



# CLOUD-NATIVE DEVOPS CONCEPTS

## SPEED AND AGILITY

Release fast or be left behind

## SECURITY

Trust your software and release secure products

## QUALITY

Improve the quality of your processes and products

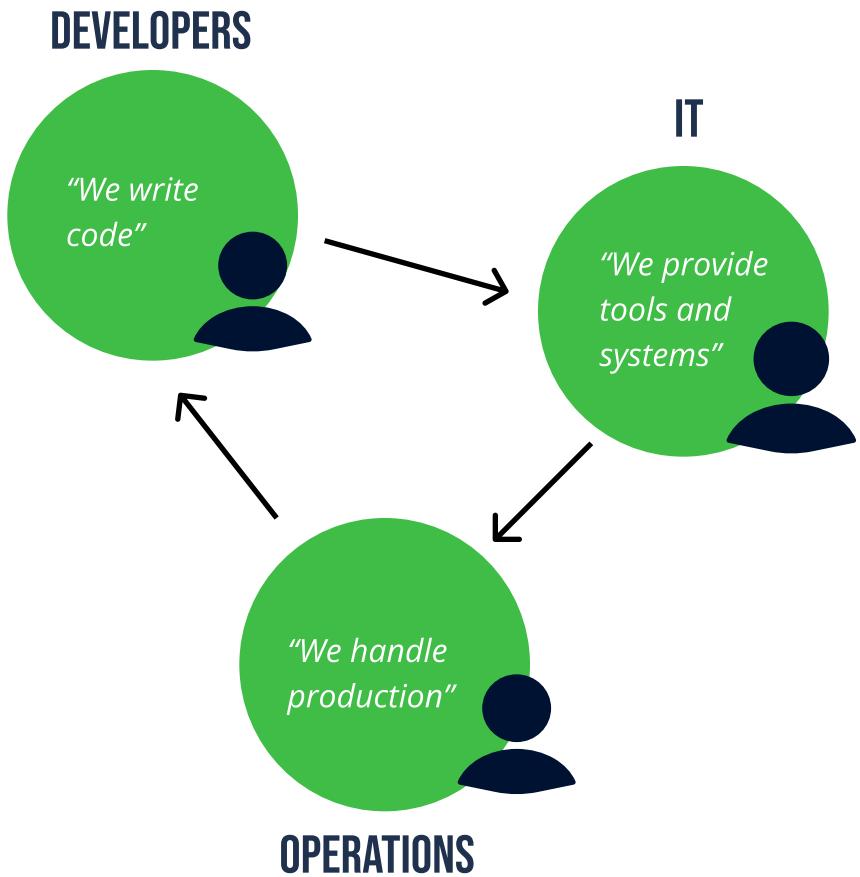
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# THE PROBLEM

For far too long, software development has been segmented into rigid patterns, each with their own specific goals and processes.

Without shared, common objectives the time to production is too long, too error prone, and filled with IT and Ops constraints.



# UNDERSTANDING & DEFINING DEVOPS

Everyone is talking about DevOps...but what exactly is DevOps?

DevOps is not a technology, it's an idea. It's a cultural shift from the previous process, that advocates a collaborative approach to software development, IT and system operations.

It's about taking down silos and streamlining processes to increase efficiency through automation, continuous feedback loops and learning.

By fostering a culture based on collaboration and communication DevOps helps teams deliver high-quality and secure software products faster and more reliably.

