



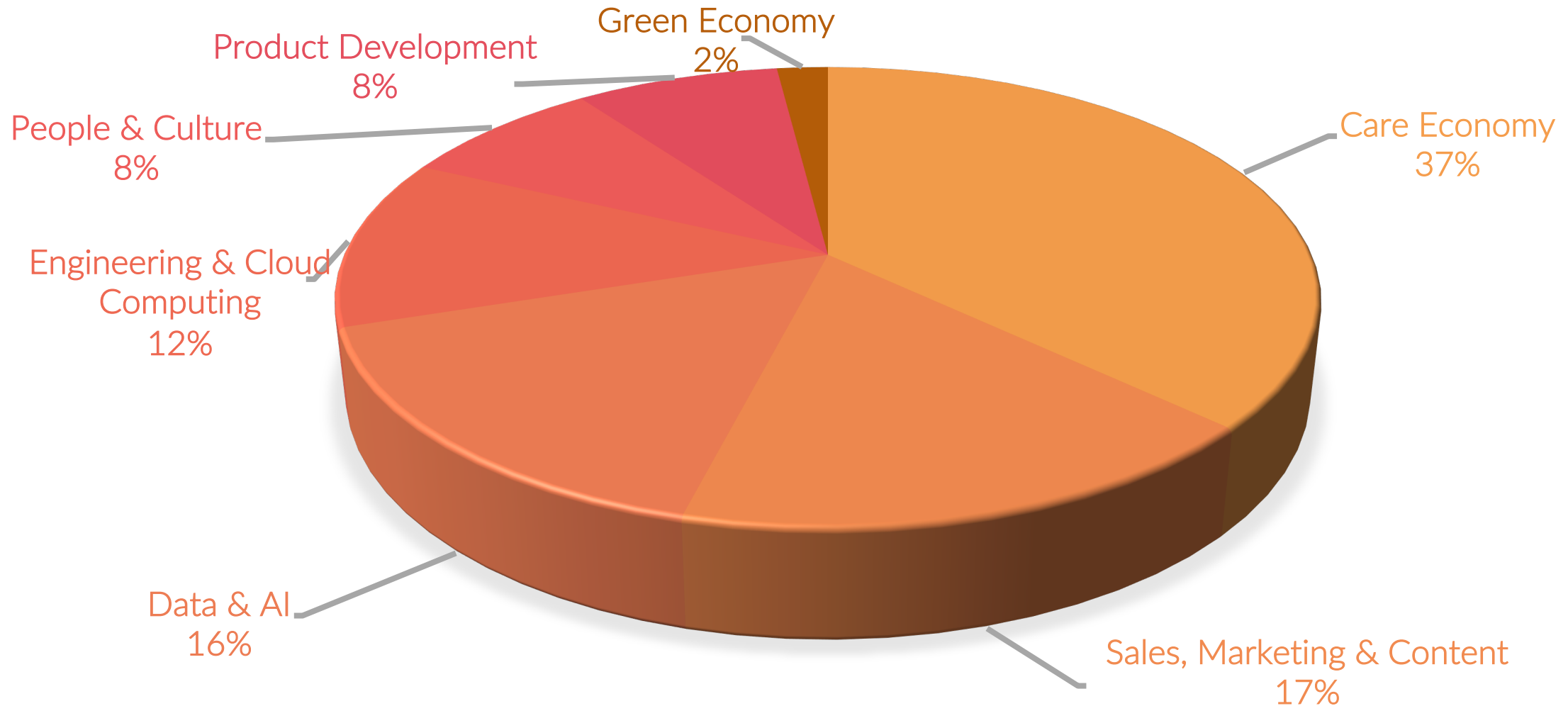
AGILE & DEVOPS

Trend Semasa

DevOps Trends & Prediction

Jobs Of Tomorrow

World Economic Forum Report January 2020



Professions of the Future

Engineering & Cloud Computing

Emerging Jobs

- 1 Site Reliability Engineer / Cloud Computing /
- 2 Python Developer / Engineering /
- 3 Full Stack Engineer / Engineering /
- 3 Javascript Developer / Engineering /
- 5 Back End Developer / Engineering /
- 6 Frontend Engineer / Engineering /
- 6 Software Developer Dotnet / Engineering /
- 8 Platform Engineer / Cloud Computing /
- 9 Development Specialist / Engineering /
- 10 Cloud Engineer / Cloud Computing /
- 10 DevOps Engineer / Cloud Computing /
- 12 Cloud Consultant / Cloud Computing /
- 13 DevOps Manager / Cloud Computing /
- 14 Technology Analyst / Engineering /

Top 10 Skills

- 1 Development Tools
- 2 Web Development
- 3 Data Storage Technologies
- 4 Software Development Life Cycle (SDLC)
- 5 Computer Networking
- 6 Human Computer Interaction
- 7 Technical Support
- 8 Digital Literacy
- 9 Business Management
- 10 Employee Learning & Development

World Economic Forum Report - January 2020
Jobs of Tomorrow: Mapping Opportunity in the New Economy

Professions of the Future


Product Development

- 1 Product Owner
- 2 Quality Assurance Tester
- 3 Agile Coach
- 4 Software Quality Assurance Engineer
- 5 Product Analyst
- 6 Quality Assurance Engineer
- 6 Scrum Master
- 8 Digital Product Manager
- 9 Delivery Lead

- 1 Software Testing
- 2 Software Development Life Cycle (SDLC)
- 3 Development Tools
- 4 Project Management
- 5 Business Management
- 6 Data Storage Technologies
- 7 Web Development
- 8 Manufacturing Operations
- 9 Digital Literacy
- 10 Leadership

World Economic Forum Report - January 2020
Jobs of Tomorrow: Mapping Opportunity in the New Economy

(N) Rank **Scale of Opportunity:** ● Small-scale ● Large-scale
Skill Type: ● Tech Disruptive ● Tech Baseline ● Business ● Soft


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Salary

Job type

Date posted

Sort By Relevance

1-30 of 1,306 jobs



DevOps Engineer


Confidential


Kuala Lumpur

MYR 6K - 10K monthly

- Career growth & development opportunities
- Annual Wage Supplement & Performance Bonus
- Work Life Balance Practice

