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Lifecycle and Architecture

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Objectives

In this module you will:

1. Learn the basics of Apps architectures, especially referred to O365 architectures.
2. Learn the basics of delivering third party applications.

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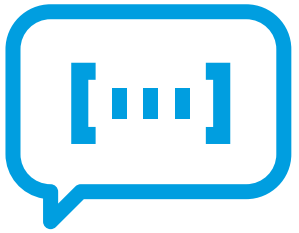

Apps Inside Out

01

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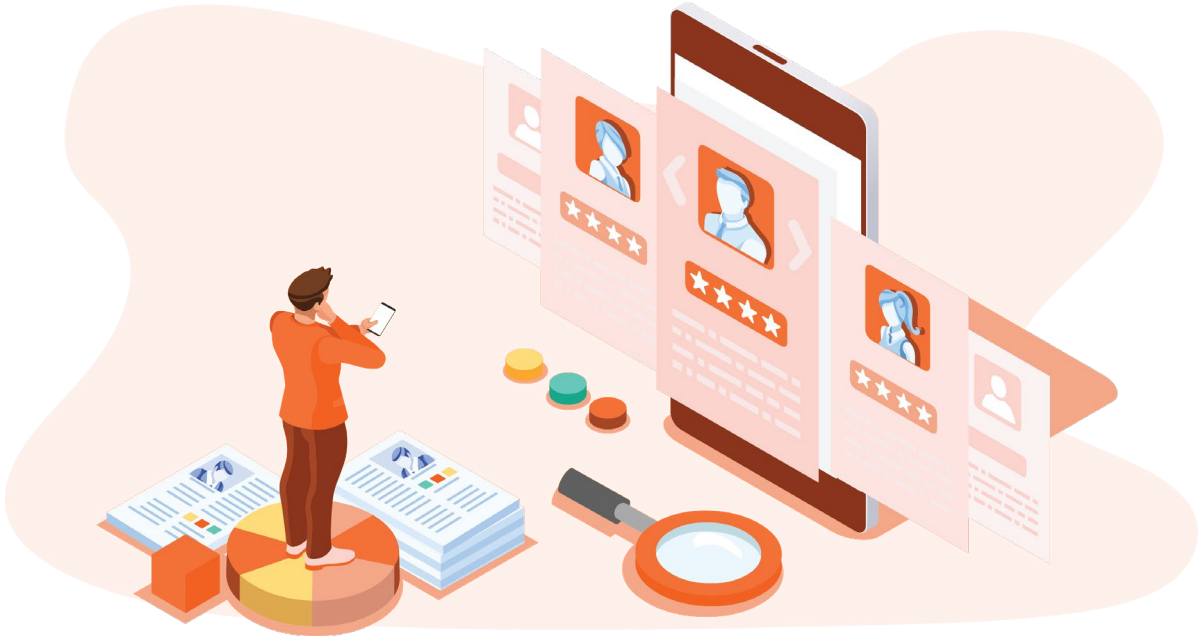
Application delivery



Application delivery refers to the **combination of services** that companies must perform **to provide functionality for the end-user or client**.

Application delivery **uses a variety of platforms and technologies** to create applications that are **robust, available, and scalable**.

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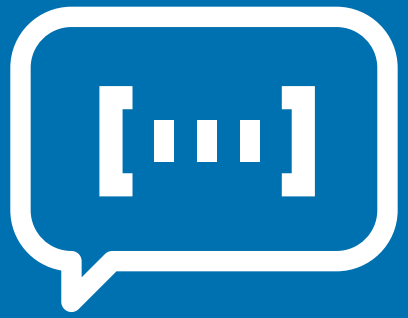

DISCUSSION

How is an app delivered?

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OBJECTIVE

Get insights about applications delivery process

INSTRUCTIONS

1. **Meet** with your partner and try to answer this **questions**:
   - **How an application is created?**
   - **How an application is delivered to final users?**
   - **What are the factors the process depends on?**

2. Use post-its to **gather** the ideas → select the **3 most relevants**.
3. **Prepare** to share your insights with the rest of the class.

5 min

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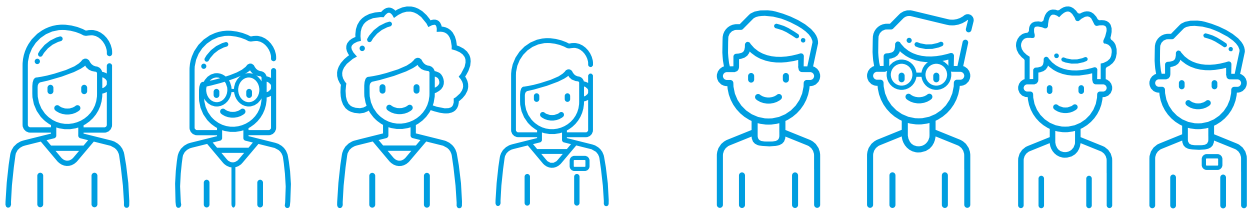
OBJECTIVE

Share your insights!

INSTRUCTIONS

1. **Share** your insights with the rest of the class.
2. Generate **common conclussions**.



5 min

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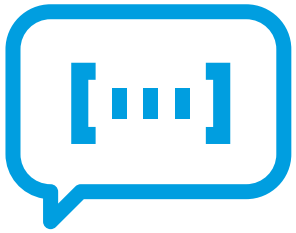

