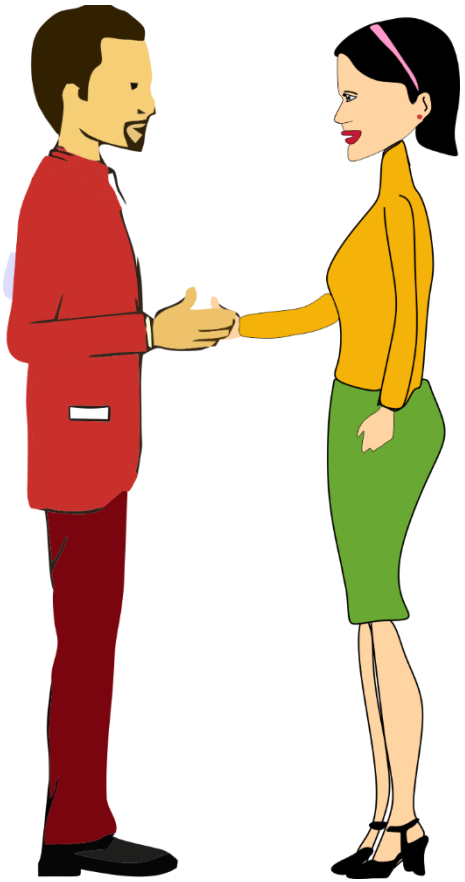
The Wall of Confusion

Development and Operations in Conflict!!



DevOps Adoption

There are two opposite camps: Developers and Operations



They have to work together and make the transition

Important thing is the mindset!!

Senior management needs to push for the integration of the various silos like developments, QA, testers and Operations into one role

Things you needs for DevOps adoption:

- Mindset
- Right Tools
- Roadmap for the change

DevOps Adoption

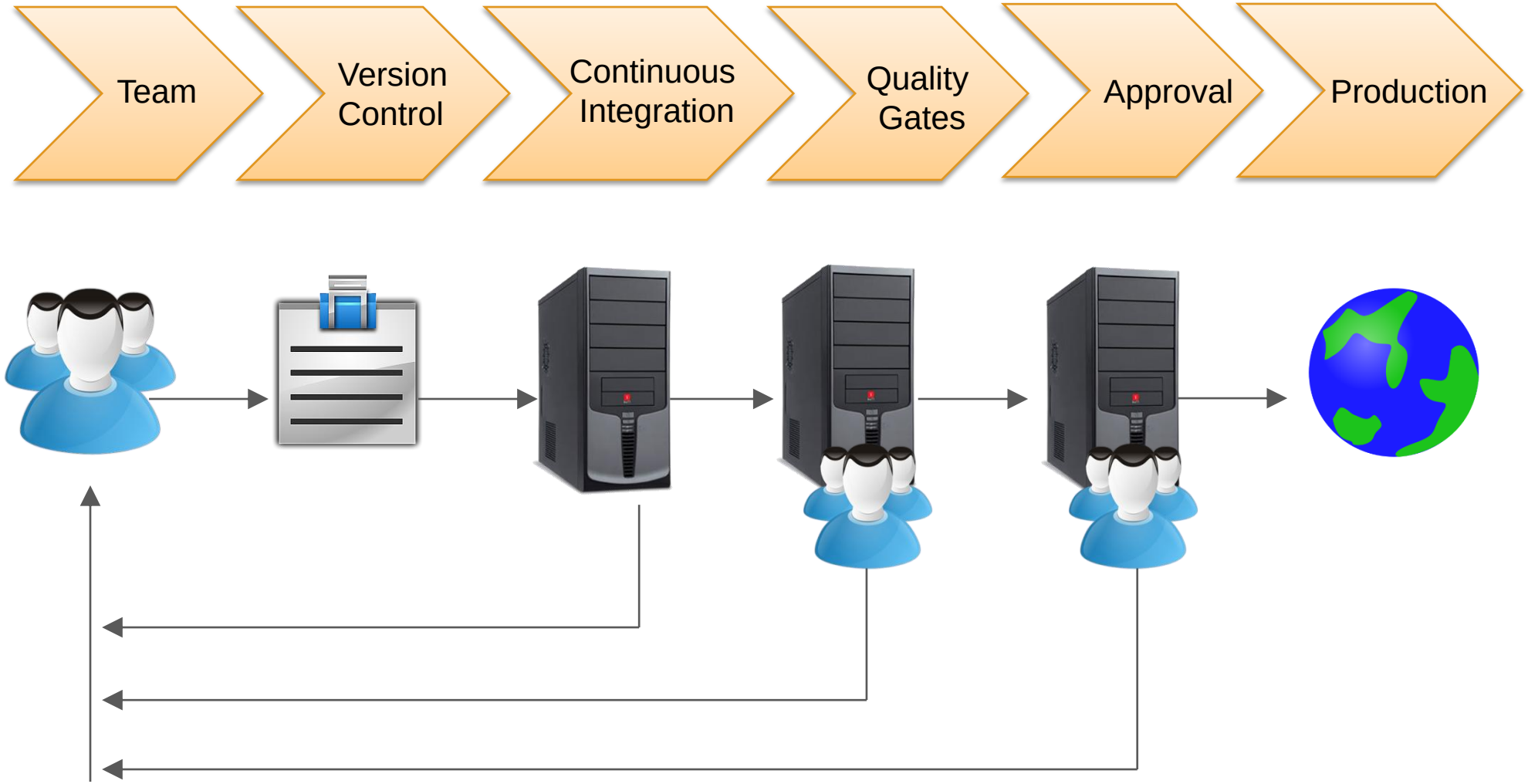
In organizations, many different settings may be in place like different tools for developers and operation teams, different working models and objectives