10d ago





We have 1,306 jobs for you

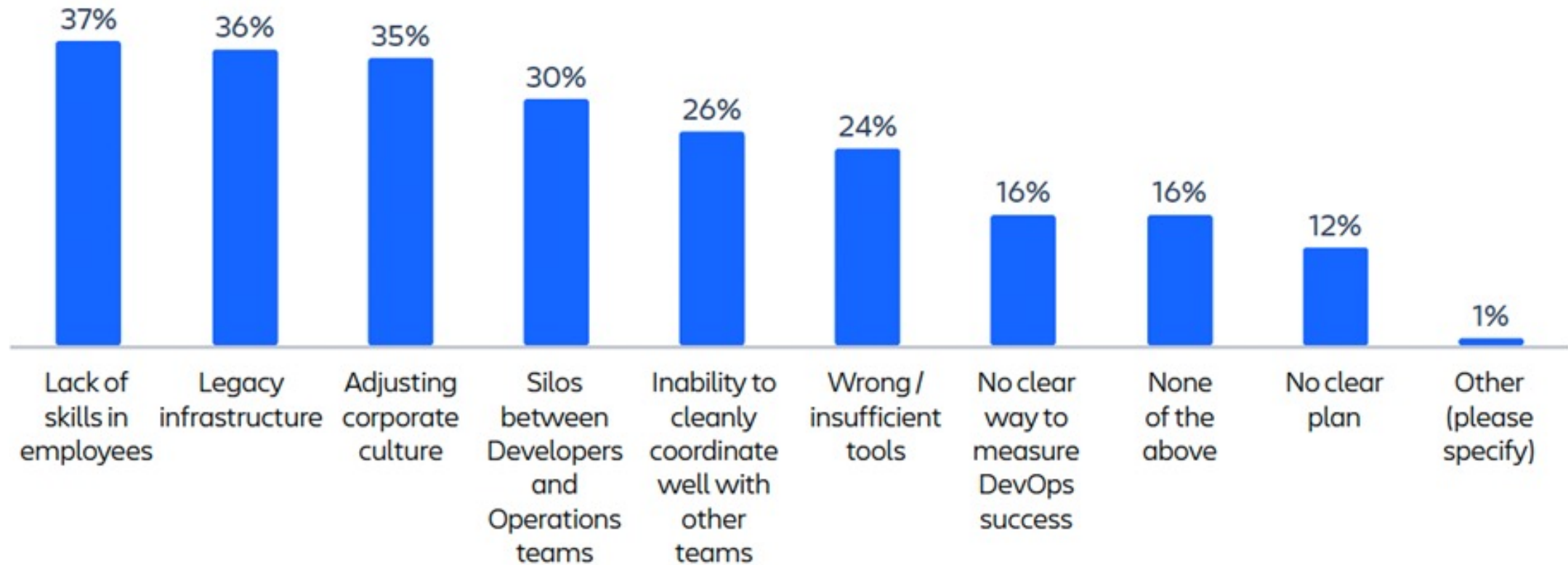
Select a job to view details

JobStreet – May 2023: 1,306 DevOps jobs

IMPACT OF DEVOPS ON ORGANIZATION



BARRIERS TO DEVOPS IMPLEMENTATION

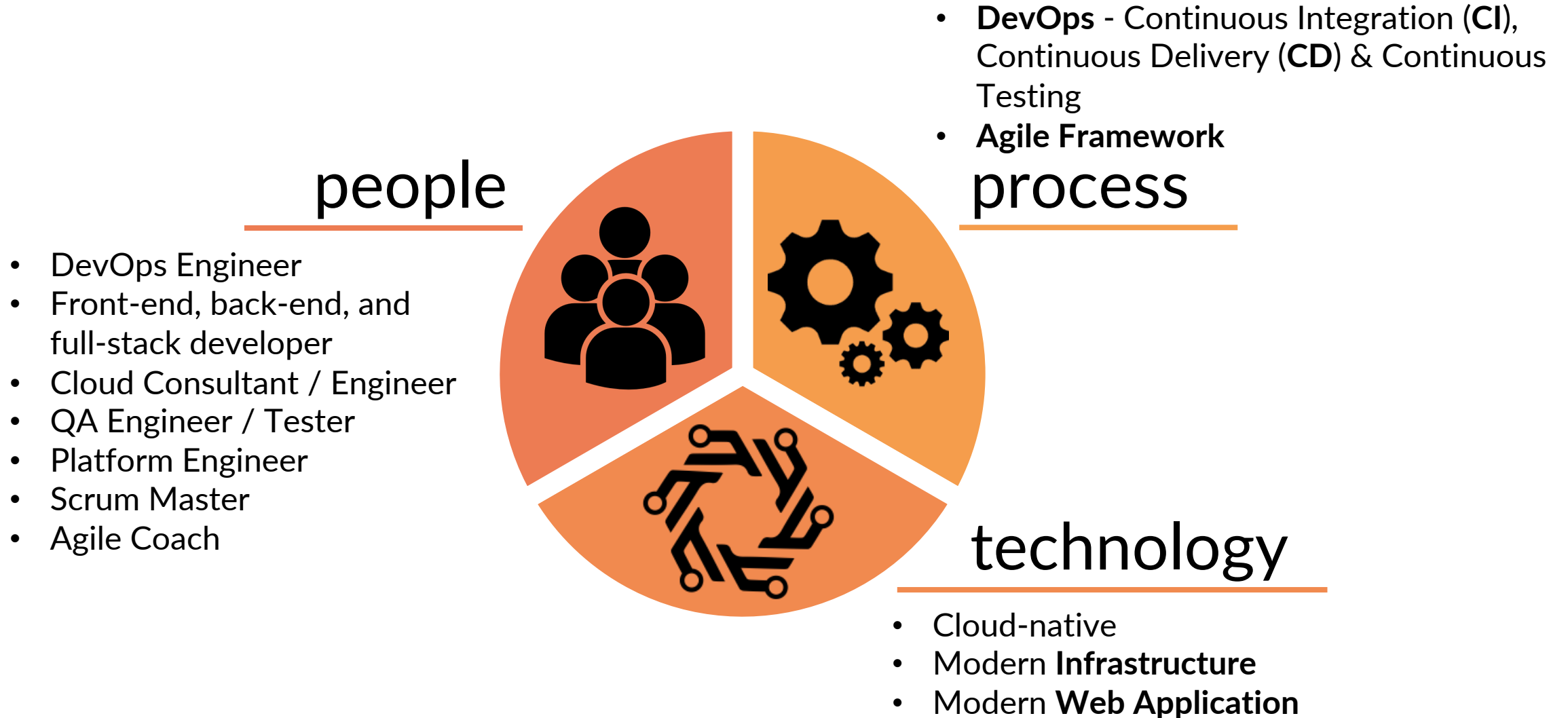


ICT Modernization

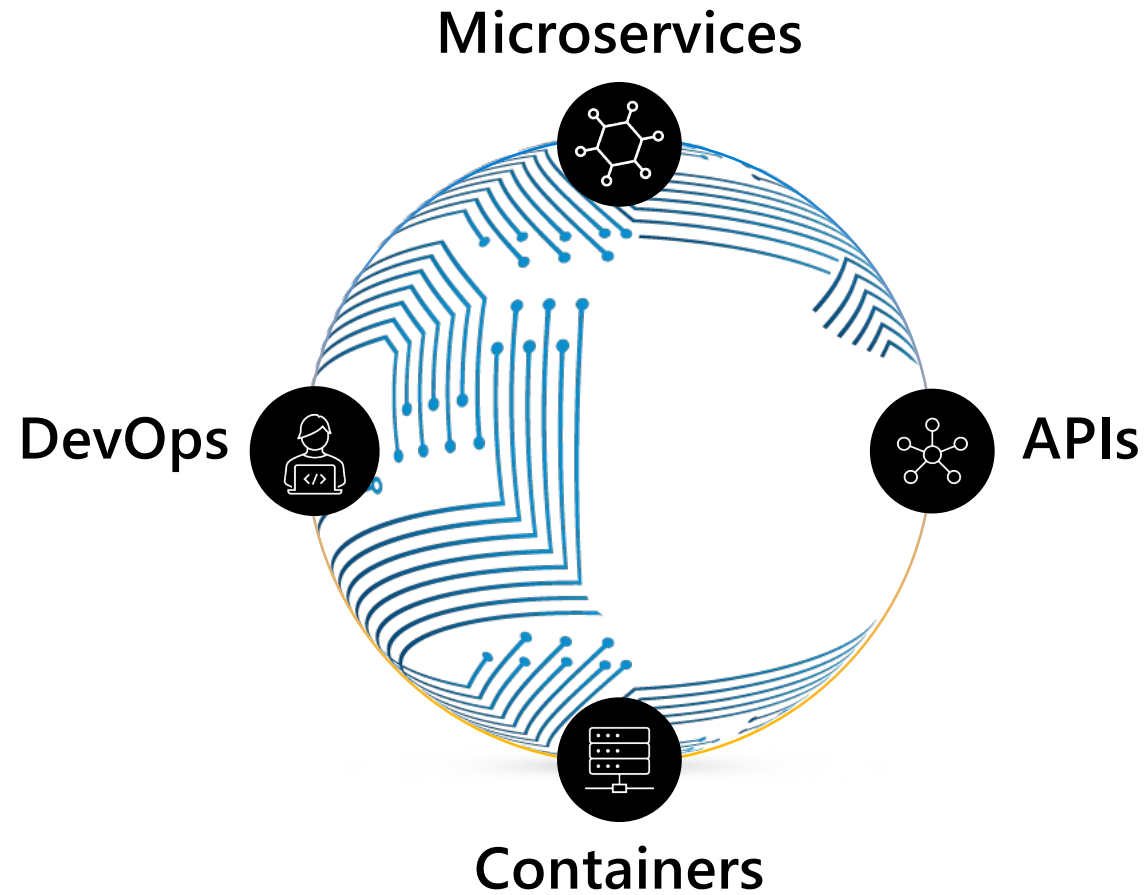
What makes a modernized application or system ?

Application or System which is developed using modern **people**, **processes**, and **technologies**.

Modern ICT Organization



Apa itu *Cloud Native technology stack*?



What is Cloud Native?

- Cloud native technologies empower organizations to **build** and **run scalable** applications in **modern, dynamic environments** such as public, private, hybrids and edge clouds.
- Containers, service meshes, microservices, immutable infrastructure, and declarative APIs exemplify this approach.
- These techniques enable **loosely coupled systems** that are resilient, manageable, and observable

What is **CNCF**?