Application lifecycle

02

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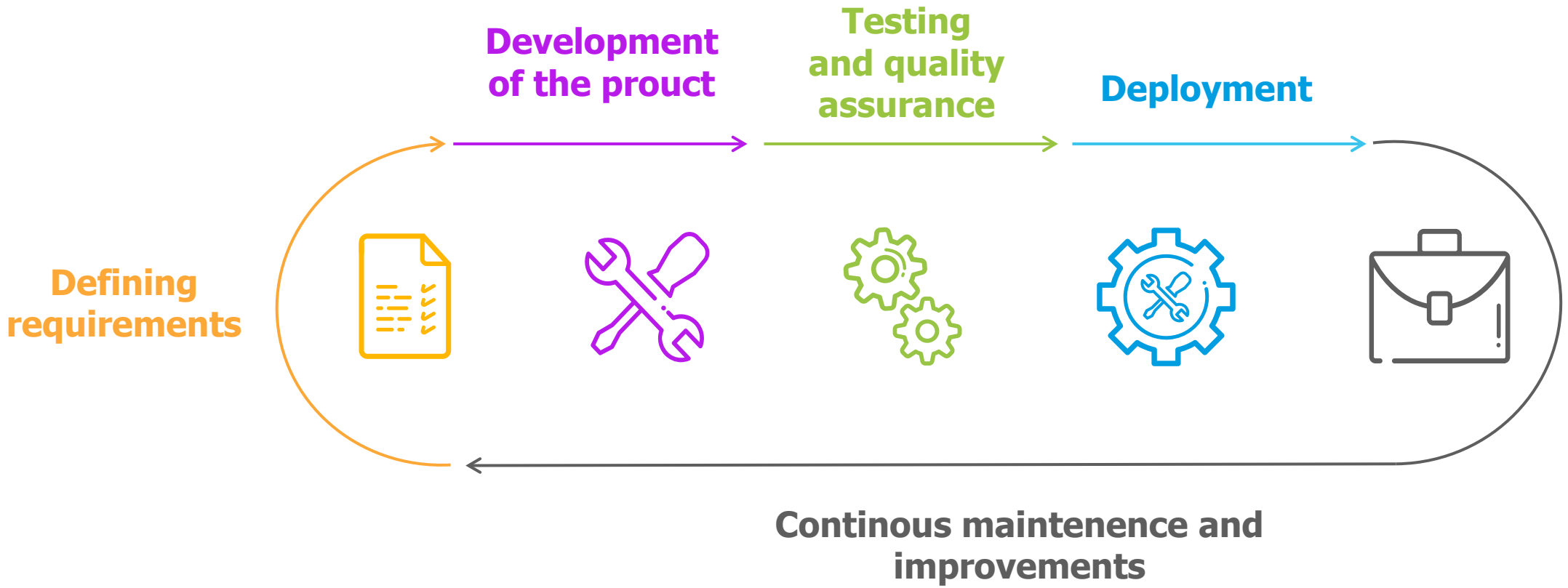
Software Development Lifecycle (SDLC)



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Software Development Lifecycle (SDLC) - Benefits

1. A **common vocabulary** for each step.
2. Defined **communication channels** between development teams and stakeholders.
3. **Clear roles and responsibilities** among developers, designers, business analysts, and project managers.
4. **Clearly-defined inputs and outputs** from one step to the next.
5. A **deterministic "definition of done"** that can be used to confirm whether a step is truly complete.

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Application Lifecycle Management

Application Lifecycle Management

https://www.youtube.com/watch?v=sWF-PuAlkI0

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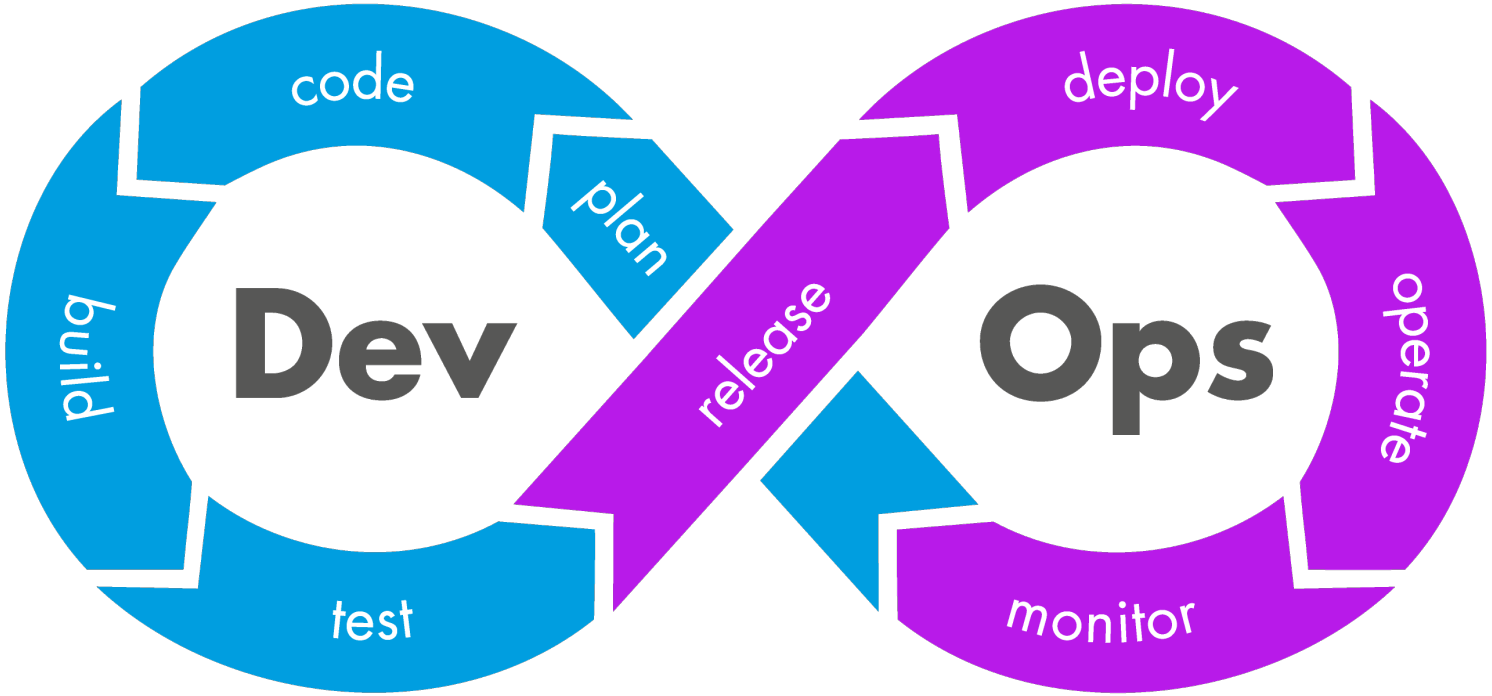
code
plan
build
Dev
test
release
deploy
operate
Ops
monitor
THIS IS THE WAY

The DevOps Way



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OBJECTIVE

How do traditional development methods compare to DevOps?

INSTRUCTIONS

1. Read next article: https://www.clouddirect.net/how-does-devops-compare-to-traditional-development-methods/
2. Complete next panel:

10min

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	How efficient are the development cycles?	How do they manage scheduling?	What's the big deal?	How easy is it to turn data into actionable improvements?	What type of culture do they encourage?	What metrics do they use to measure success?	What do they define as a completed task?
Who wins?							
Why?							