"DevOps defines the process which streamlines software development with feedback from production, thus improving the product life cycle"

DevOps Aspects and Inspirations:

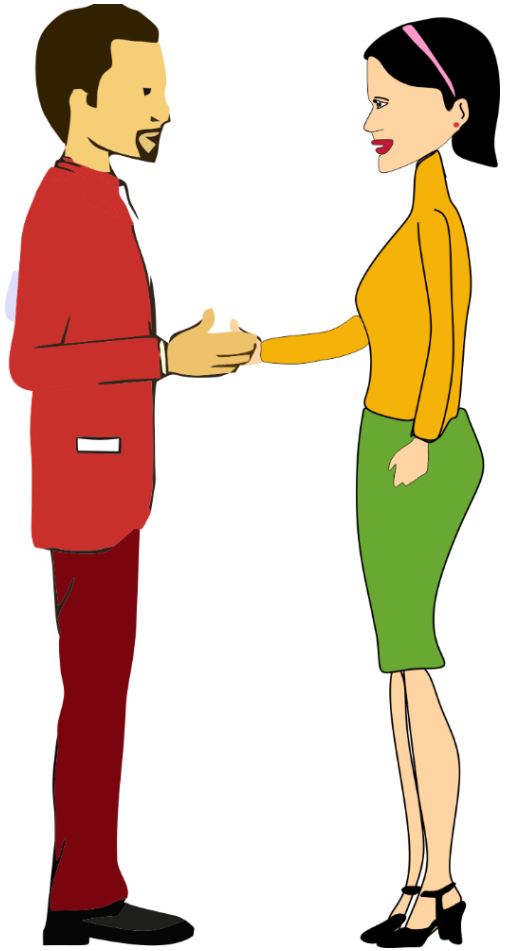
- Culture: Get rid of cultural barriers
- Automation: Reduce the mundane tasks and automate
- Measurements: There must be well defined metrics with incentives
- Sharing: There must be a culture to share ideas, tools

DevOps Adoption Process



Rule for DevOps Success

Have the “We” culture, rather than “They” culture



Do not play the blame game, take ownership and share resources

DevOps is to improve communication between developers and operations to solve critical problems like fear of change and risky deployments