**D**riving a shared **culture**

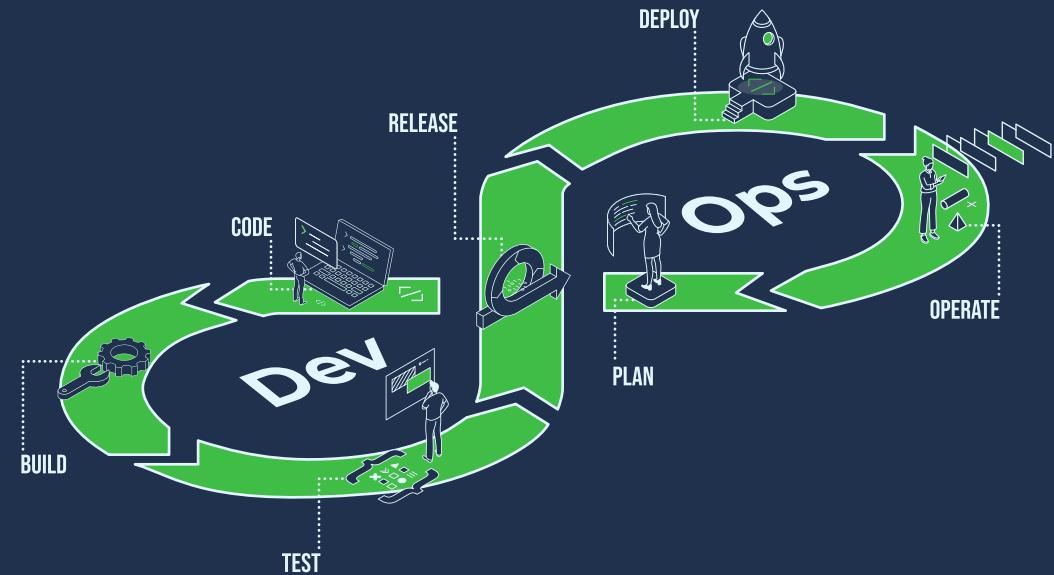
**E**stablishing **collaboration & communication**

**V**alidating **practices**

**O**pening doors to **automation**

**P**roviding software solutions **frequently**

**S**ustaining success **reliably**

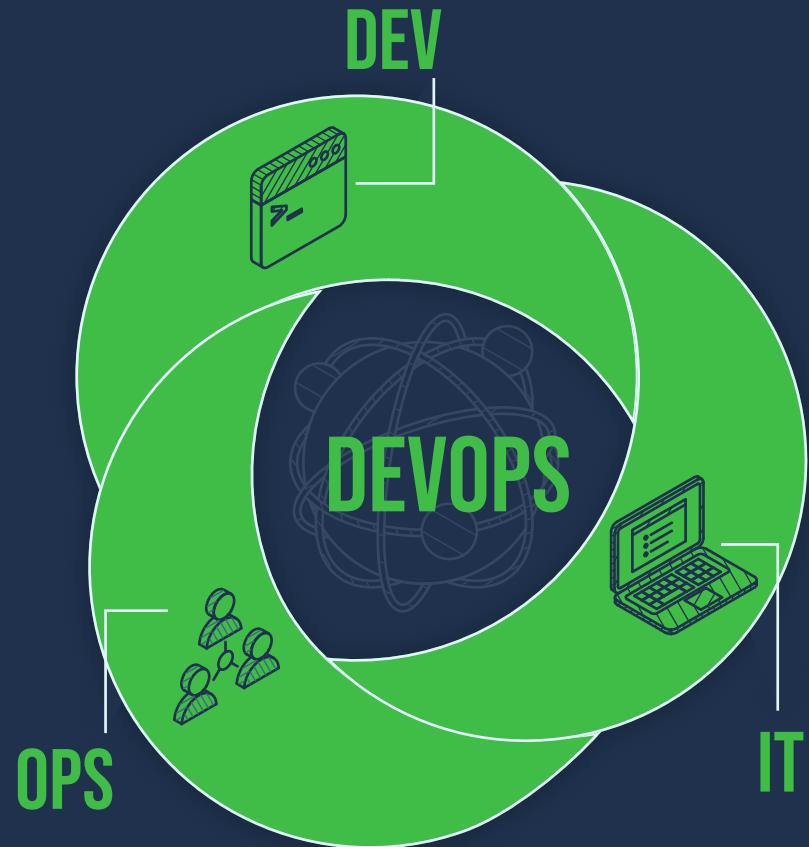


# THE SOLUTION

A common assumption to solve this issue is to merely merge each aspect together, but a better, more optimized solution is to create tight alignment and collaboration within the areas where each segment overlaps.

By doing so we improve the lines of communication, resulting in a far greater learning speed for everyone involved.

This is where **DevOps** lives, improving processes, time to production, and reducing errors using modern methodologies such as Agile.



# CLOUD-NATIVE APPROACH

In order to maximize the benefits of DevOps, a cloud-native approach to building, deploying, and managing modern applications within cloud computing environments can be very beneficial.