15 min

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The DevOps Way

Life Cycle

- Push code
- Fetch Changes
- Run Unit Tests
- Build Artifacts
- Store Artifacts
- Provision environment
- Deploy your Build
- Run Load & Functional Tests
- Dev -> QA -> Staging -> Production

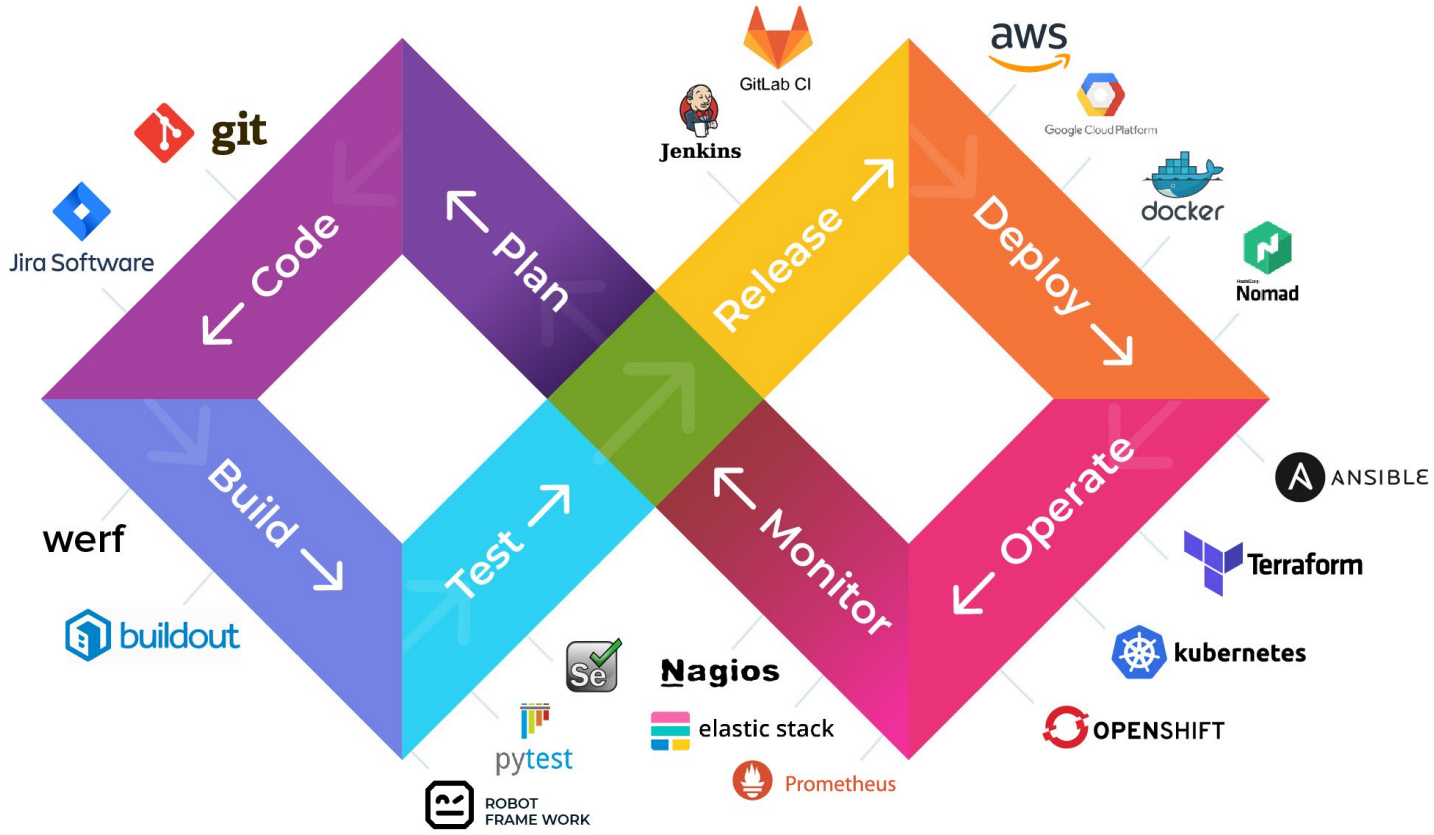

Image from quintagroup, available on https://quintagroup.com/services/devops/devops

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The DevOps Way

1. **DevOps** is the **culture** and also the implementation of **automation tools**.
2. Agile model churns out **code changes incrementally** and **frequently**.
3. DevOps helps in creating **communication, collaboration and integration** between Dev and Ops and culture, practices and tools level.
4. DevOps Engineer must understand **DevOps lifecycle** and implement **right tool of automation** at right place.
5. Learning **automation at every level** in the lifecycle is highly important .
6. You should understand **Infrastructure, Development & Automation**.

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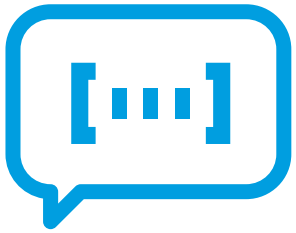