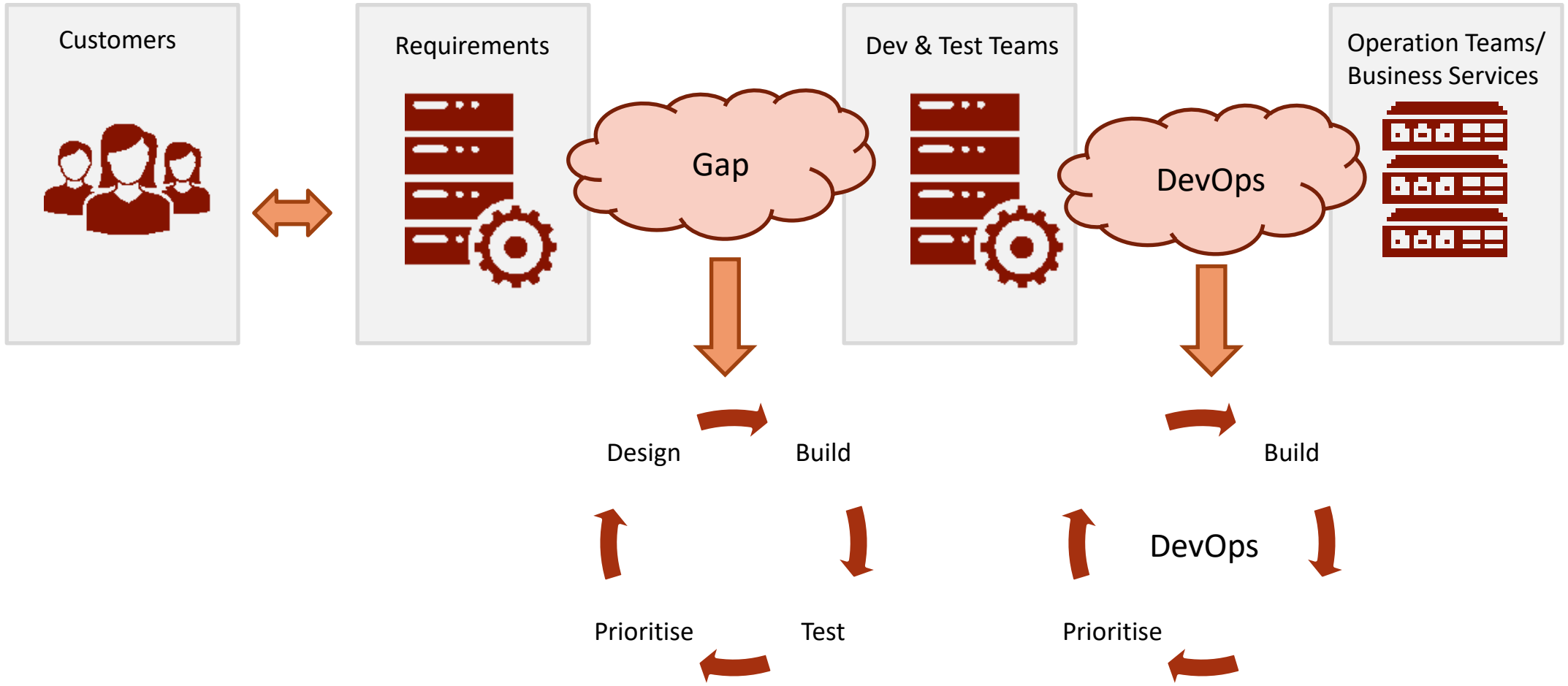
Challenges In Traditional Process

In traditional projects, software is specified and then programmed in stages and not in iterations. Very often the specifications change, bugs filed and it becomes difficult to align with the original project outline

For software, it’s a long journey to the production

With Agile, programmers and testers became Developers and with DevOps, developers and operations became DevOps

Agile VS DevOps



DevOps Building Blocks

DevOps is about constant feedback and reducing the risk of release through improvement in flow of features from inception to their availability

This can be achieved by reducing the batch size of releases. Instead of deploying ten features every 3 months, better deploy 1 every few weeks

This will introduce new feature sooner in the market and also ease out the deployment in production with lesser chance of critical issues

