

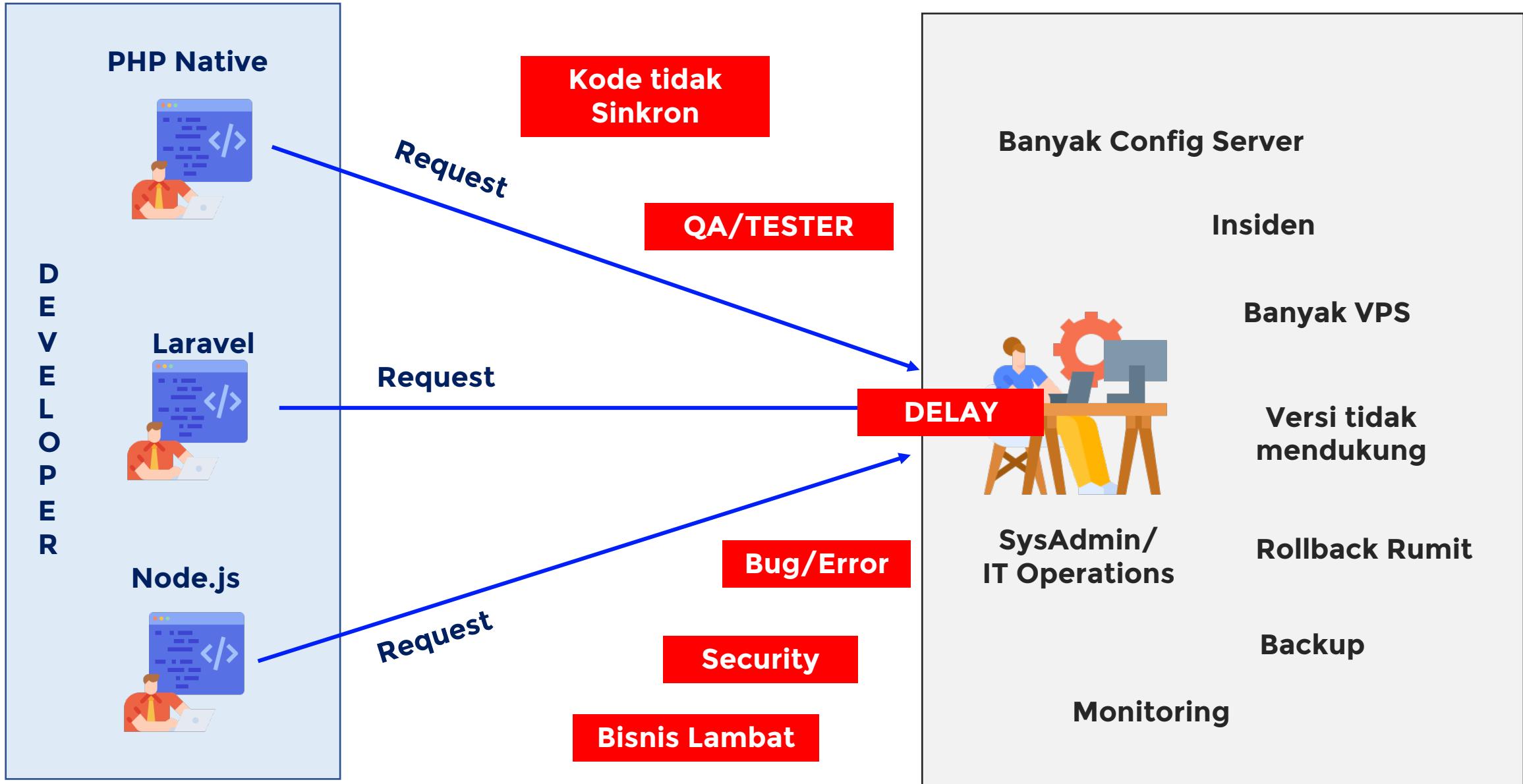
Secure DevOps

Muhammad Shifa Zulfikar

Co-founder & COO at CyberArmyID

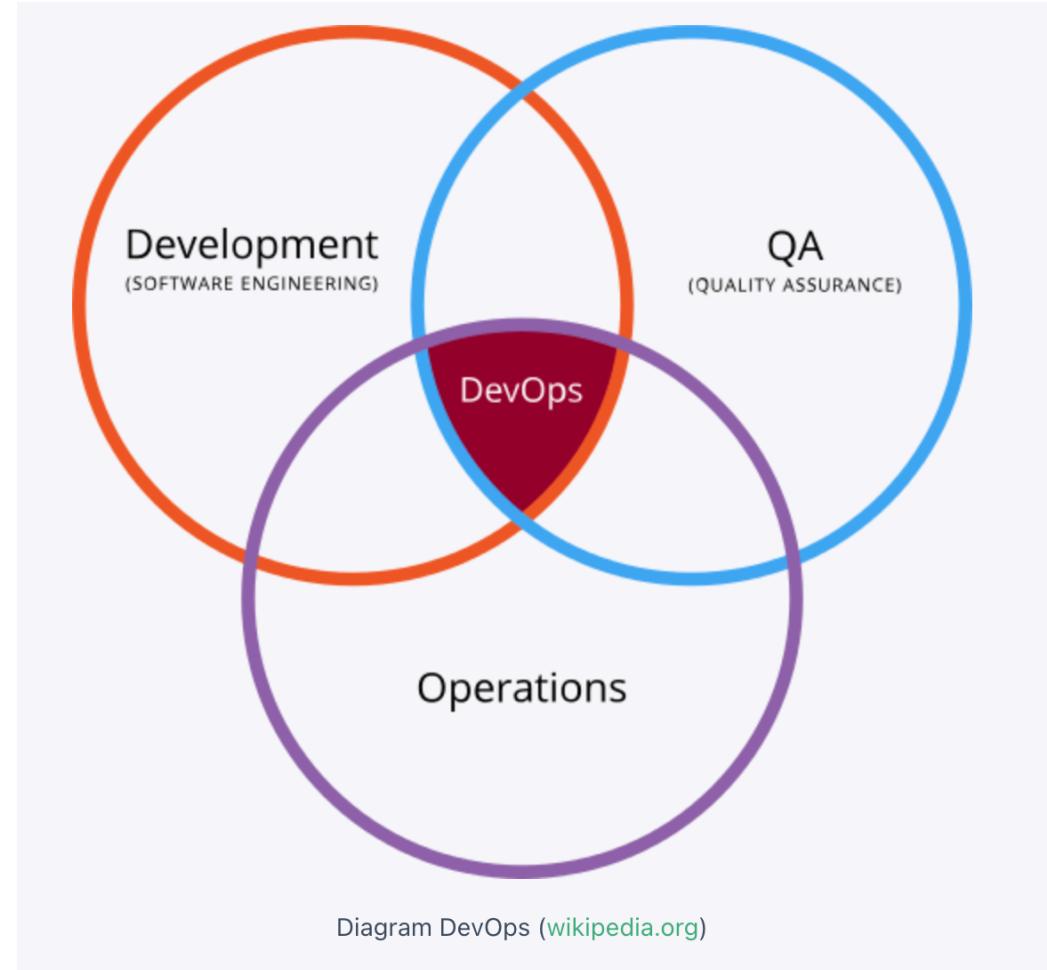


Problem ?



Menurut Beberapa Pendapat/Pakar

Dari perspektif akademik, Len Bass, Ingo Weber, dan Liming Zhu, kelompok peneliti di Software Engineering Institute memberikan definisi DevOps sebagai seperangkat praktik yang dimaksudkan untuk **mengurangi waktu** antara melakukan perubahan pada sistem dan perubahan yang ditempatkan pada produksi normal, sambil **memastikan kualitas tinggi**.