- The [Cloud Native Computing Foundation \(CNCF\)](#) hosts critical components of the global technology infrastructure.
- CNCF brings together the world's top developers, end users, and vendors.
- CNCF is part of the nonprofit Linux Foundation.
- CNCF seeks to drive adoption of this paradigm by fostering and sustaining an ecosystem of [open source](#) and [vendor-neutral](#) technologies.
- Website : cncf.io

{ Cloud Native Technology Landscape }

<https://landscape.cncf.io>

Modern Technology

Modern Infrastructure

Serverless

backend services on an as-used basis. **Function as a service.**

Microservices

split your application into a set of smaller, interconnected services, **API** services

Kubernetes

platform for automating deployment, scaling, and operations of application containers

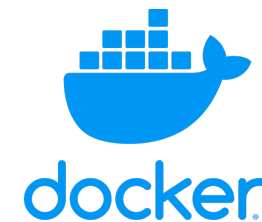


Cloud Native

build and run scalable applications in modern, dynamic environments such as public, private, and hybrid clouds
<https://cncf.io>

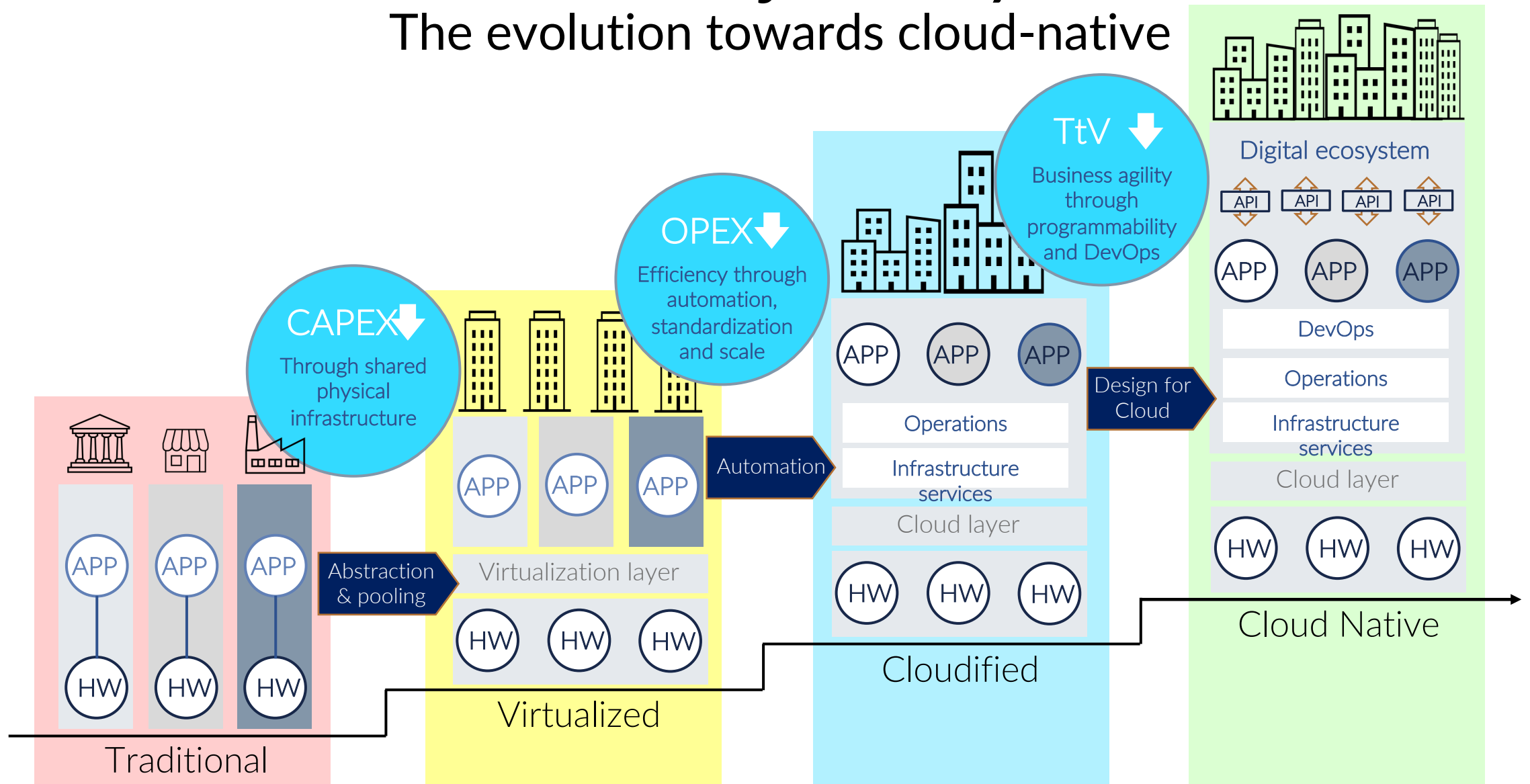
Container

Package Software into Standardized Units for Development, Shipment and Deployment