DevOps Skills

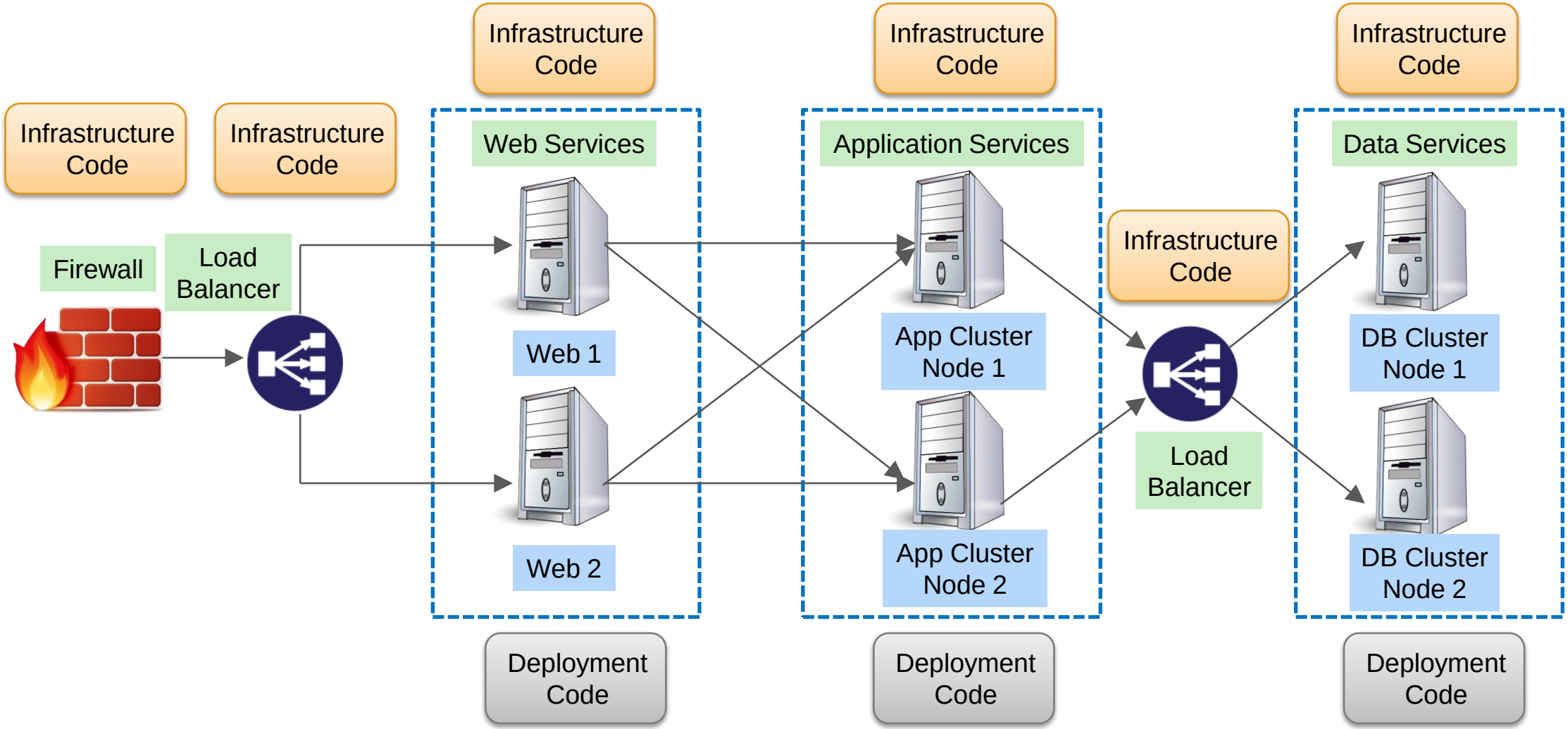
DevOps is a bridge between the Operations and Development. The DevOps team needs the knowledge about both the environments

The team should understand the complexities of Enterprise setups including server farms, network devices and layouts, storage and BCP plans

It is also about development life cycle of a product, code reviews, deployment complexities and release changes

Scale of Infrastructure

"Understand the scale at which things operate"



Case Study – Scenario 1

StackOverflow: With just 25 Servers, 4 million users, 40 million answers and 600 million page views

“That is high availability, load balancing, caching, databases” !!

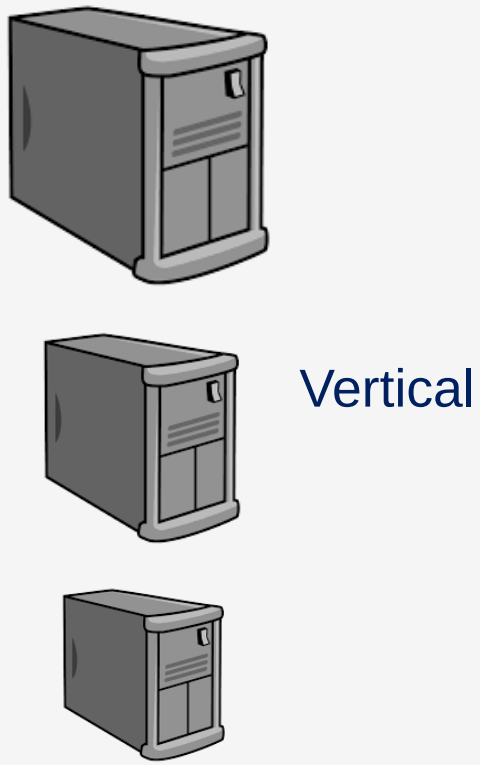
Case Study – Scenario 2

Instagram: 20 million users, 250 million photo
“Managed by just 3 people”