Menurut Beberapa Pendapat/Pakar

Versi Microsoft, penyatuan orang, proses, dan produk untuk memungkinkan pengiriman manfaat terus menerus kepada pengguna akhir (End User). Dev dan Ops mengacu pada penggantian Development and Operations yang terisolasi untuk menciptakan tim multidisiplin yang sekarang bekerja sama dengan praktik dan alat yang dibagikan secara efisien.

Versi Amazon, DevOps adalah kombinasi filosofi budaya, praktik, dan alat untuk meningkatkan kemampuan organisasi untuk memberikan aplikasi dan layanan dengan kecepatan tinggi; mengembangkan dan meningkatkan produk dengan kecepatan lebih cepat daripada organisasi yang menggunakan pengembangan perangkat lunak dan proses manajemen infrastruktur tradisional. Kecepatan ini memungkinkan organisasi untuk lebih melayani pelanggan mereka dan bersaing lebih efektif di pasar.

Versi Atlassian, DevOps adalah serangkaian praktik yang mengotomatiskan proses antara pengembangan perangkat lunak dan tim TI, sehingga mereka dapat membangun, menguji, dan merilis perangkat lunak dengan lebih cepat dan lebih andal.

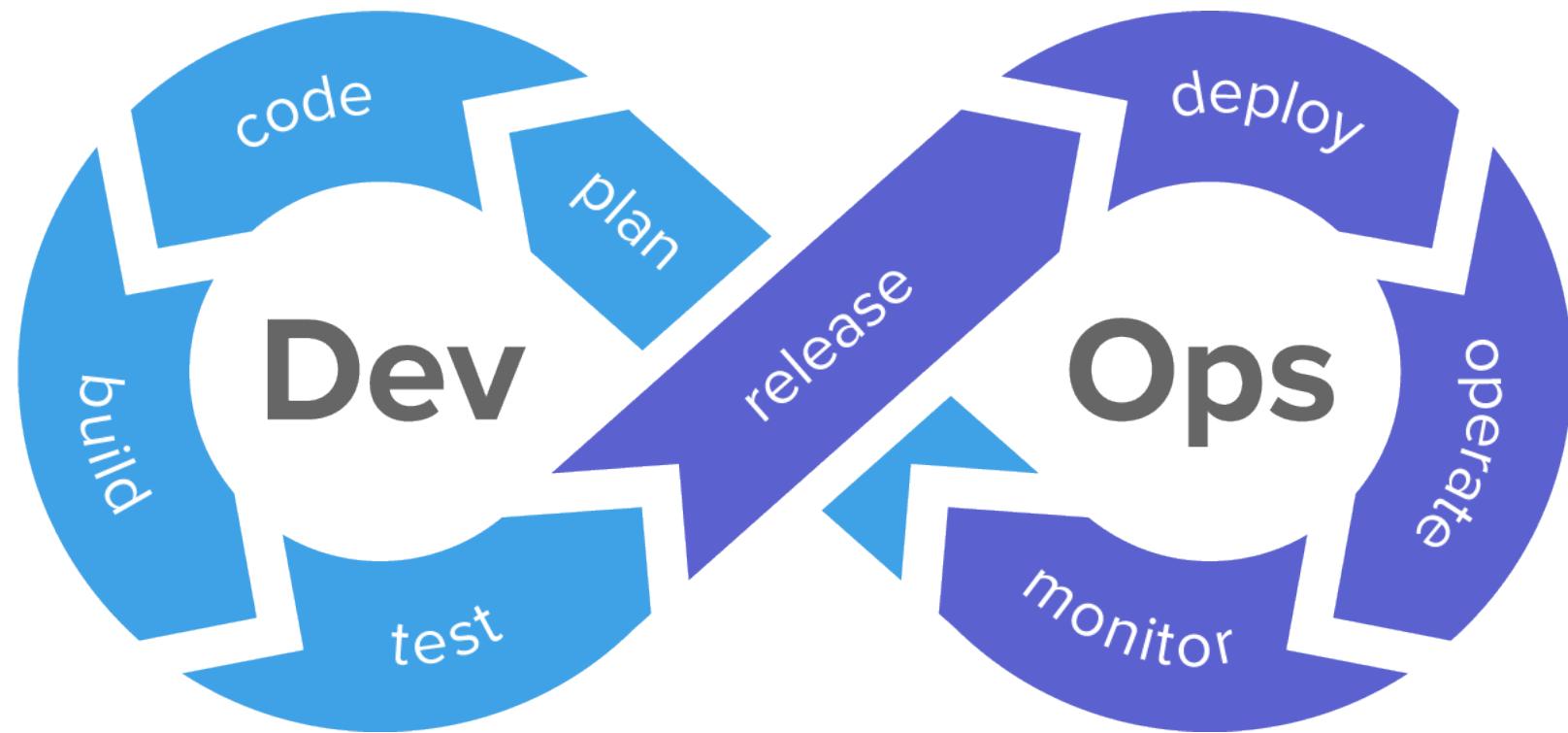
What is DevOps

Culture

Collaboration

Automation & Continuous

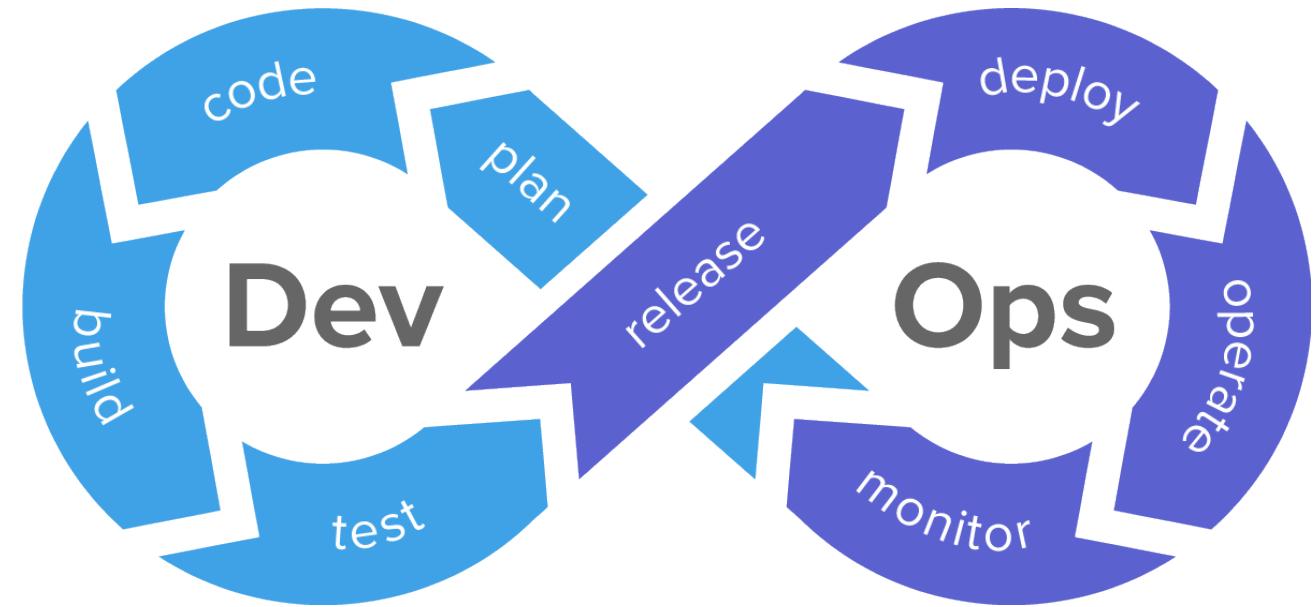
Fast & High Quality



Value of DevOps

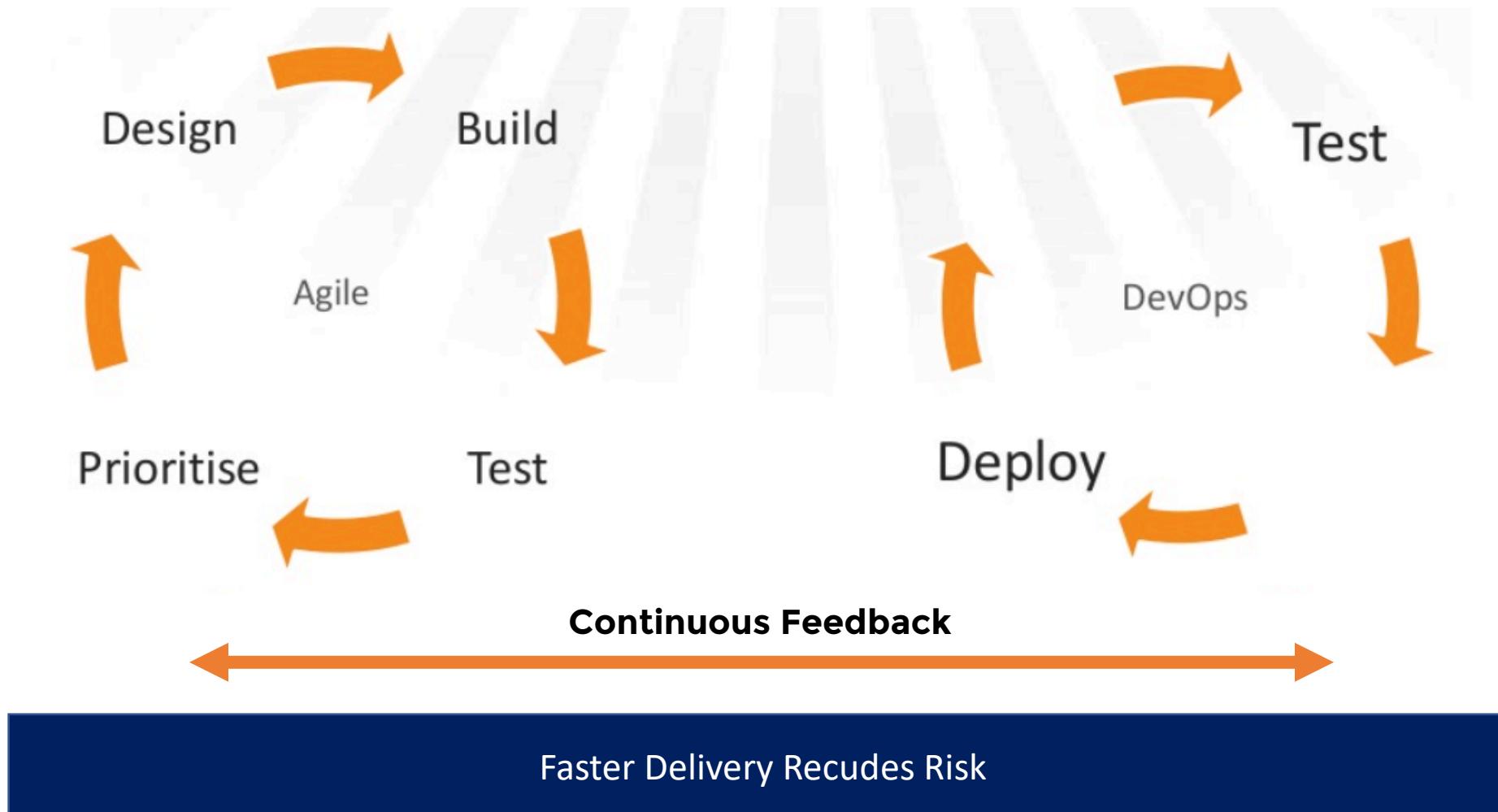
Shorter Cycles & Higher Quality

- **Faster time to Market**
- **Lower failure rates**
- **Shortened lead time**
- **Faster MTTR**
 - Mean time to realize, recover, repair, remediate