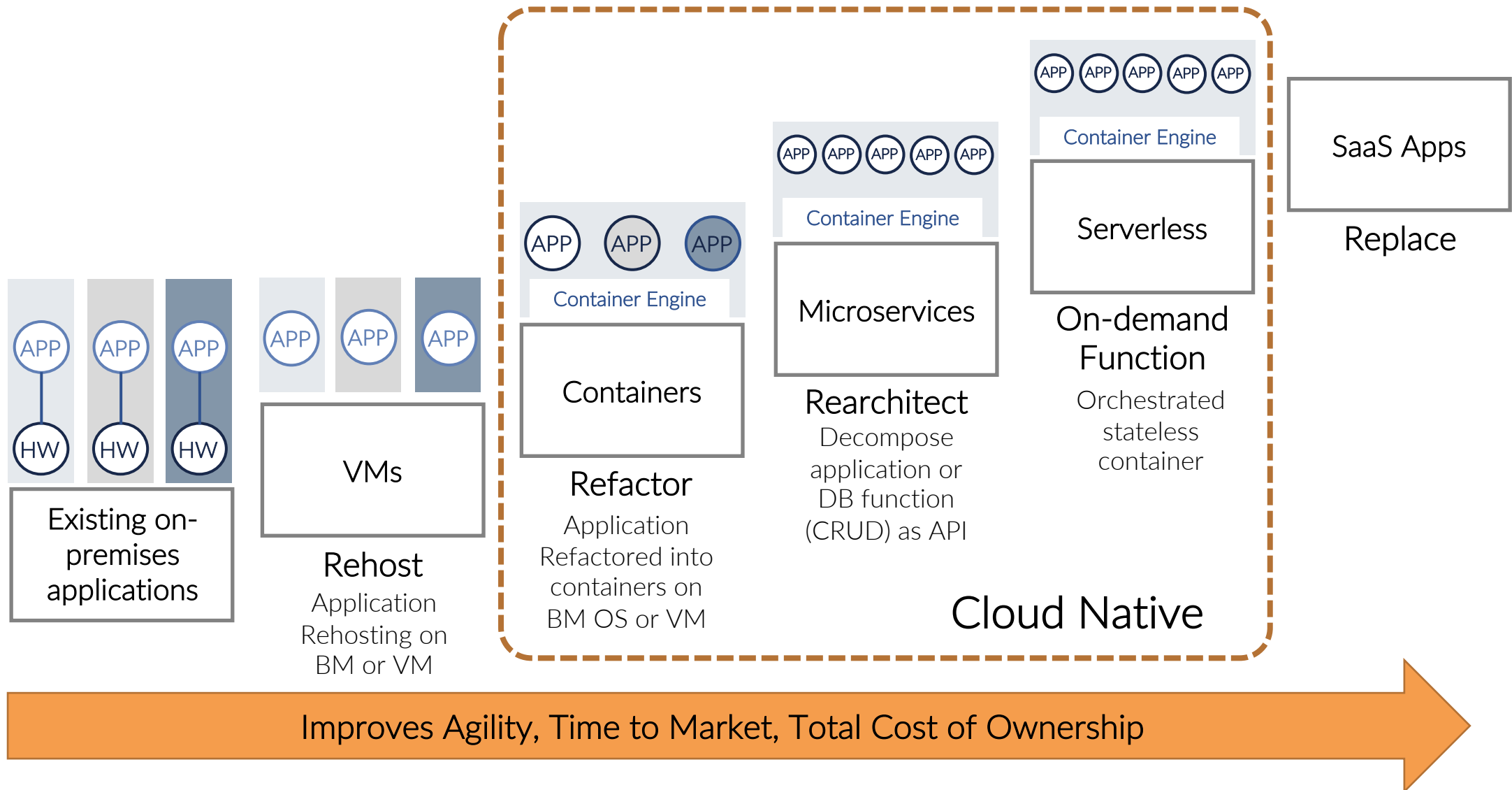
Cloud journey

The evolution towards cloud-native



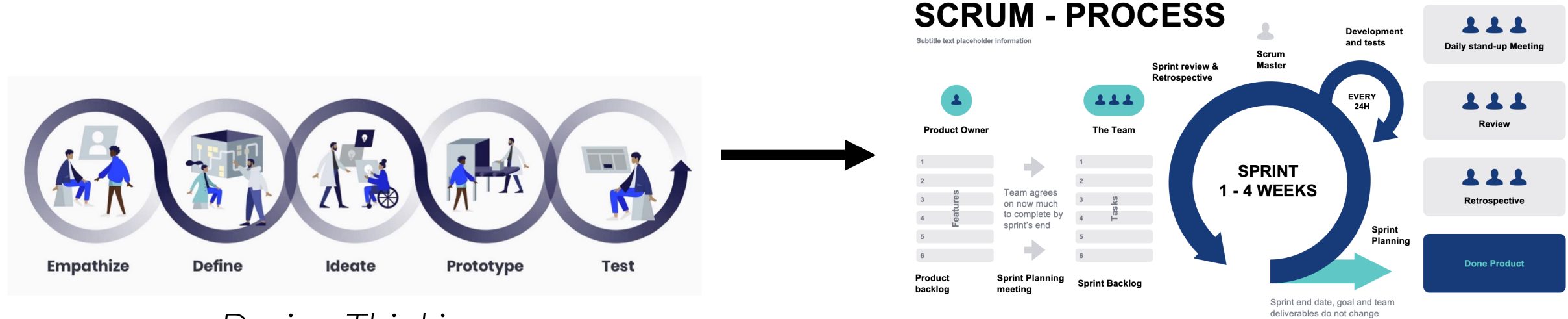
Application Modernization

The evolution towards application modernization

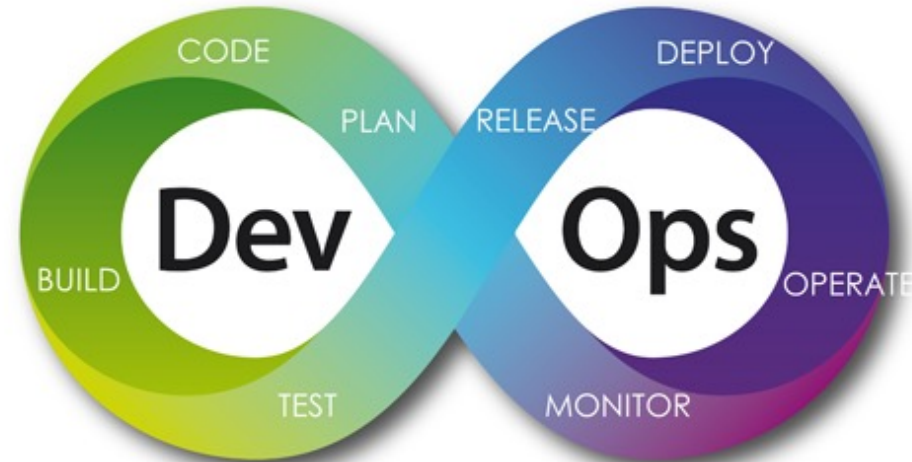


{ Pengenalan kepada DevOps, Proses Agile,
Git, CI / CD & Continuous Testing }

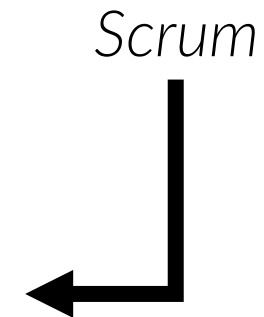
Pembangunan Sistem – Agile DevOps



Design Thinking



Scrum

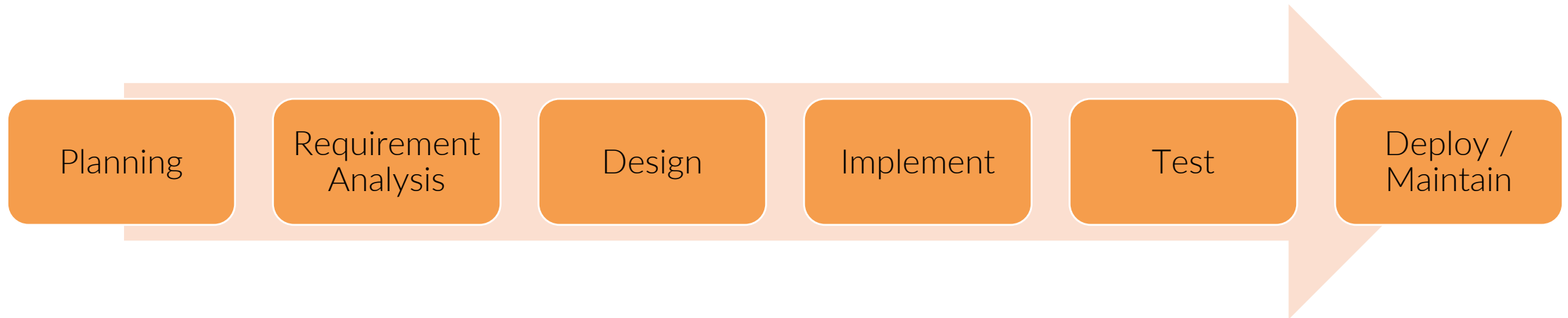


Development & Operation

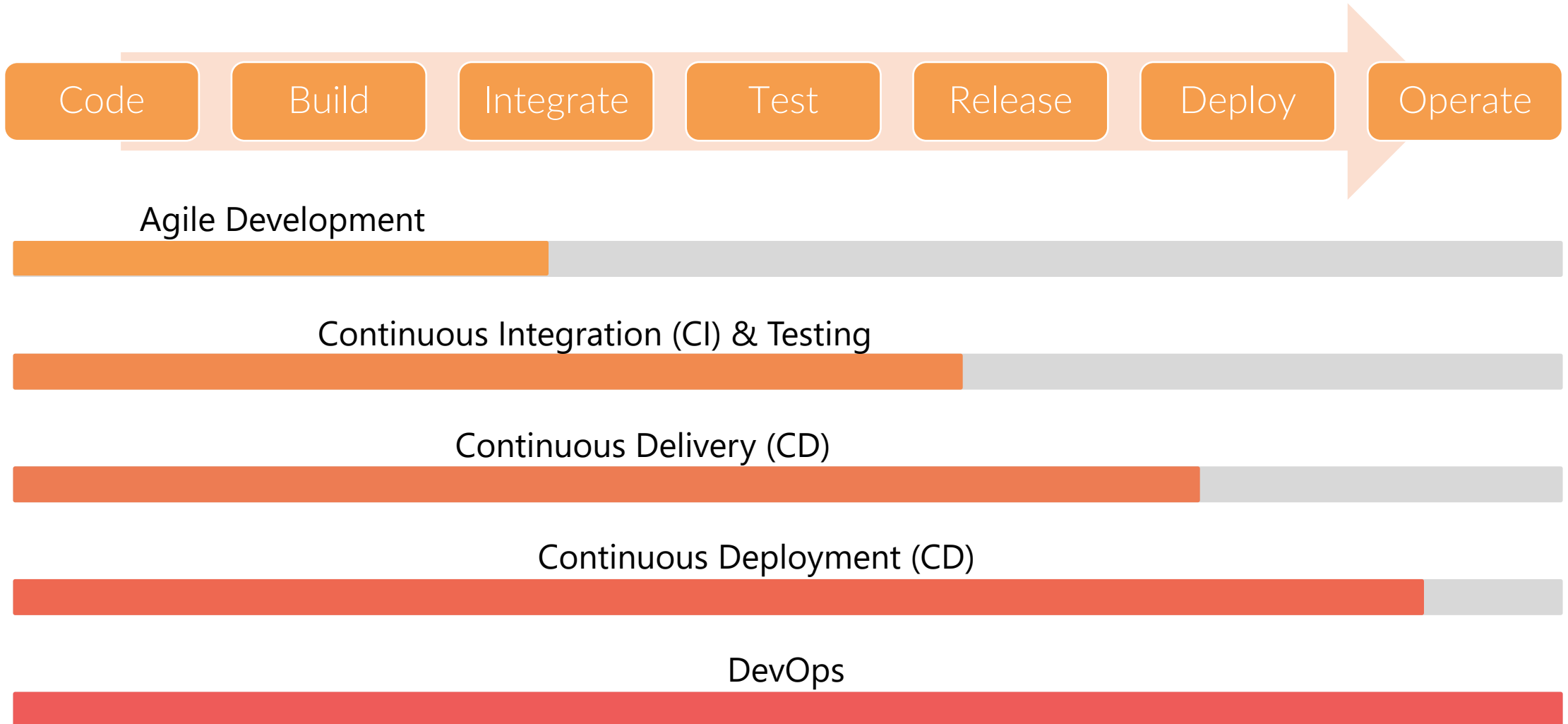
DevOps

- DevOps – Development + Operations
- DevOps is the union of people, processes, and technology to deliver continuous value to users.