- Keep it simple and don't re-invent the wheel
- Go for stable, well known products
- 120 Ubuntu Servers on AWS
- AWS CDN

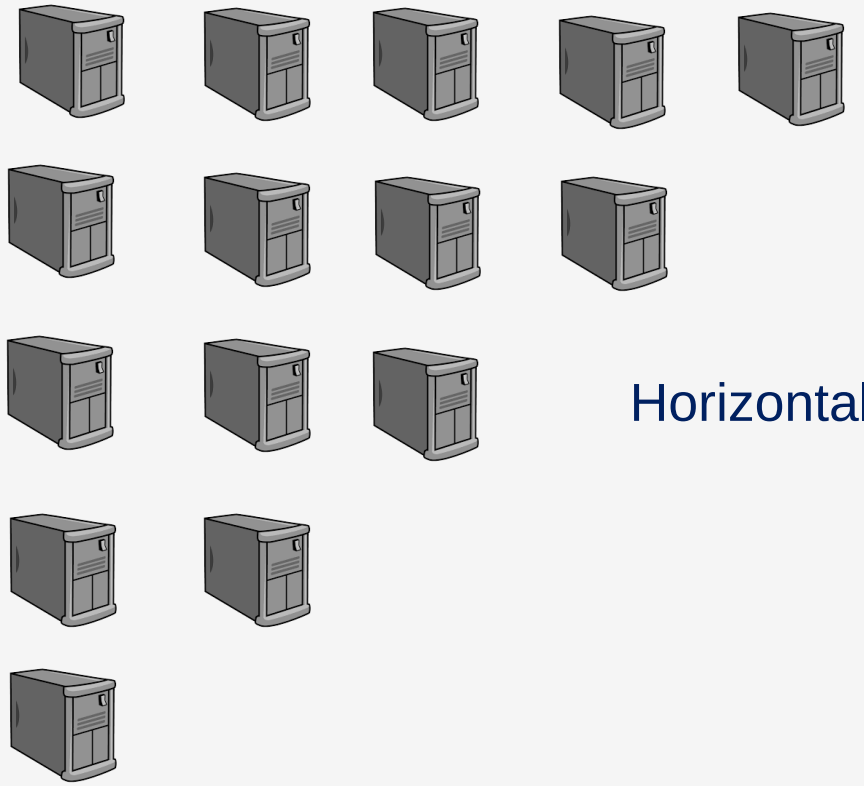
Scalability

Scalability is not just about adding resources to a single server, it can be as simple as adding more servers