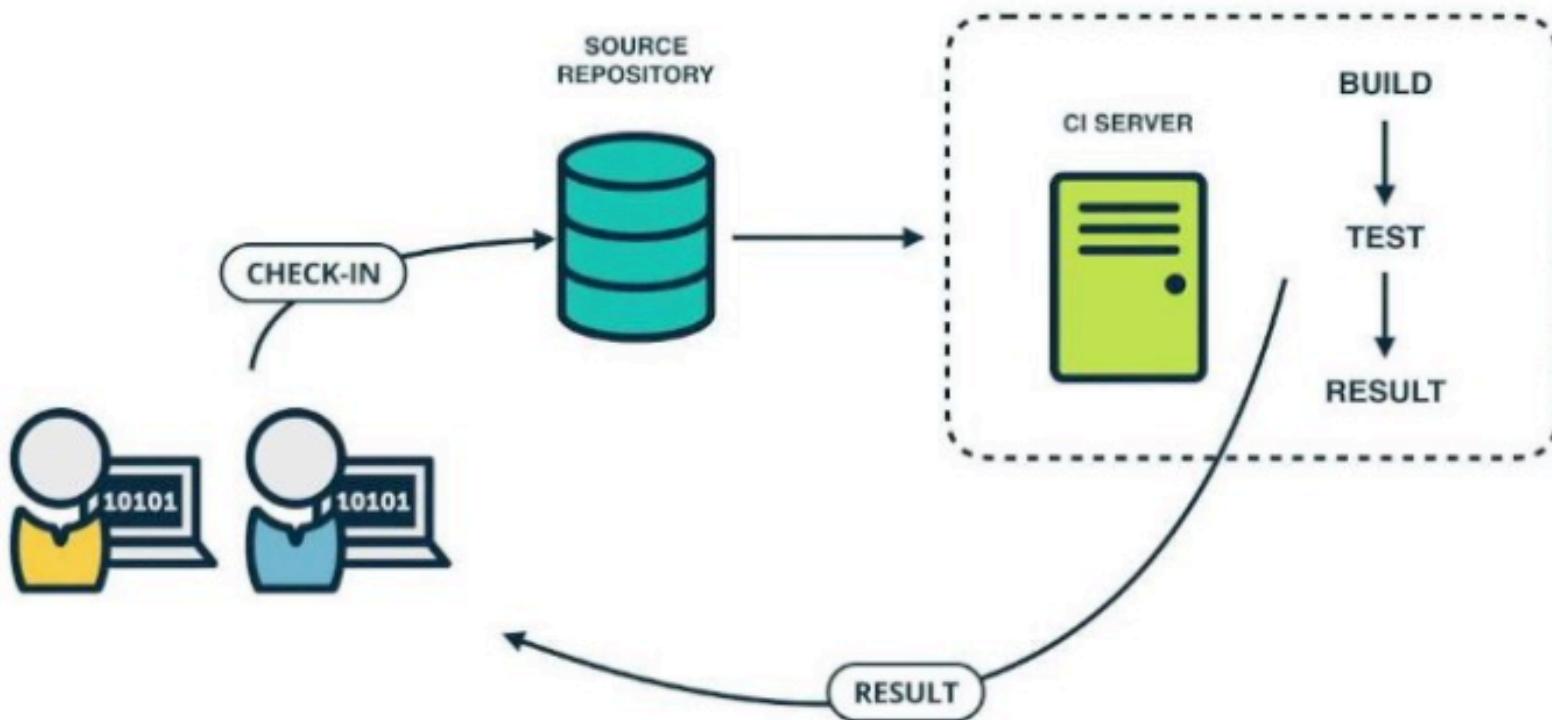


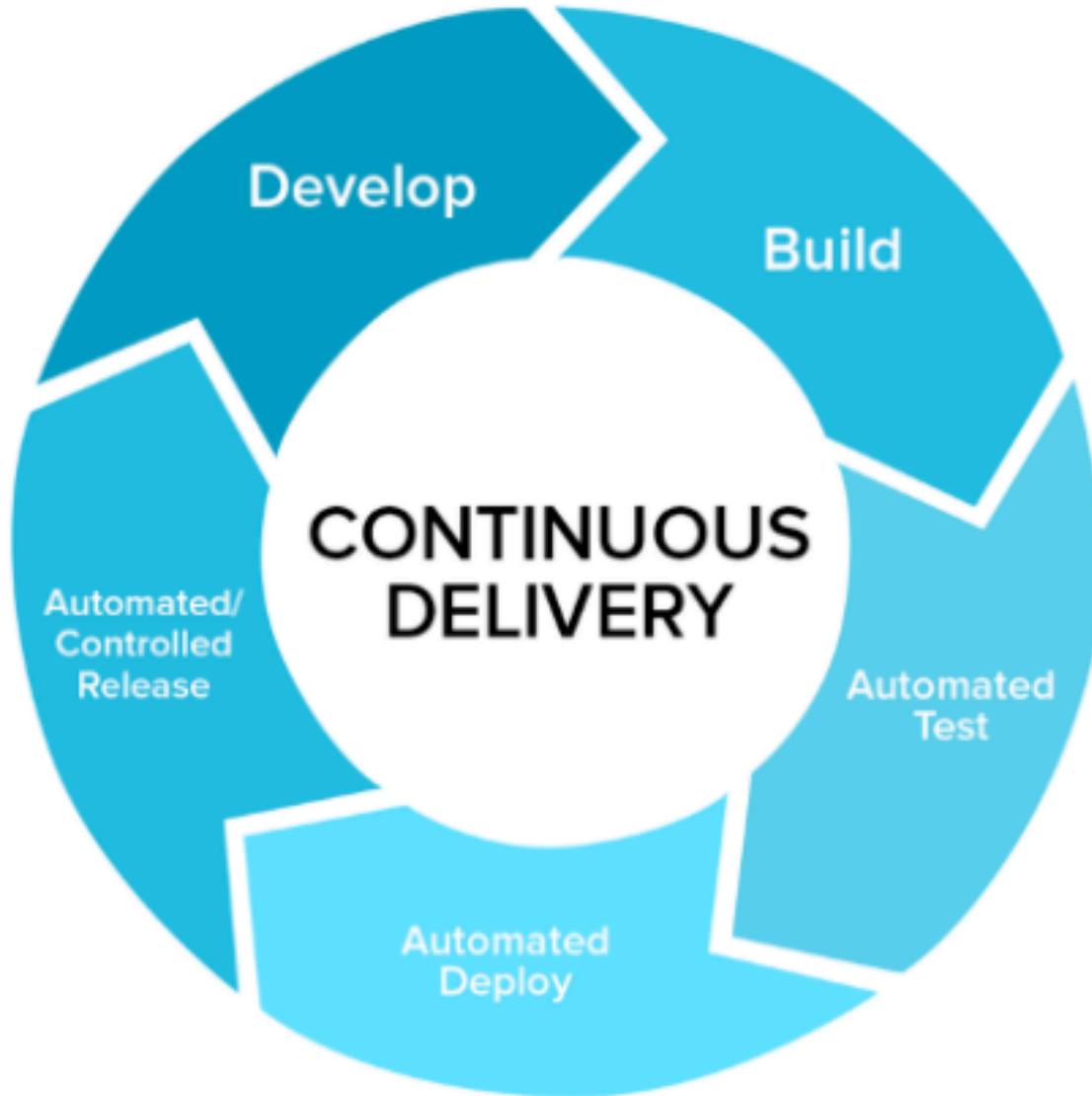
Agile + DevOps

Continuous Integration extended as Continuous Delivery



Continuous Integration (CI)