Application delivery

03

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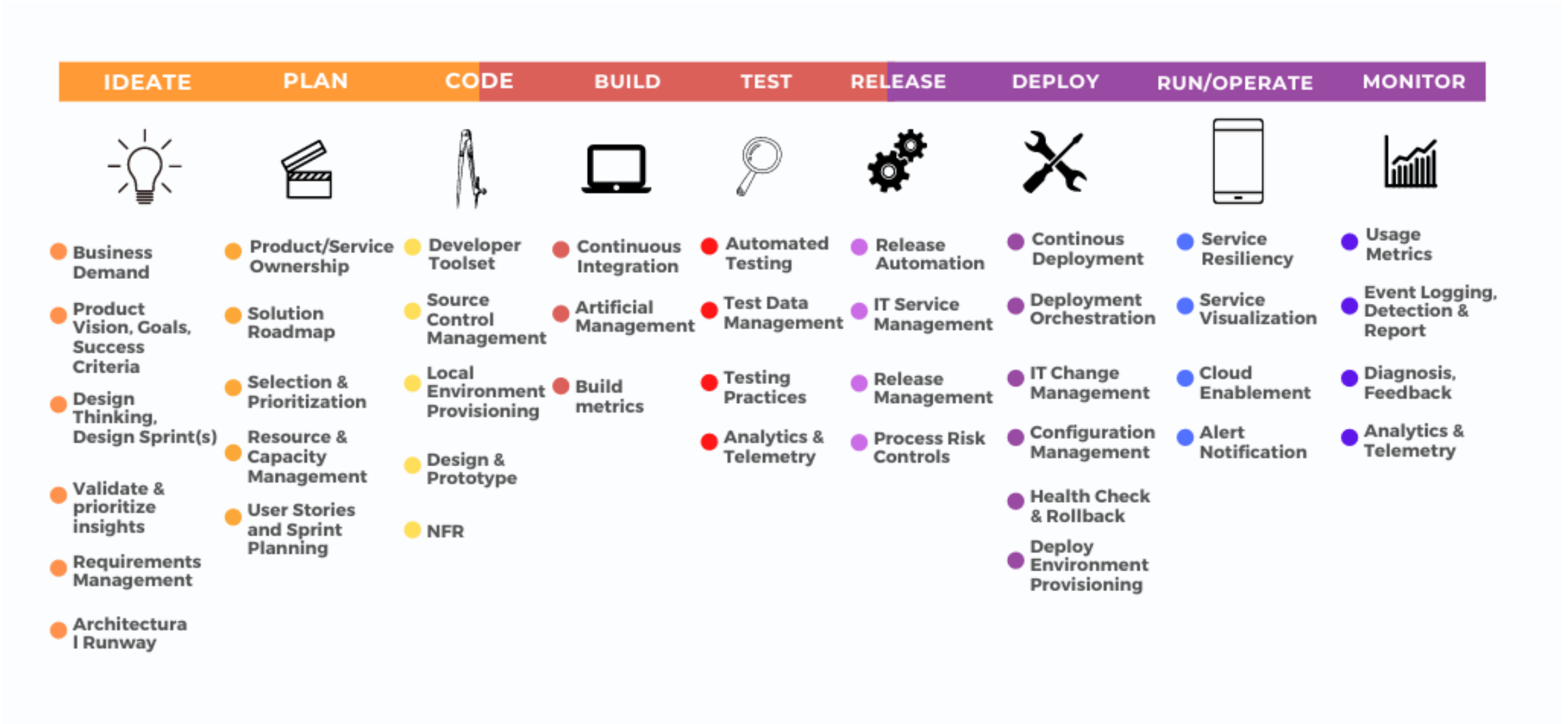
Components of Value Delivery Chain



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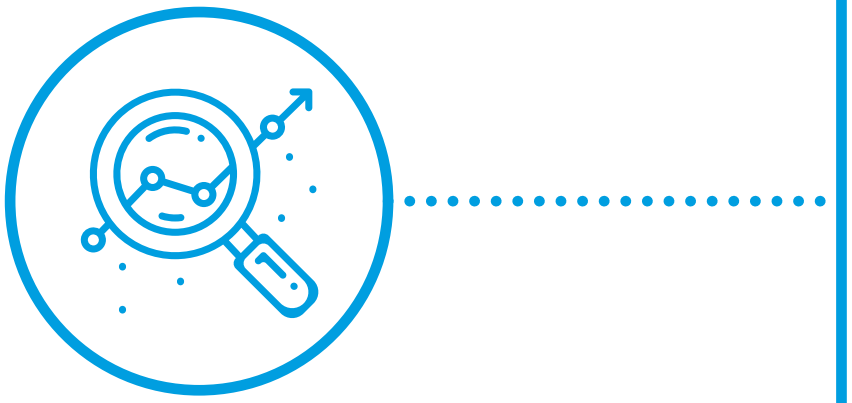
Components of Value Delivery Chain



1. **The purpose of Delivery is to actually deliver the result to the end user.**
2. **Deployments** need to be **automated** as well to increase their speed and quality.
3. Must be **straightforward and repeatable** process.
4. **Infrastructure changes** are considered **part of the delivery** process.
5. After deployed, **measurements** are executed in the live environment
    - to proactively monitor the application performance, detect issues as early as possible, or be fed back to the Product Owners to better adapt the product to the needs of the users.

By integrating significant parts of the development process and by creating small cross-functional teams, most organizations today are better capable of delivering business value much faster.

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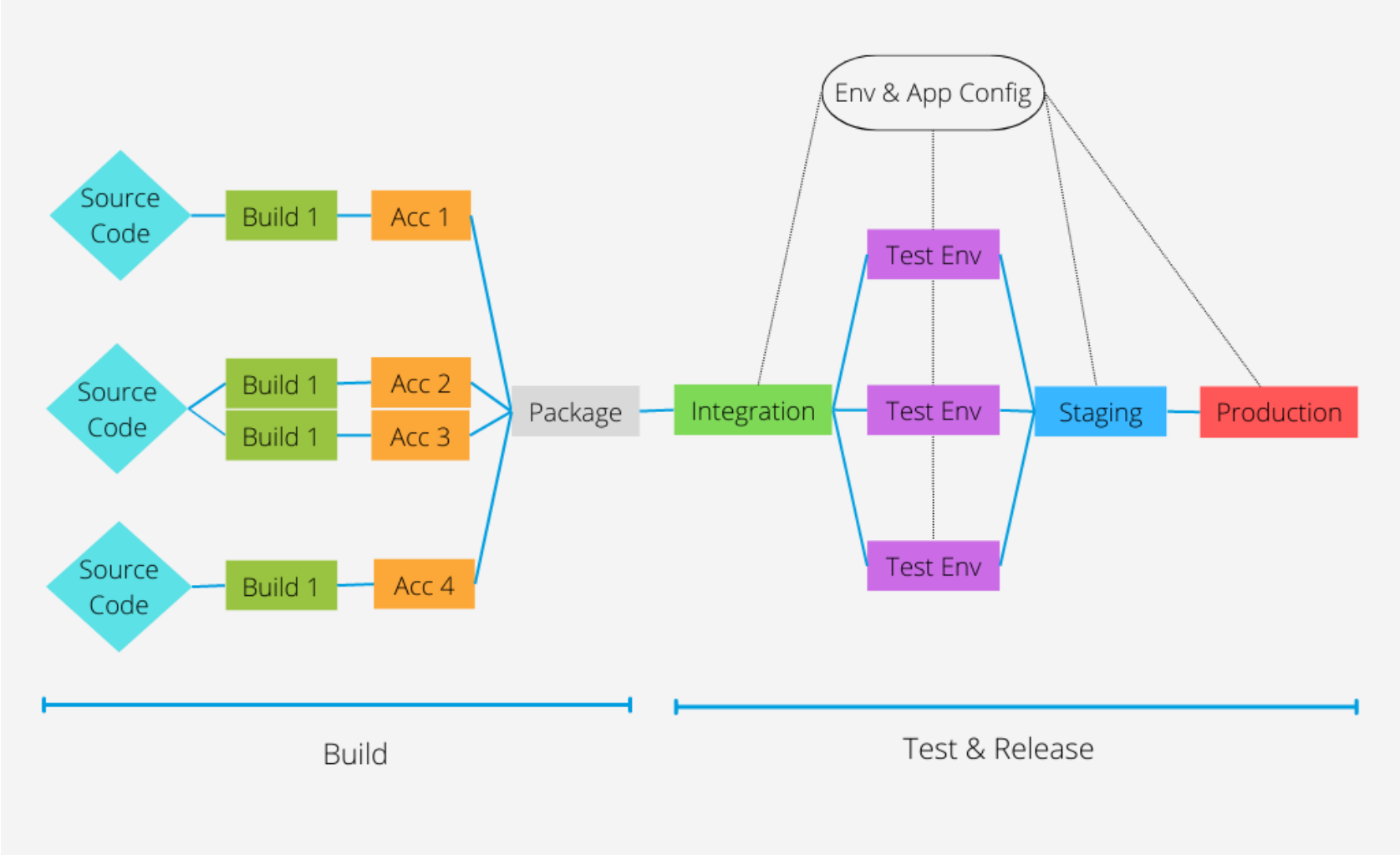
PIPELINES
PIPELINES
EVERYWHERE