Vertical

Vs

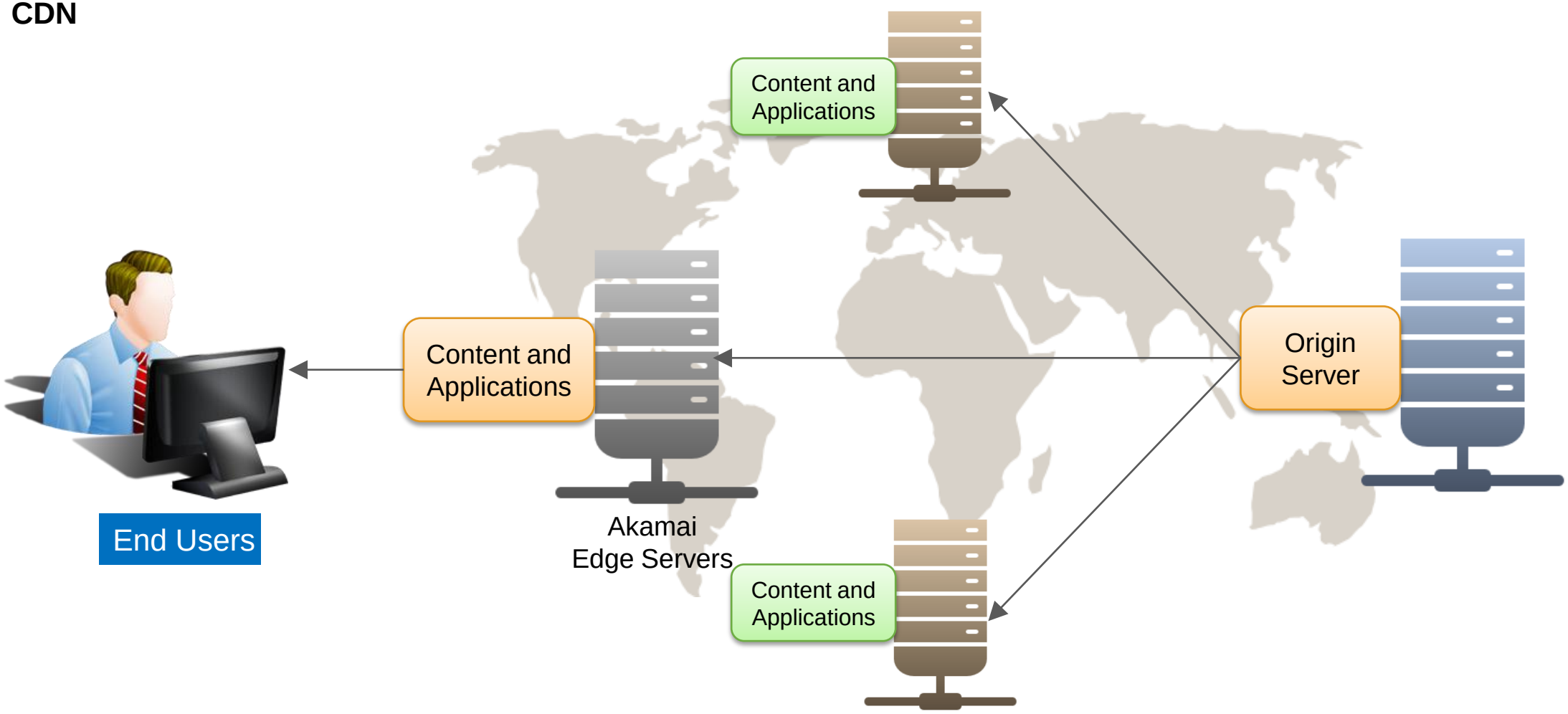


Horizontal

Scalability

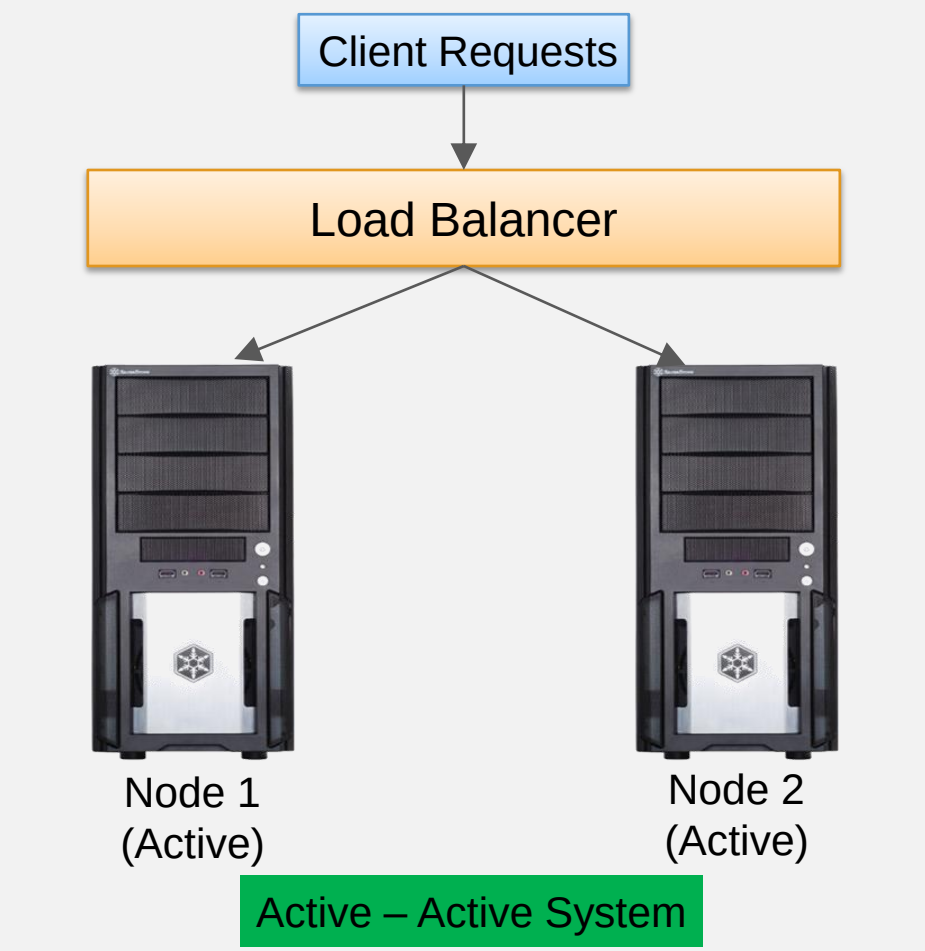
Scalability is also about off loading the contents from servers to some edge locations. Example: Akamai