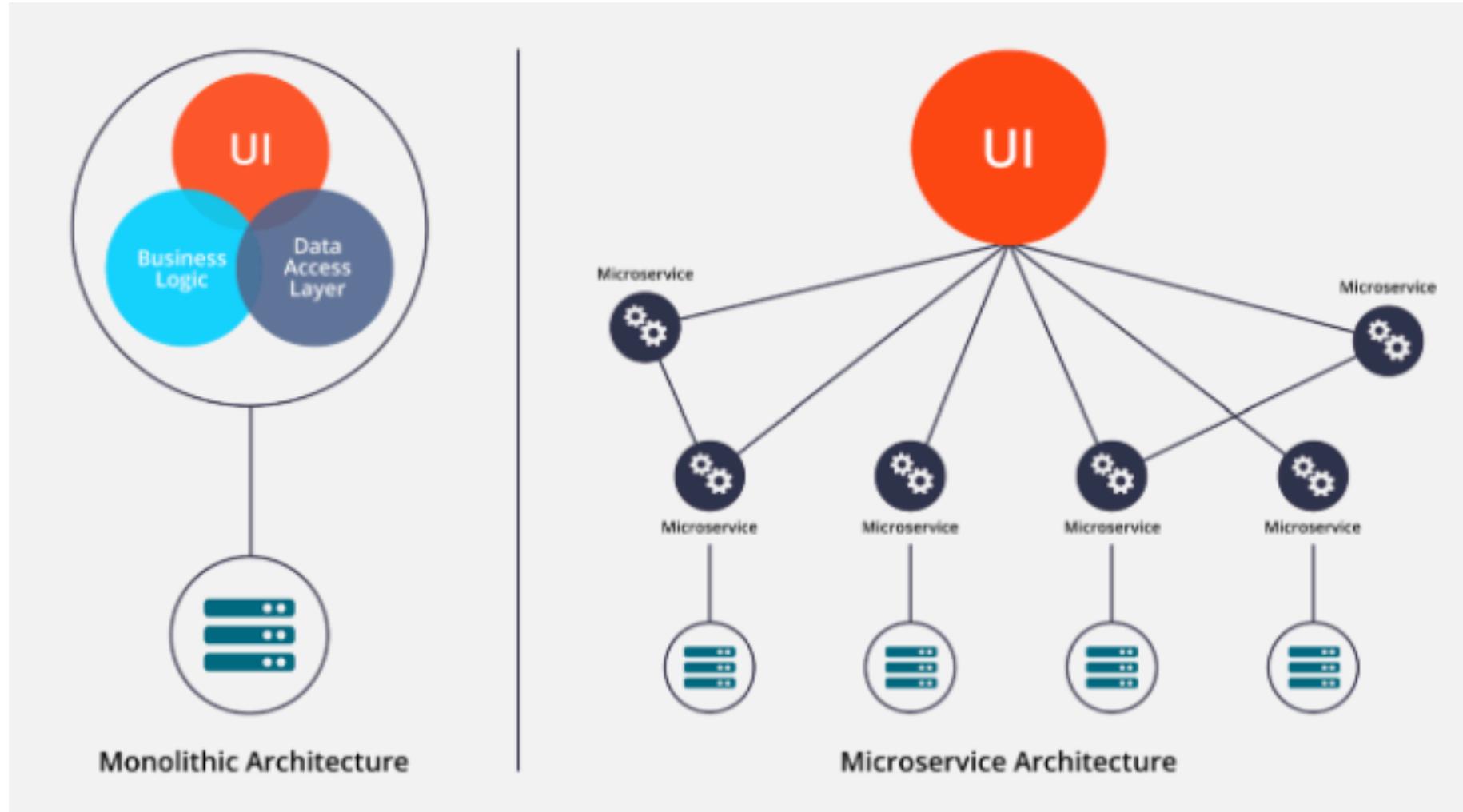
CONTINUOUS DELIVERY



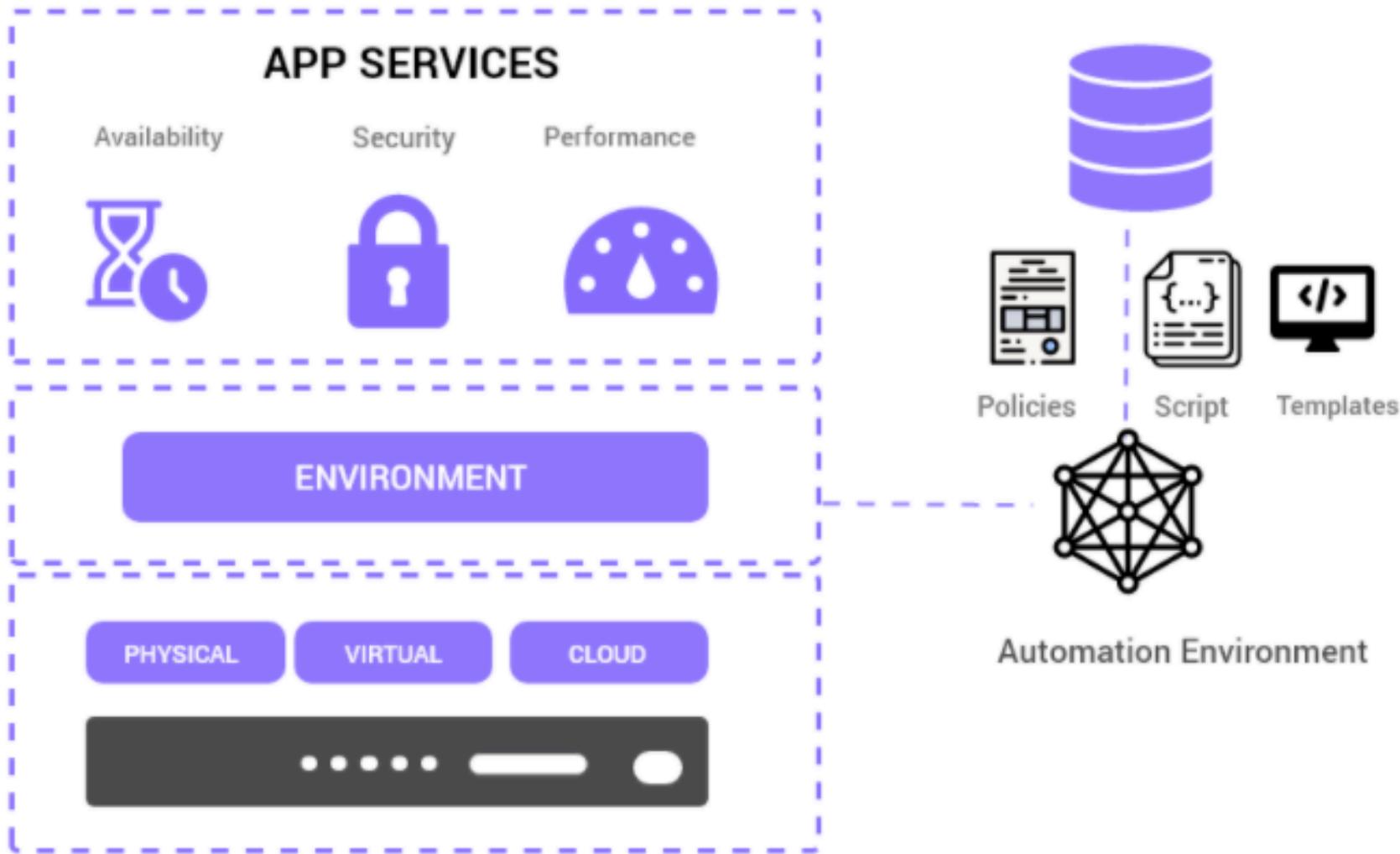
CONTINUOUS DEPLOYMENT



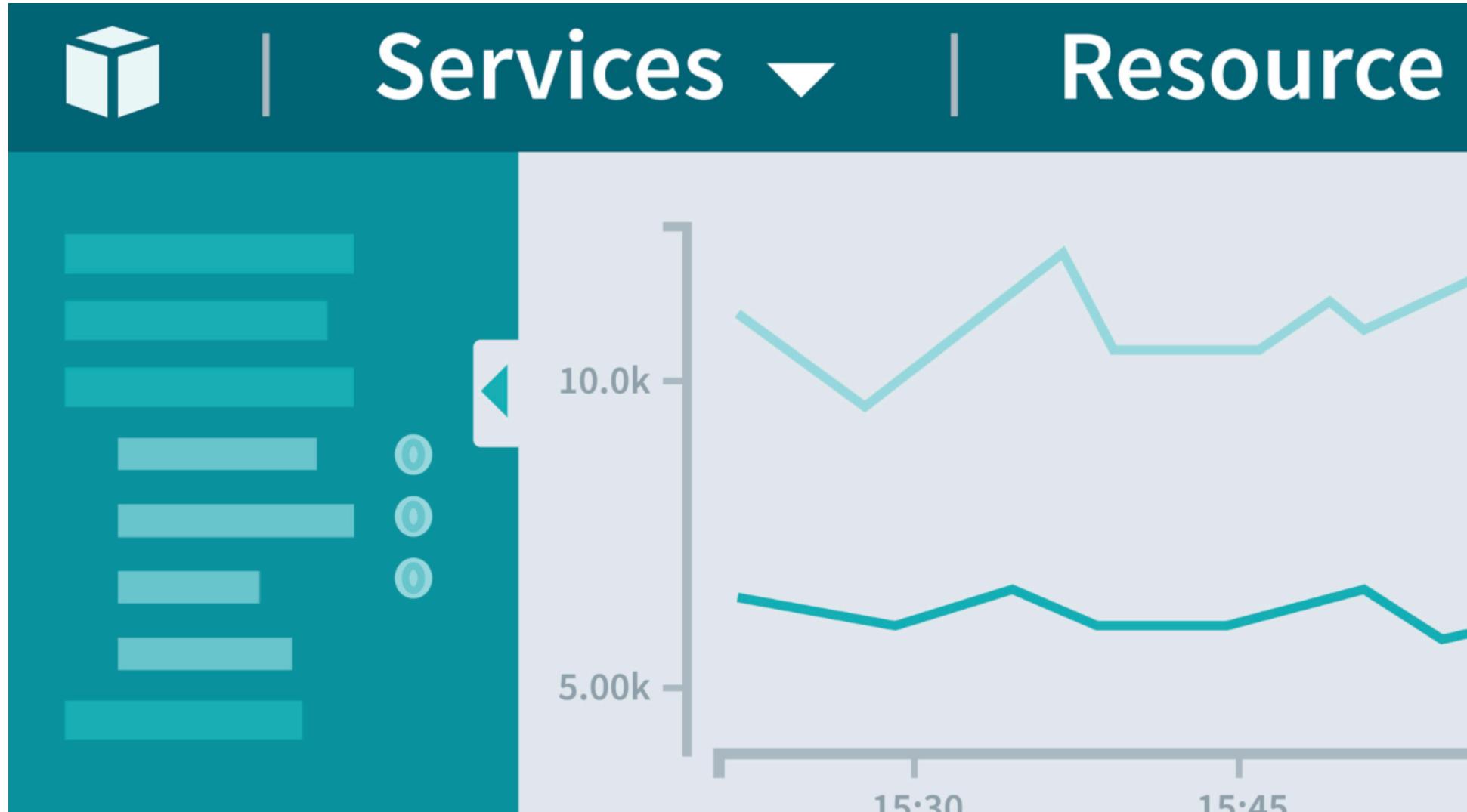
Microservices



Infrastructure as Code



Logging and Monitoring



Communication and Collaboration



DevOps Tools

- **Planning Tools :** JIRA, Redmine, Trac, Rally, dsb.
- **Building Tools :** Apache Maven, Apache Ant, Gulp, Travis CI, dsb.
- **CI/CD:** Jenkins, Bamboo, Circle CI, Travis CI, Codeship, dsb.
- **Version Control & Repository Tools:** Git, GitHub, Bitbucket, GitLab.
- **Configuration Management Tools:** Ansible, Salt, Chef, Puppet, dsb.
- **Container Tools:** Docker, Kubernetes, LXD, OpenVZ, Apache Mesos, dsb.
- **Monitoring Tools:** New Relic, ElasticSearch, Kibana, Graphite, Icinga, dsb.
- **Log Management Tools:** Graylog, Logsense, Sentry, Logstash, Loggly, dsb.
- **Communication/Collaboration Tools:** Asana, Slack, GoToMeeting, Trello dsb.