Software Delivery Pipelines



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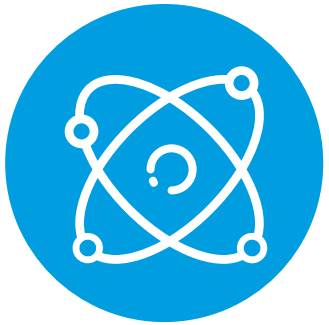
5 Traits of a Good Delivery Pipeline

1. Builds Quality into the Product.

2. Provide Quick and Effective Feedback.

3. Requires Minimal Manual Interaction.

5. Delivers (almost) Any Version Any Time.



4. Uses the Same Process and Binaries.

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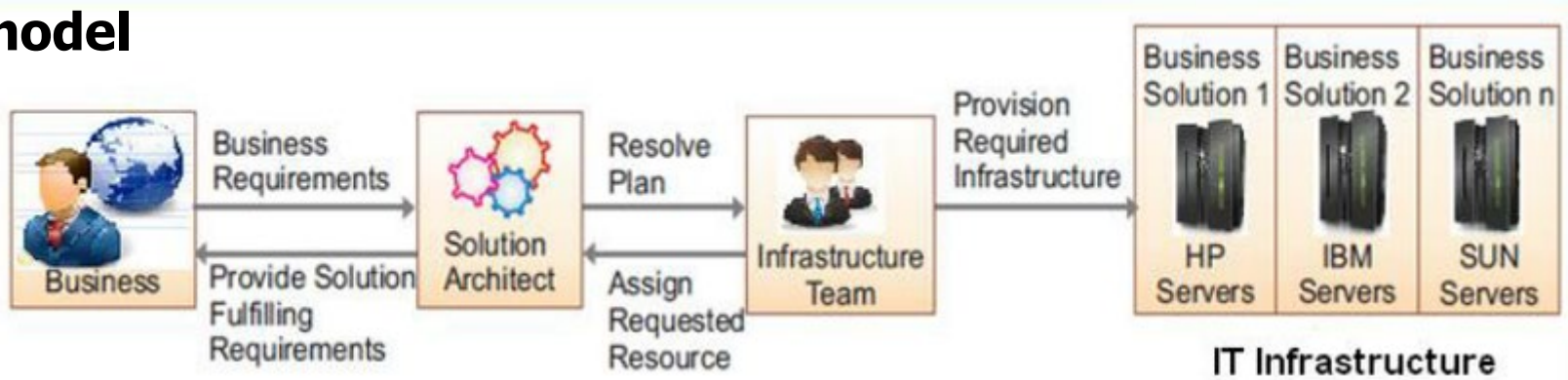
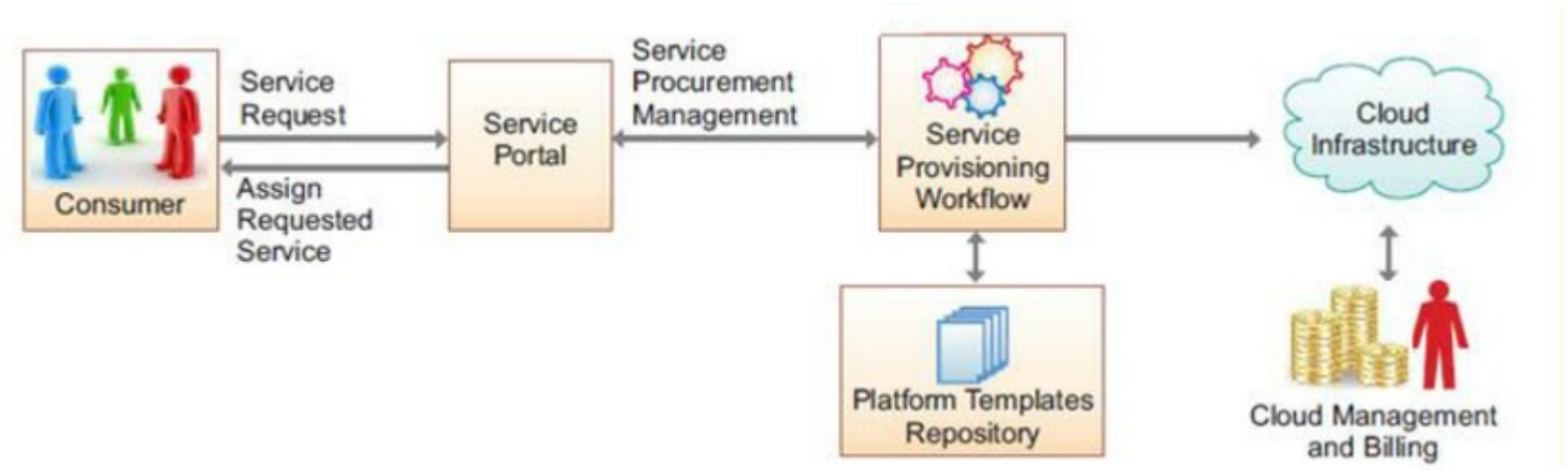
Infrastructure provisioning

Traditional model



Cloud model



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Environment provisioning is a key part of DevOps

Environment provisioning is a key part of a continuous delivery process.