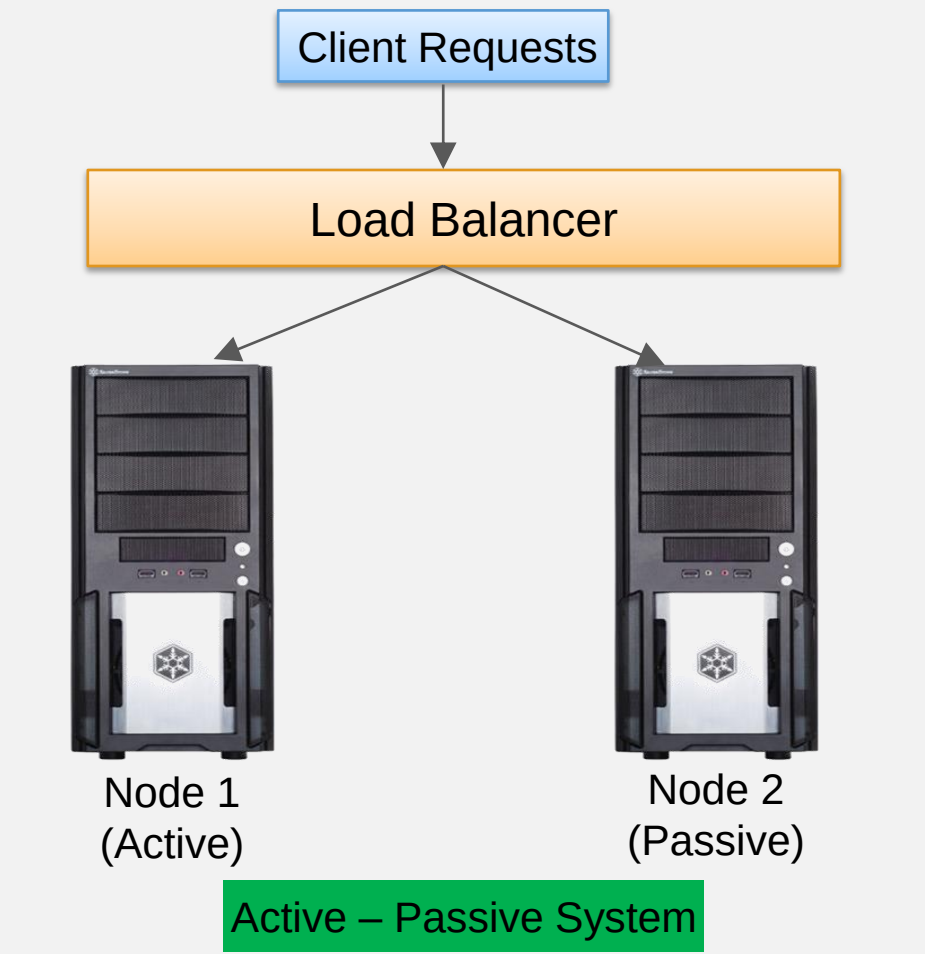
CDN



Availability

Availability is about keeping the lights on. It is more important than scalability, as it is better to have degraded performance than a complete outage





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