Since highly scalable, flexible, and resilient applications that can be updated quickly are in high demand, utilizing this modern technique to support application development within a cloud infrastructure produces the best results.

Cloud-native technologies support fast and frequent changes to applications without impacting service delivery, providing adopters with an innovative, competitive advantage.



**By utilizing cloud-native principles, you can create a leaner, more efficient process using/paying only for the services you need.**

# CLOUD-NATIVE BENEFITS

Establishing cloud-native practices can help you realize tremendous advantages.

## USE MICROSERVICES TO...

- **Increase agility** = faster times to release.
- **Isolate faults** = a smaller blast radius on errors.
- **Easily scale** = increase and decrease the size of just the relevant service.
- Decouple application concerns.

## APPLY OBSERVABILITY FROM THE BEGINNING TO...

- Get real time data of the state of your applications.
- Catch errors early.
- Apply alerting.

## USE CONTAINERS AS YOUR RUN TIME TO...

- Easy coupling of your service dependencies.
- Build once, use anywhere.
- Harness popular runtime like Kubernetes to run your containers.

## UTILIZE INFRASTRUCTURE AS A CODE (IAC) TO...

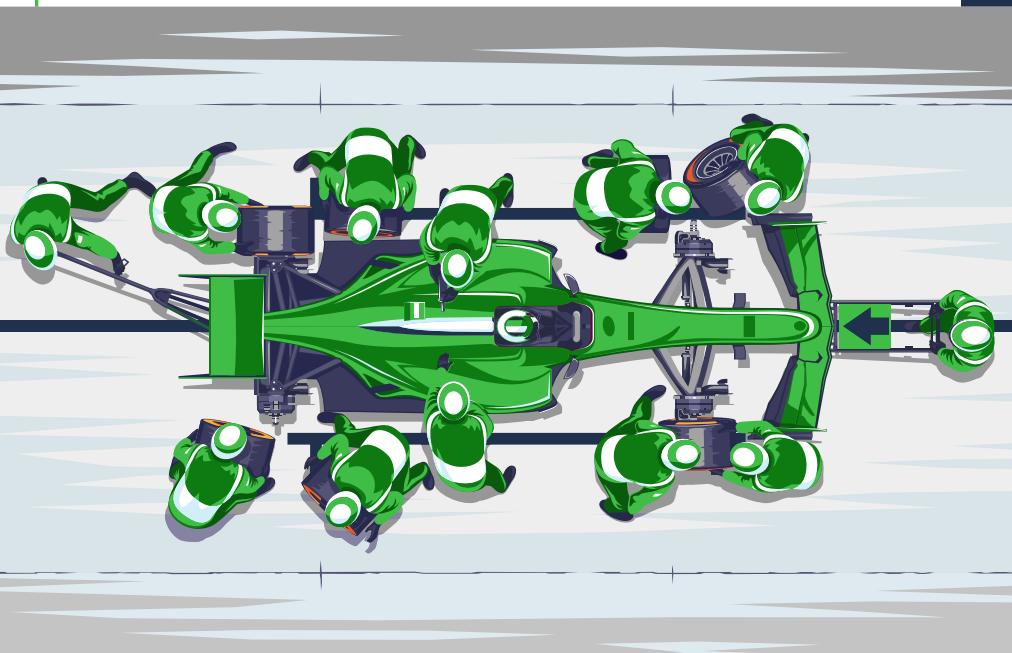
- Describe, define and apply your infrastructure in a cloud environment (Terraform, Crossplane etc.).
- No longer require manual adjustments of infrastructure.
- Pull requests and code reviews on every change.
- Manage infrastructure elements as source code.

## HARNESS MANAGED SERVICES & AUTOMATION TO...

- Focus on what you do best and delegate the rest to the service provider's managed services.
- Better utilize databases, networking, storage, runtime etc.
- **Never have to manually work on infrastructure again!**

# THE DEVOPS DIFFERENCE

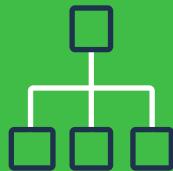
Much like a **Formula 1** pit crew seamlessly combines the essential elements of speed and trust, the same can be said for effective DevOps culture.