The idea is simple: **we should not only build, test and deploy application code, but also the underlying application environment.**

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OBJECTIVE

Think about this…

INSTRUCTIONS

1. What is included in infrastructure?
2. Gather the ideas...

5min

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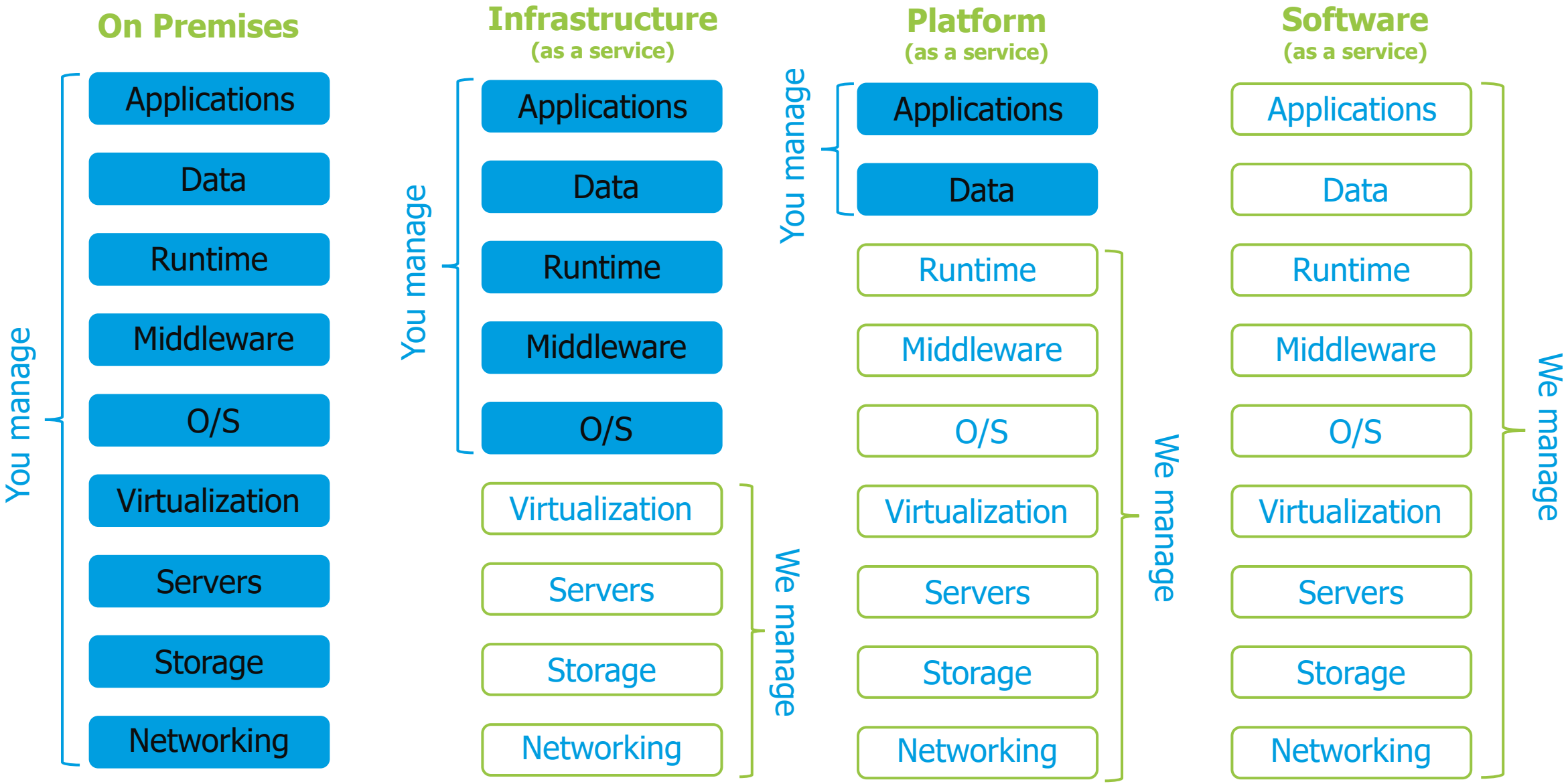
“as-a-Service”, Explained



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OBJECTIVE

Find “as-a-service” examples

INSTRUCTIONS

1. Go to the internet and find 2 examples for each “as-a-service”
2. Explain your examples to the class: Why do you consider it is that “as-a-service”?

5min

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Choose the right model for you…

1. Extending on-premise infrastructure to the cloud in a **hybrid model** is a common pathway to the cloud.
2. Additionally, SaaS, PaaS and IaaS solutions are **frequently used in tandem** depending on IT and operational **goals**.
3. DevOps Engineers must **determine** which one(s) are **right for the organization**.