Software Development Life Cycle (SDLC)

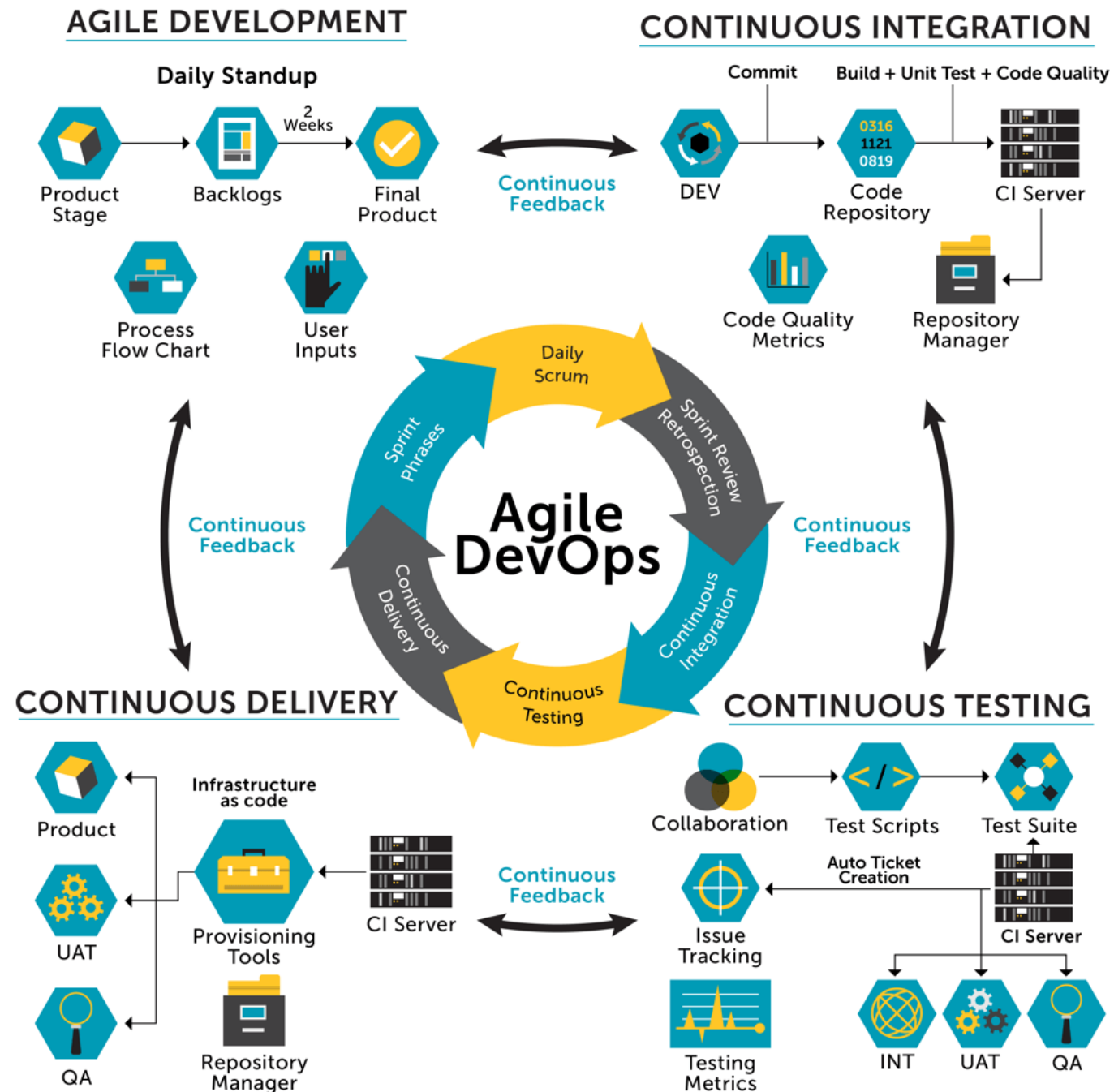


Modern Proses

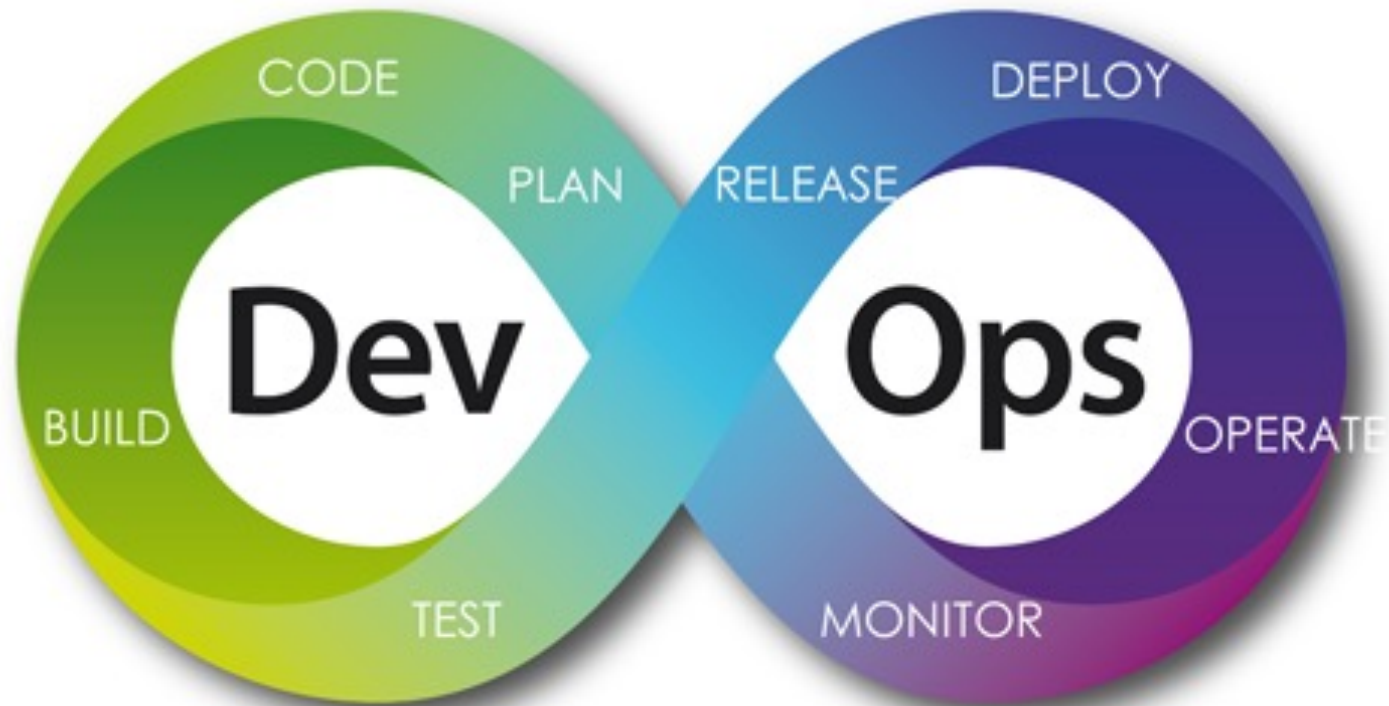


Proses Modern

- **AGILE Development methodology**
 - a practice that promotes continuous iteration of development and testing throughout the software development lifecycle of the project
- **Continuous integration (CI)**
 - Software development practice in which small adjustments to the underlying code in an application are tested every time a team member makes changes
- **Continuous delivery (CD)**
 - an extension of continuous integration - focuses on automating the software delivery process
- **Continuous Testing**
 - the process of executing automated tests as part of the software delivery pipeline in order to obtain feedback on the business risks associated with a software release candidate as rapidly as possible.



DevOps Lifecycle



Sumber: Portal MySQA Mampu - sqa.mampu.gov.my

DevOps

- *DevOps Framework – Software Quality Management defines **the practices and technical specifications** required to ensure successful adoption of DevOps focusing on quality management for government agencies*
- *The DevOps Framework covers the following area:*
 - *The **8 phases of DevOps** with their respective processes and specifications*
 - *Project planning and quality management*
 - ***Software quality management** during development and operations phases*
 - *Key success factors in adopting DevOps approach successfully*

Apa itu proses Agile?

- *In software development, Agile practices involve **discovering requirements and developing solutions through the collaborative effort of self-organizing and cross-functional teams and their customer(s)/end user(s).***
 - *It advocates adaptive planning, evolutionary development, early delivery, and continual improvement, and it encourages flexible responses to change.*
 - *It was popularized by the 2001 - publication of Manifesto for Agile Software Development.*
- Wikipedia

Agile vs Waterfall

- One of the differences between agile software development methods and waterfall is the approach to *quality and testing*.
 - In the **waterfall model**, work moves through Software Development Lifecycle (SDLC) phases—with one phase being completed before another can start (sequential) —hence the testing phase is separate and follows a build phase
 - In **agile** software development, however, testing is completed in the same iteration as programming.
- Wikipedia