Gitlab, Auto DevOps

Features

Comprised of a set of [stages](#), Auto DevOps brings these best practices to your project in a simple and automatic way:

1. [Auto Build](#)
2. [Auto Test](#)
3. [Auto Code Quality](#)
4. [Auto SAST \(Static Application Security Testing\)](#)
5. [Auto Secret Detection](#)
6. [Auto Dependency Scanning](#) ⓘ
7. [Auto License Compliance](#) ⓘ
8. [Auto Container Scanning](#) ⓘ
9. [Auto Review Apps](#)
10. [Auto DAST \(Dynamic Application Security Testing\)](#) ⓘ
11. [Auto Deploy](#)
12. [Auto Browser Performance Testing](#) ⓘ
13. [Auto Monitoring](#)
14. [Auto Code Intelligence](#)

Delivery Challenges

- **Release Management**

Better understanding of risk, dependencies

- **Release/Deployment Coordination**

Better tracking of discrete activities, faster escalation of issue,
documented process control and granular reporting

- **Release/Deployment Automation**

Usually have existing automation but want to flexibly manage and
drive this automation that can be invoked by non-operations
resources in specific non-production environment

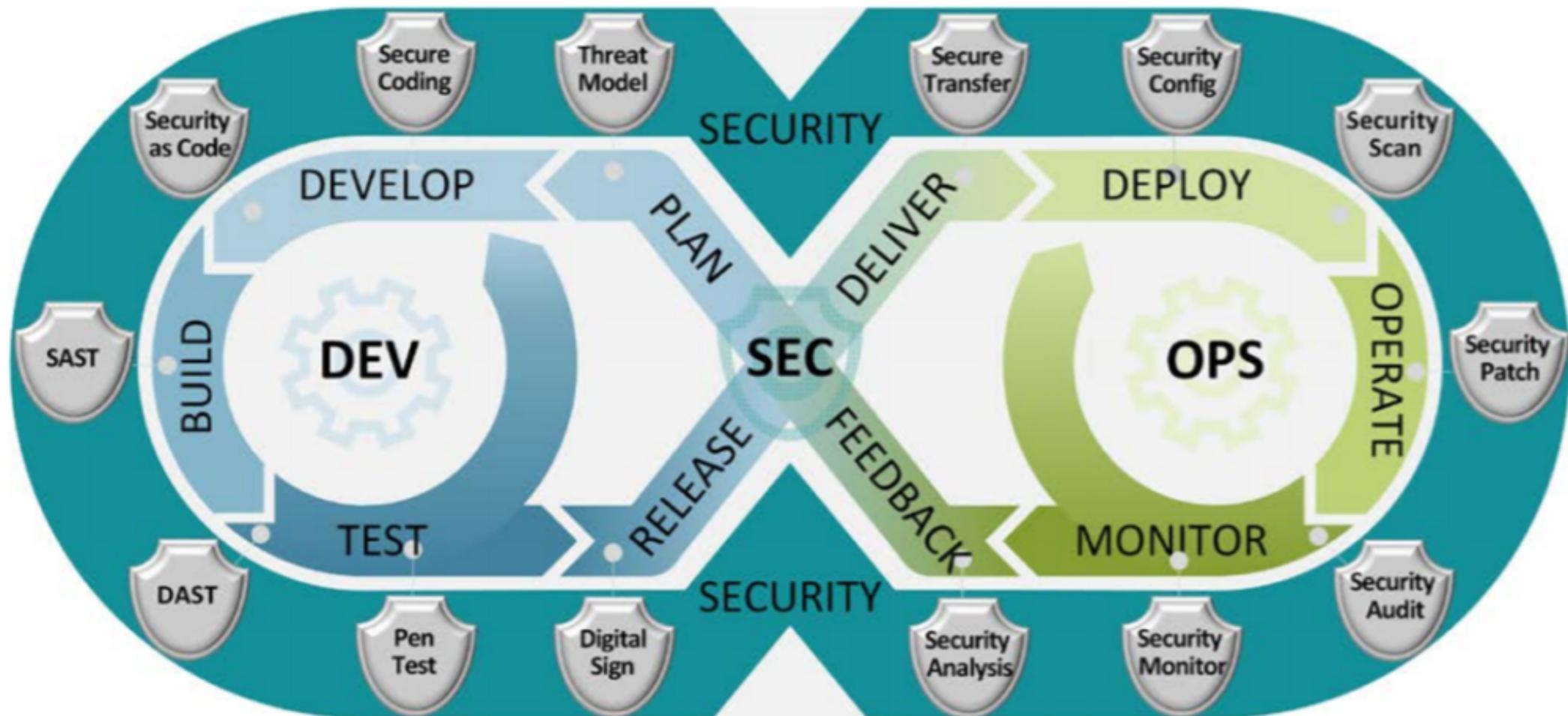
CULTURE

Not Just Tools

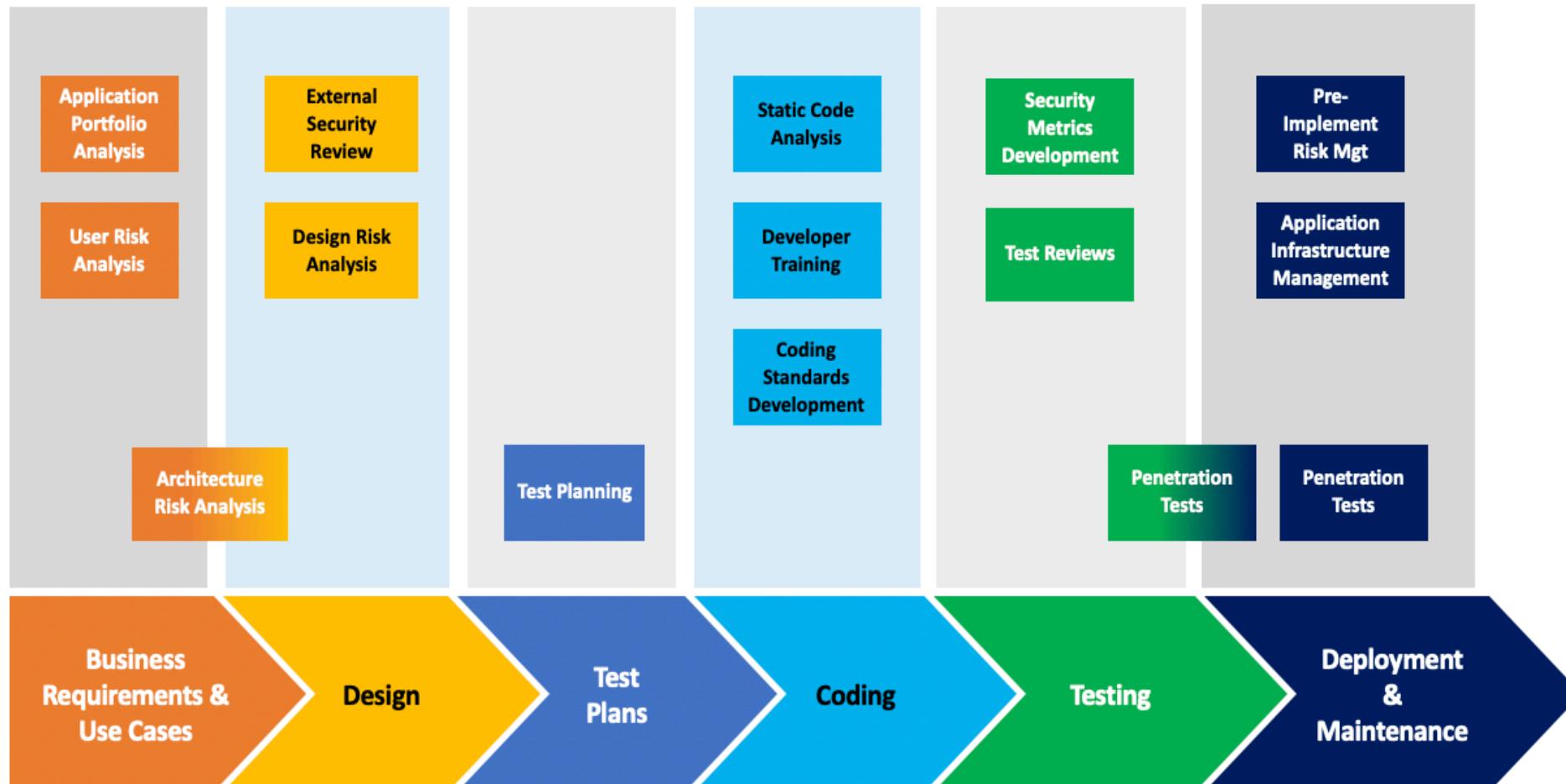
“You cannot buy DevOps and Install it. DevOps is not just automation or Infrastructure as Code. DevOps is people following a process enabled by products to deliver value to our and users.”