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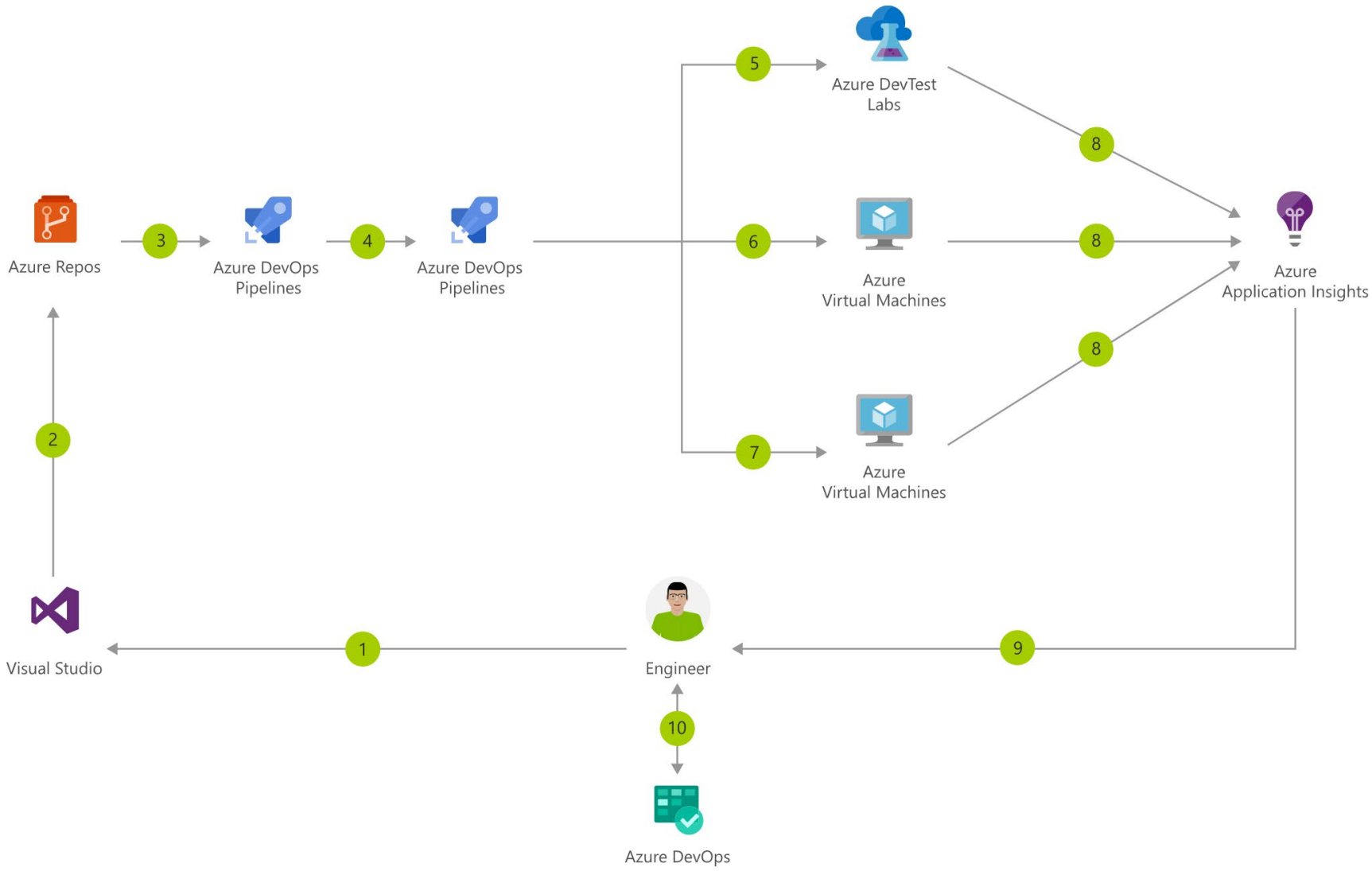
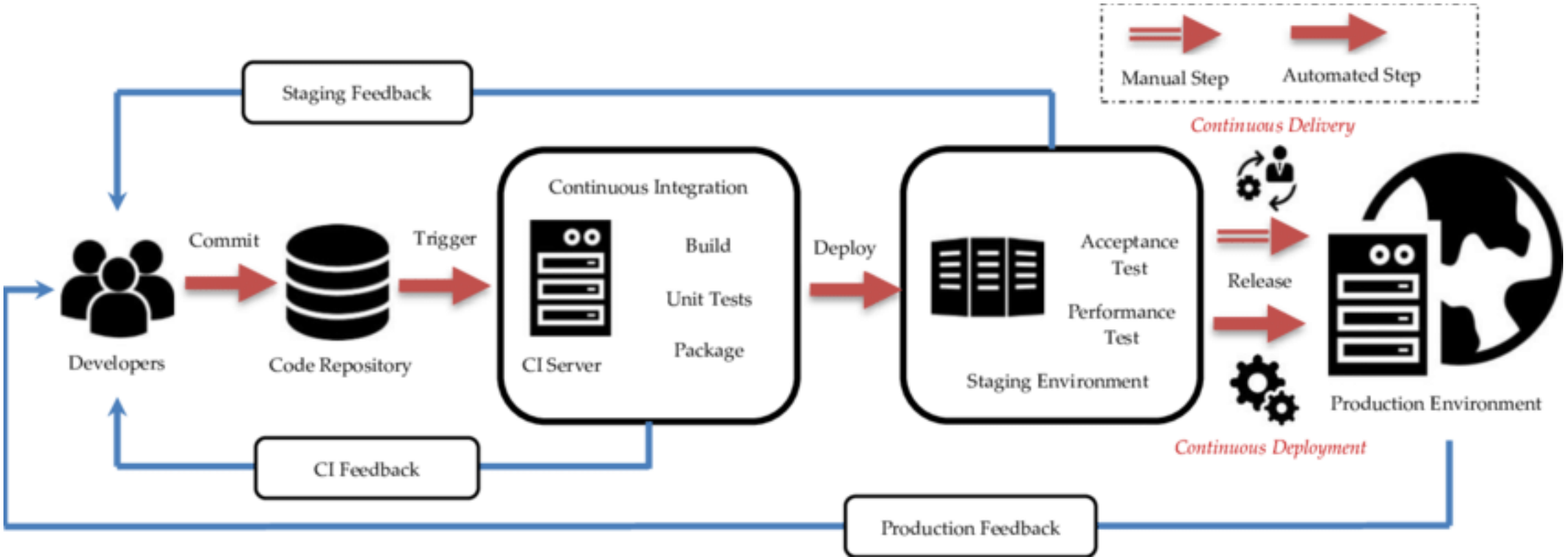
Delivery provisioning: Azure case



Continuous integration, delivery and deployment



Continuous integration, delivery and deployment

1. Continuous integration, delivery and deployment are practices that seek to **speed up the process of releasing** software by **shortening feedback loops** and **automating repetitive tasks**.
2. These practices **play a key role** in making the agile principle of **frequently delivering valuable**, working software to users a reality.