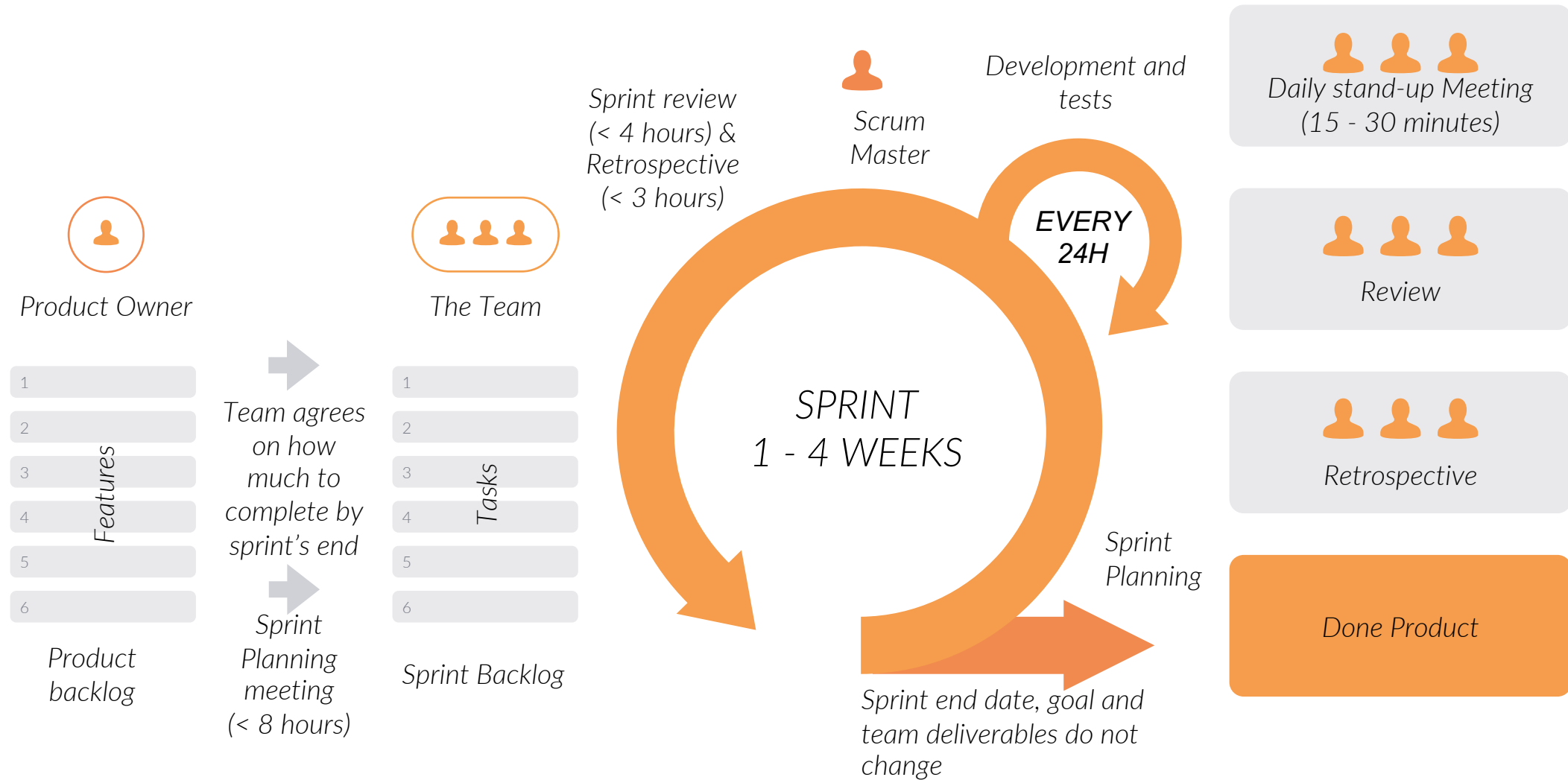
Agile vs Waterfall

- *Waterfall works well for small projects with clear end goals, while Agile is best for large projects that require more flexibility.*
- *In Waterfall, clients aren't typically involved, whereas in Agile, **client feedback is crucial**.*

Apa itu Scrum?

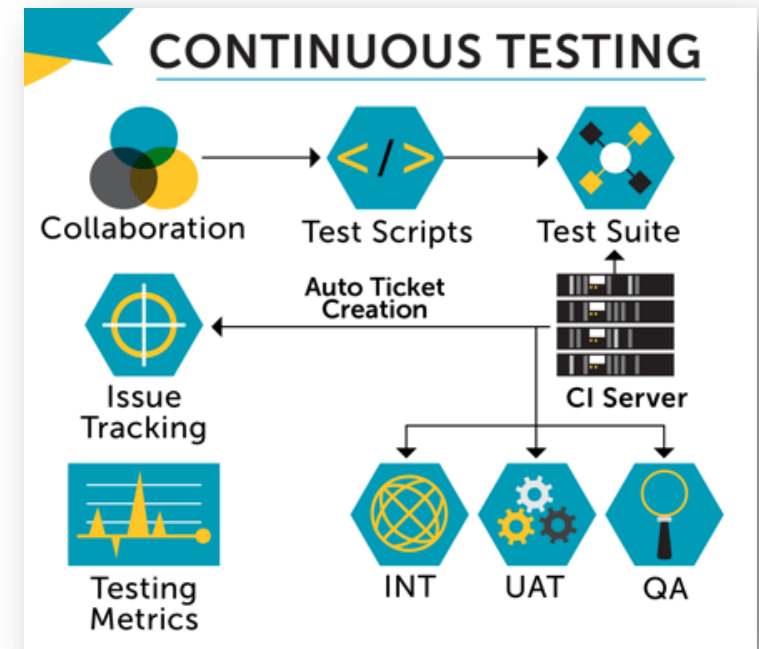
- *Scrum* is a framework utilizing an *agile* mindset for *developing, delivering, and sustaining complex products*, with an initial emphasis on software development
- *Scrum* is a lightweight, iterative and incremental framework for managing complex software development work.

SCRUM



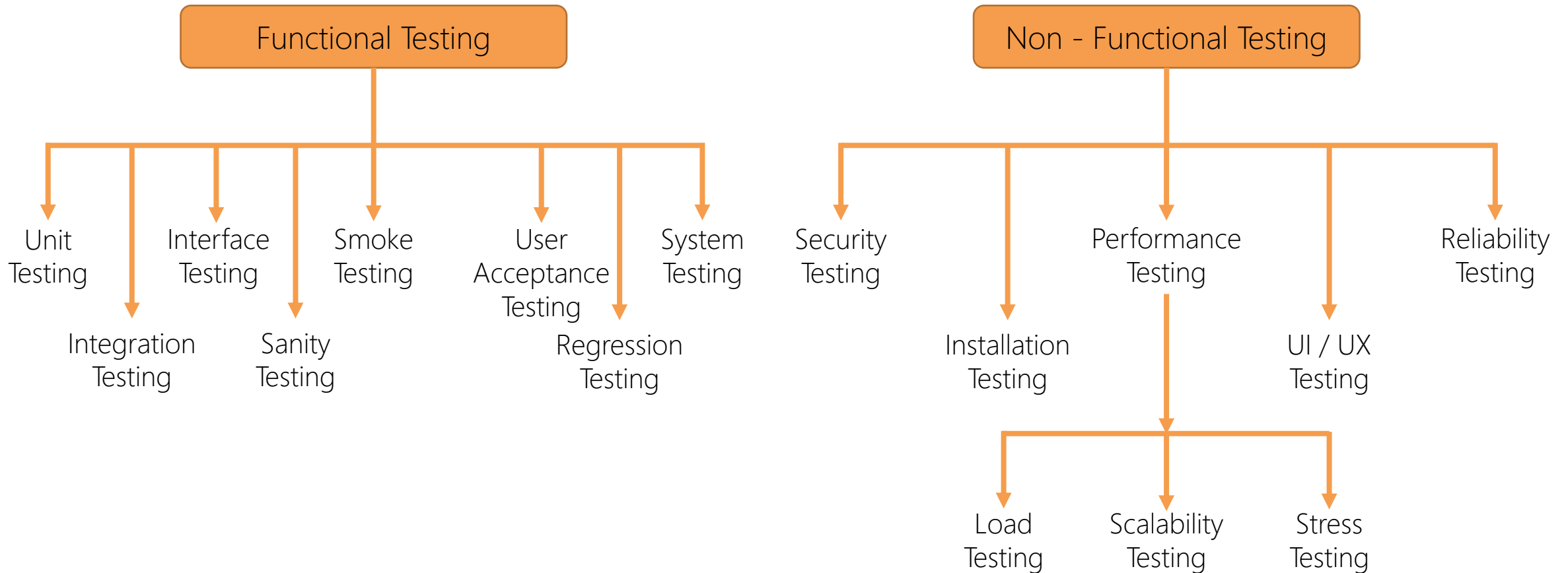
Continuous Testing

- *the process of executing automated tests as part of the software delivery pipeline in order to obtain feedback on the business risks associated with a software release candidate as rapidly as possible.*