Donovan Brown - Senior DevOps Microsoft

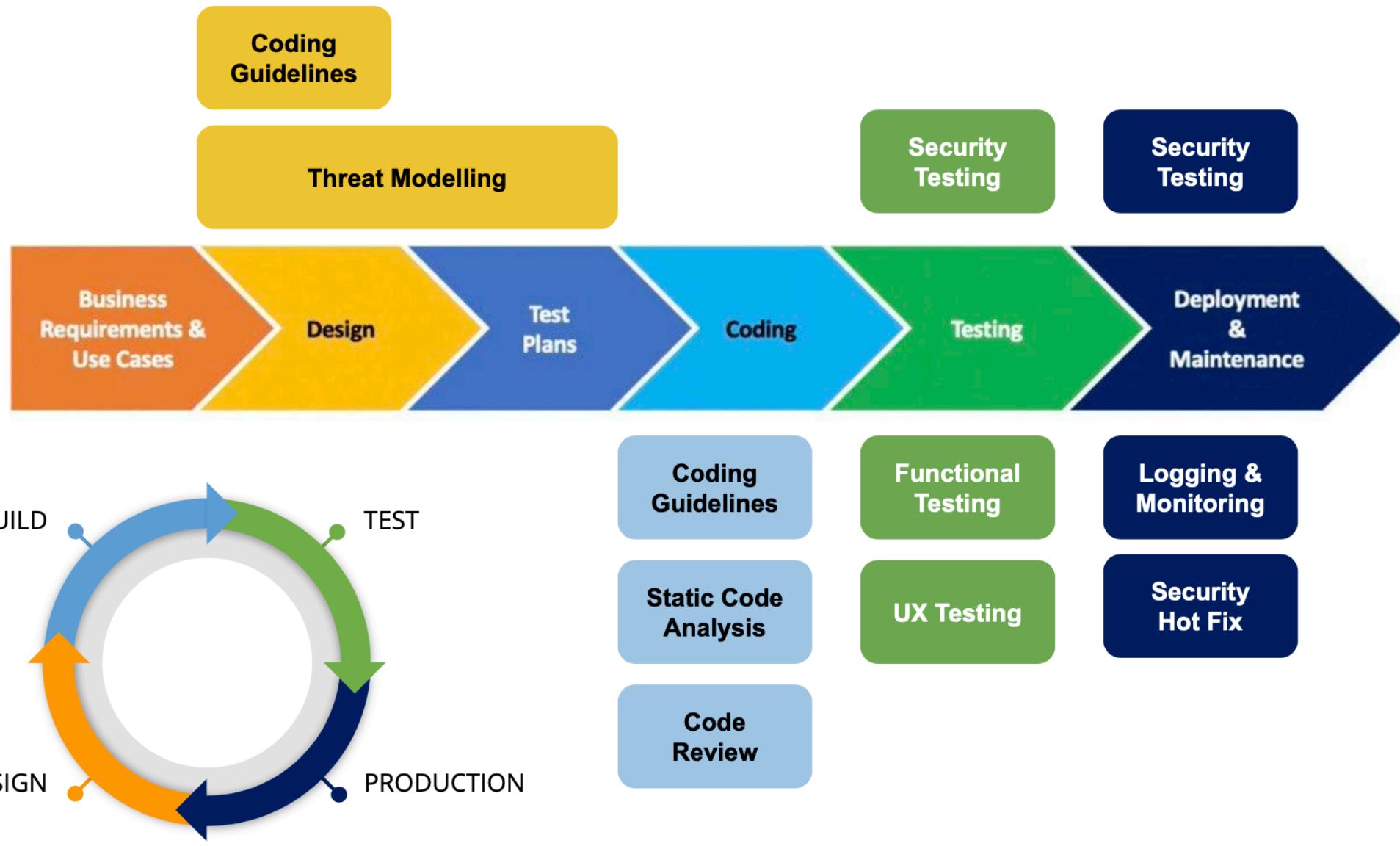
DevSecOps Software Lifecycle



Secure SDLC



Secure SDLC

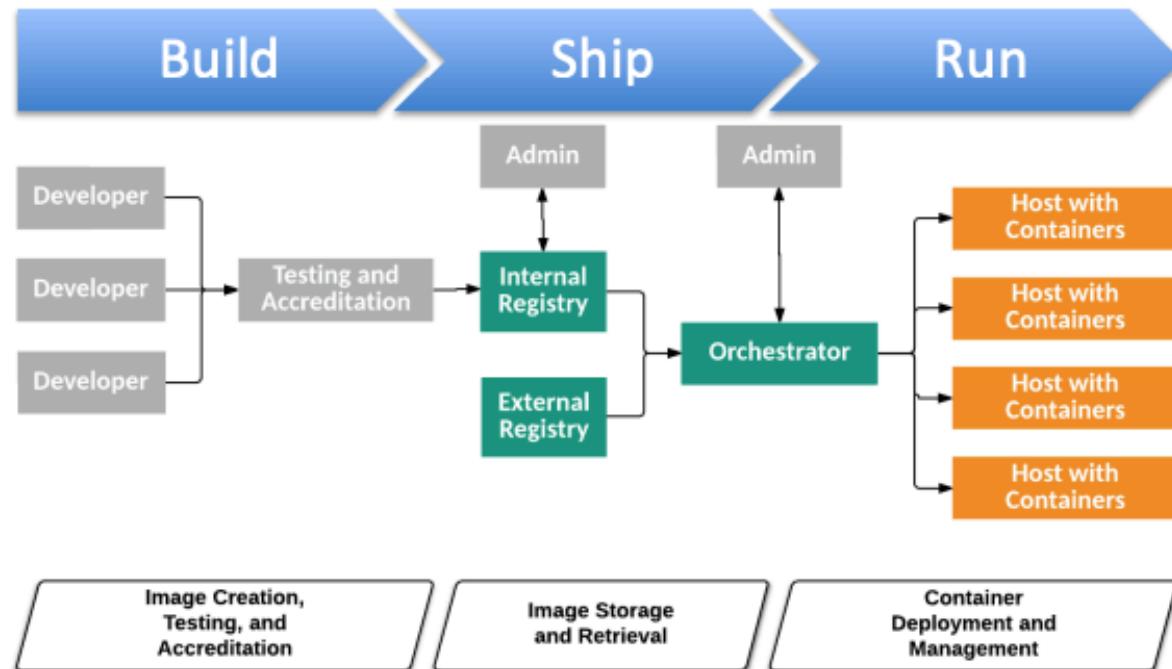


DevSecOps Standard ?