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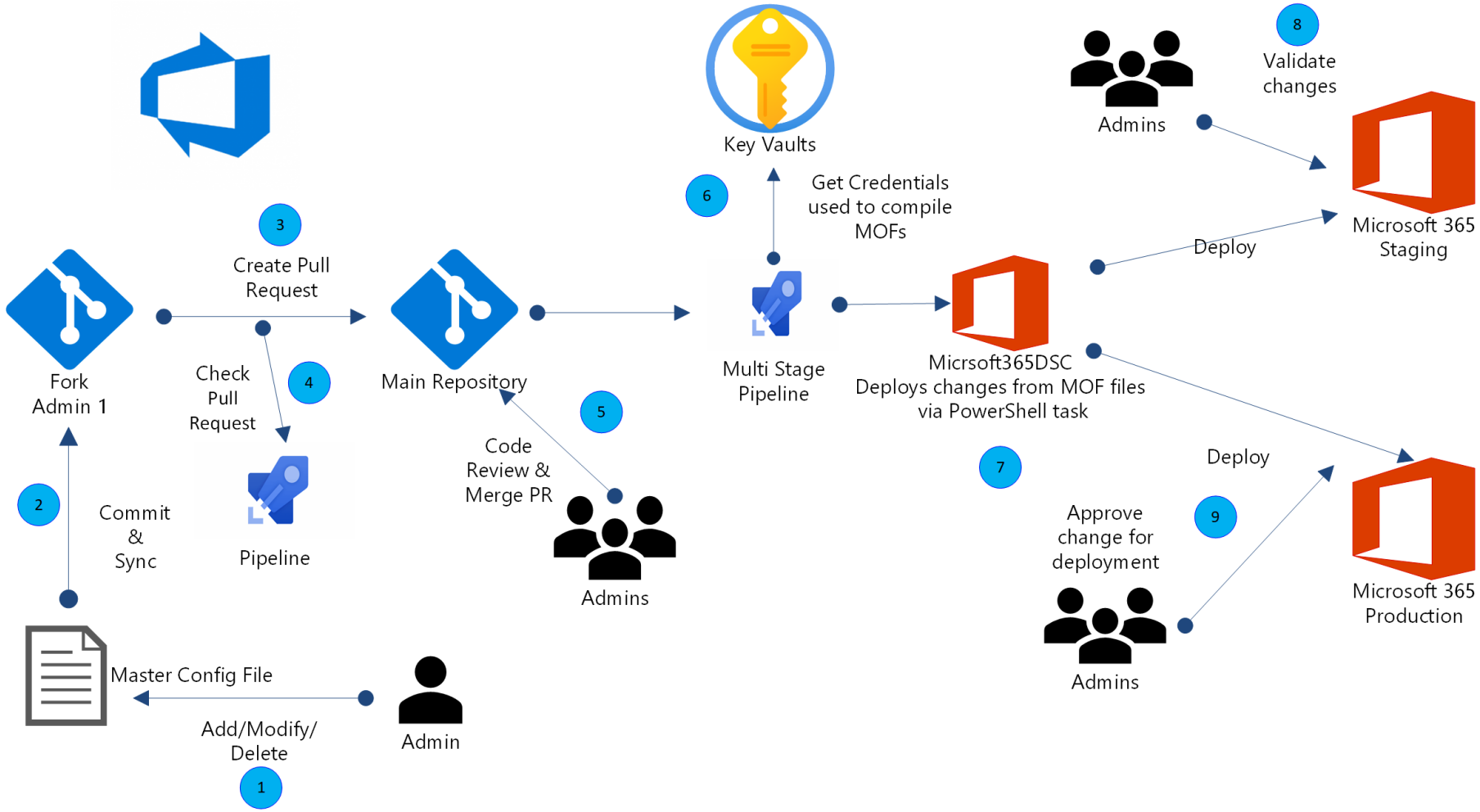
Microsoft 365 Delivery Pipeline



Microsoft 365 Delivery Pipeline

1. **Azure Pipelines** enables continuous integration **(CI)** and continuous delivery **(CD)** to test and build your code and ship it to any target.
2. **Azure Key Vault** improves the **security** of storage for tokens, passwords, certificates, API keys, and other secrets. It also **provides tightly controlled access** to these secrets.
3. **Microsoft365DSC** provides **automation for the deployment, configuration, and monitoring** of Microsoft 365 tenants via PowerShell DSC.
4. **Windows PowerShell DSC** is a management platform in PowerShell. You can use it to **manage** your **development infrastructure** by using a **configuration-as-code model**.

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EXERCISE

Kahoot time

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OBJECTIVE

Challenge what you learned!

INSTRUCTIONS

1. Connect to kahoot with this code:

<code>

1. Be ready to play!

10min

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Next steps

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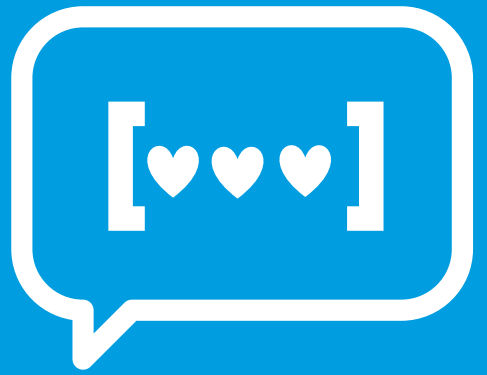

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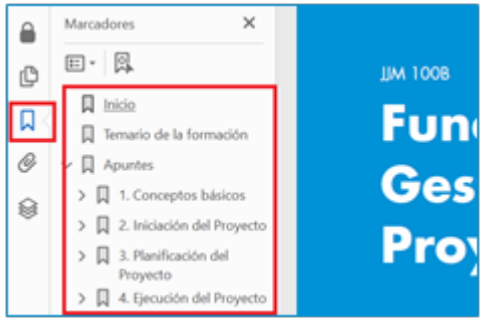
BOOKMARKS



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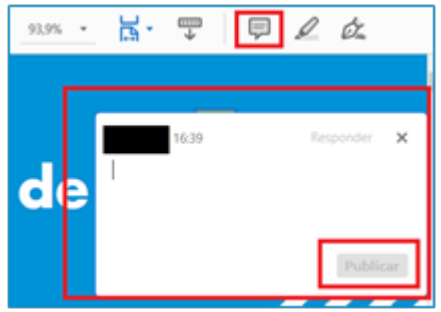

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