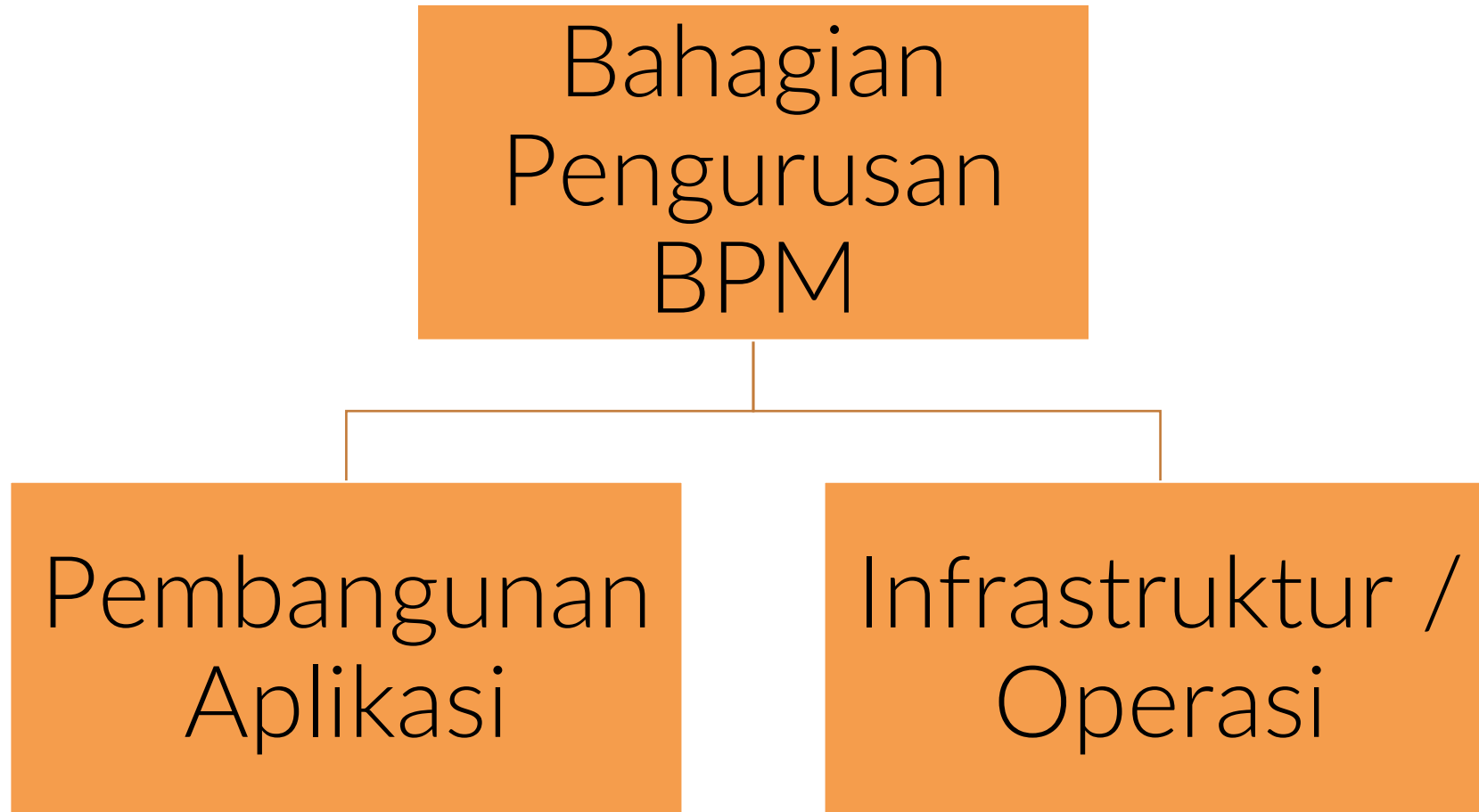


Continuous Testing

Software Testing Types



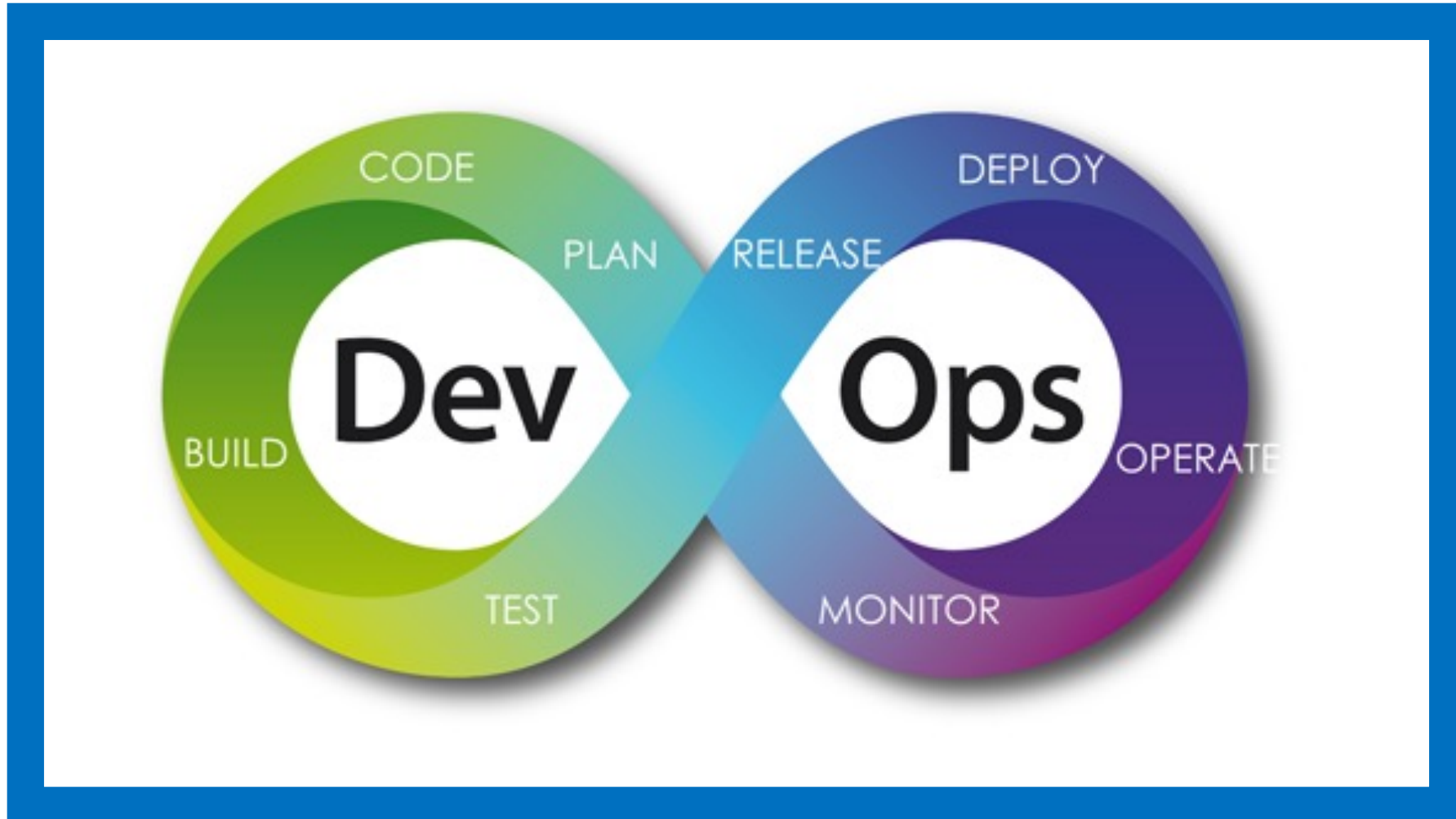
Organisasi



Infrastructure Engineer vs DevOps Engineer

	Infrastructure Engineer	DevOps Engineer
Definition	responsible for the physical and virtual infrastructure	responsible for the automation and management of software development and deployment processes
Focus	designing, implementing, and managing the underlying infrastructure required to support software applications	the intersection of software development and IT operations, aiming to improve collaboration and efficiency in the software development lifecycle.
Responsibilities	setting up and maintaining servers, networks, storage systems, and other hardware and software components needed for running applications.	automating processes, implementing continuous integration and continuous delivery (CI/CD) pipelines, managing infrastructure as code, and fostering a culture of collaboration between development and operations teams.
Skills	expertise in areas such as system administration, networking, virtualization, cloud computing, and security.	combination of skills in software development, system administration, configuration management, scripting, and tools for automation and orchestration.
Tasks	provisioning servers, configuring network devices, ensuring system availability and performance, managing backups, and troubleshooting infrastructure-related issues.	implementing deployment pipelines, configuring and managing infrastructure using tools, monitoring application performance, managing containerization technologies, and ensuring scalability and reliability of applications.