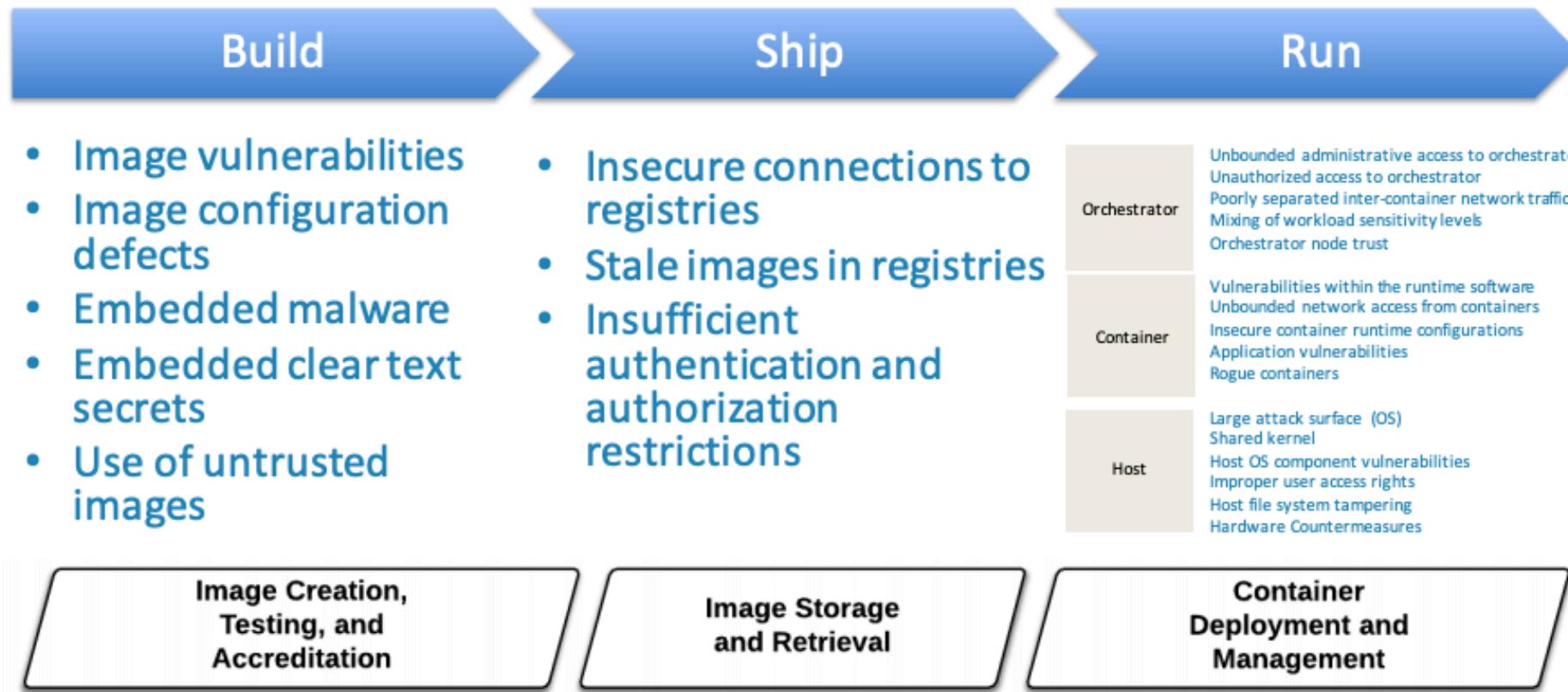
International
Organization for
Standardization

DevOps – Container Use Case



Modern container technologies have largely emerged along with the adoption of development and operations (DevOps) practices that seek to increase the integration between building and running apps, emphasizing close coordination between development and operational teams.

DevSecOps – Container Use Case



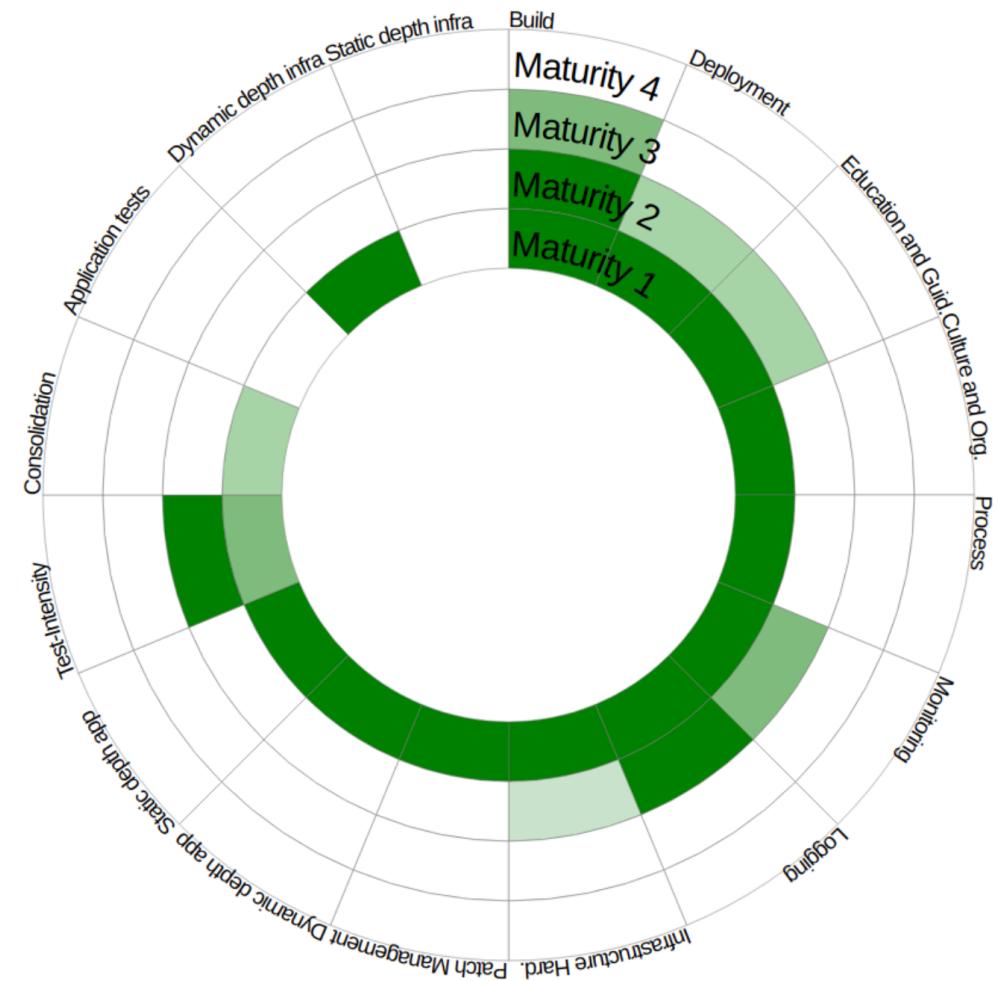
OWASP DevSecOps Maturity Model



Shows security measures which are applied when using DevOps strategies and how these can be prioritized.

Implementation Levels in DSOMM are

- **Level 1: Basic understanding of security practices**
- **Level 2: Adoption of basic security practices**
- **Level 3: High adoption of security practices**
- **Level 4: Advanced deployment of security practices at scale**



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