DevOps Lifecycle



Network / System / Virtualization

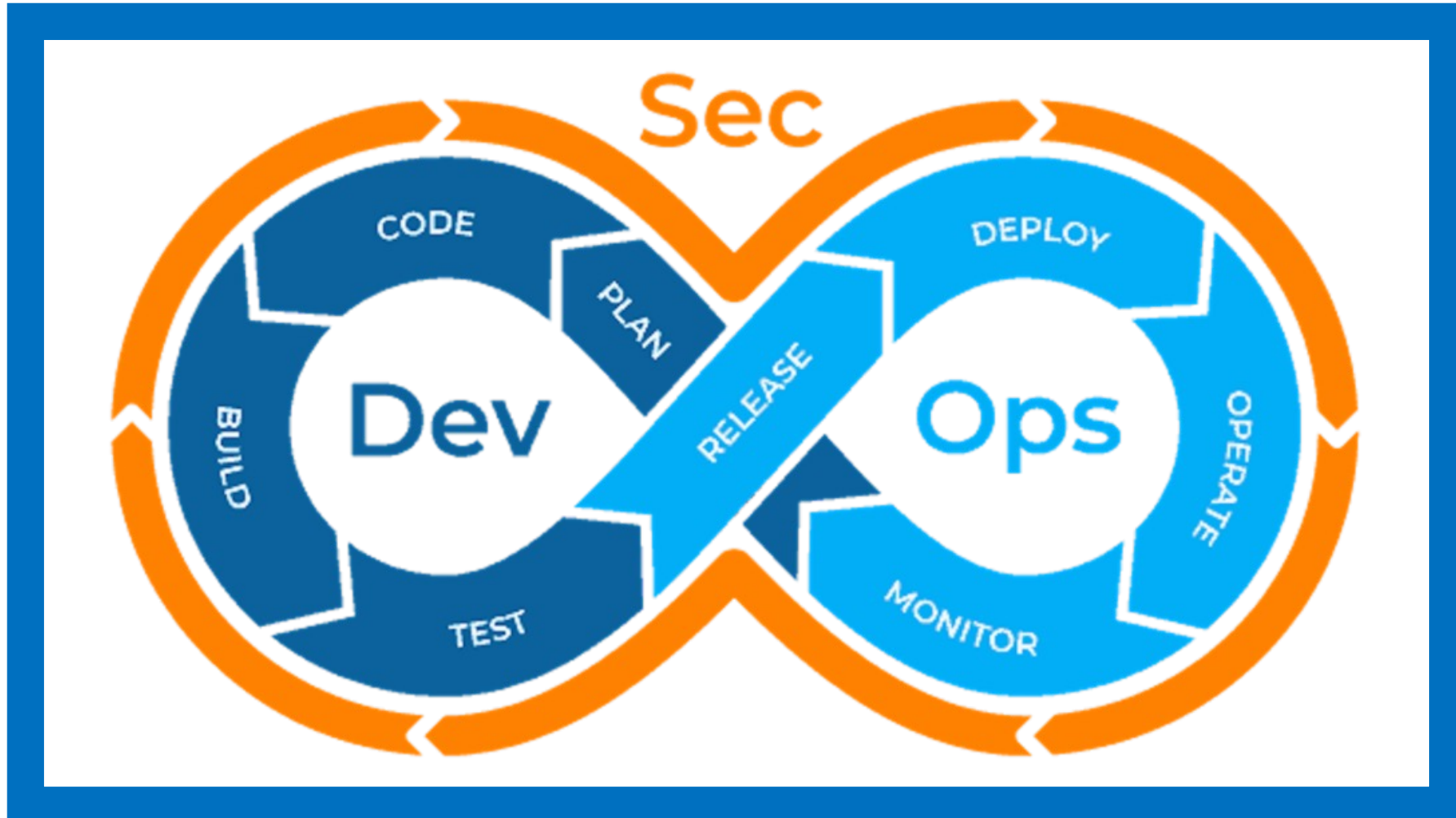
DevSecOps

- The term "DevSecOps" is a combination of "Development," "Security," and "Operations."
- Key principles & practices:
 - Security as Code
 - Continuous Security
 - Collaboration and Communication
 - Shift-Left Security
 - Threat Modeling
 - Security Automation

Security Engineer vs DevOps Engineer

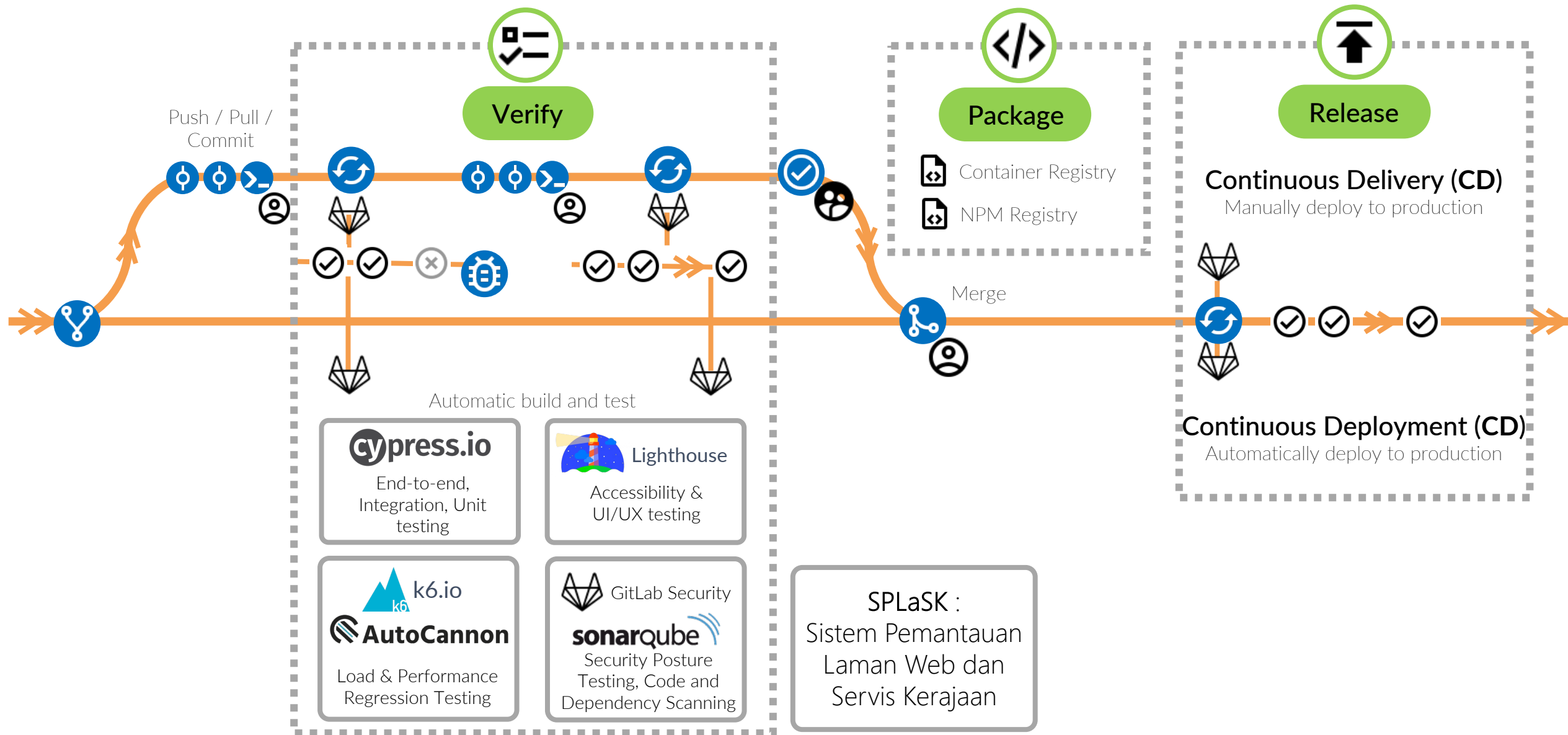
	Infrastructure Engineer	DevOps Engineer
Objectives	to protect systems and data from potential threats, vulnerabilities, and attacks.	to improve collaboration, automation, and efficiency throughout the software development lifecycle.
Focus	specializes in designing, implementing, and maintaining security measures within an organization's systems, applications, and infrastructure	streamlining the software development and deployment processes by bridging the gap between development and operations teams
Responsibilities	<ul style="list-style-type: none"> • Conducting risk assessments and vulnerability testing. • Developing and implementing security policies and procedures. • Configuring and managing security tools and technologies. • Monitoring systems for security breaches and investigating incidents. • Collaborating with development teams to ensure secure coding practices. • Providing guidance and training to employees on security best practices. 	<ul style="list-style-type: none"> • Establishing and maintaining continuous integration and delivery (CI/CD) pipelines. • Automating deployment and infrastructure provisioning processes. • Monitoring and optimizing application performance and scalability. • Managing and configuring cloud infrastructure and tools. • Collaborating with development and operations teams to resolve issues. • Implementing and managing configuration management tools.
Skills	expertise in areas such as system administration, networking, virtualization, cloud computing, and security.	combination of skills in software development, system administration, configuration management, scripting, and tools for automation and orchestration.

DevSecOps Lifecycle



Network / System / Virtualization Security

Modern Process using GitLab



Q&A