## EVERYONE MUST BE COMMITTED TO WORKING TOGETHER TO ACHIEVE A COMMON GOAL...

- Performing their best in tight collaboration between developers and operations.
- Thinking systematically as a group rather than individuals.
  - Dev understanding Ops & Ops understanding Dev.
- Utilizing automation for continuous integration, delivery & deployment.

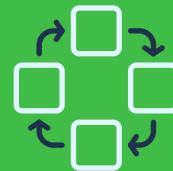
## PUTTING DEVOPS INTO PRACTICE



Always maintain version control across code, configuration and settings



Keep both Developers and Ops personnel involved at all times



Adhere to agile methodologies for infrastructure changes, testing everything



Continually integrate/deliver/ deploy changes using the CI/CD pipe



Automate testing at all stages and ensure all tools and platforms are unified



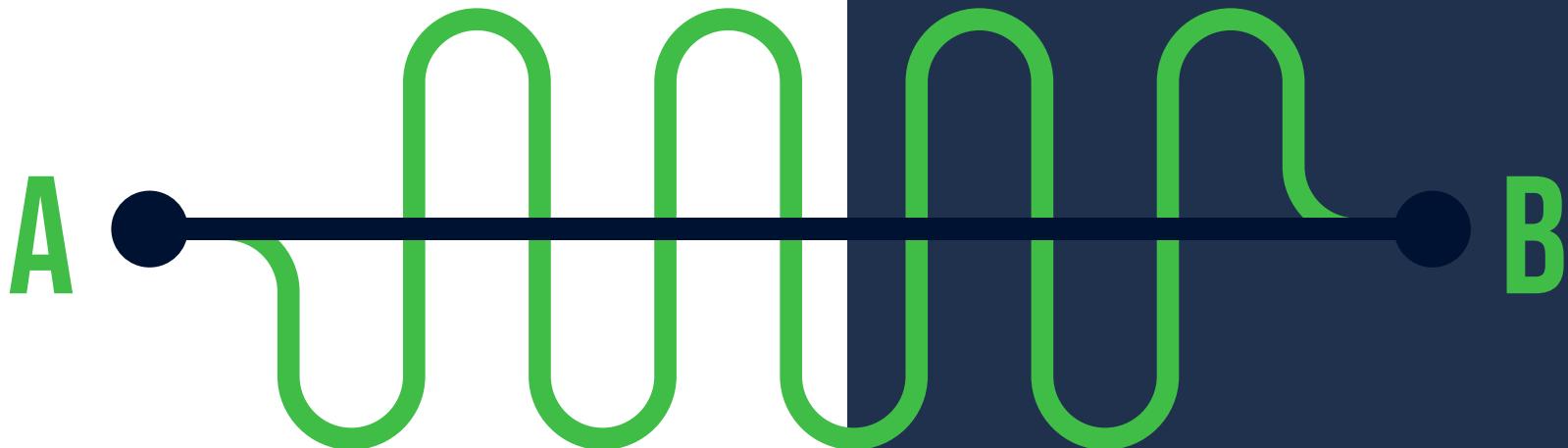
**Maintain laser focus on security at every stage!**

# DEVOPS JOURNEY

It's important to remember that DevOps is not a destination, it's a **continuous** process that never ends. No matter how many new and shiny tools you have, without a defined process aligned with your specific goals you'll never achieve the benefits of effective DevOps.

Define your end-to-end process, then plan and execute while understanding that improvement in itself **is also a process**, but one that can be measured and revisited over time.

Once you establish a firm DevOps foundation, you'll enjoy the benefits of an infinity loop of success as you continually execute, debrief and learn while improving processes and learning for the next iteration.



# DEVOPS BOTTOM LINE

Consistently successful and efficient solutions are not merely built by organizations.

They're built by individuals working together as a cohesive unit, aligned with the common goal of achieving mutual and sustained success.

It all begins by establishing a DevOps culture that is based on three key goals...

**It's all possible by implementing a sustainable culture of DevOps excellence.**

## SPEED AND AGILITY

Release fast or be left behind

## SECURITY

Trust your software and release secure products

## QUALITY

Improve the quality of your processes and products

In the world of DevOps, there's a lot of room for risk. Whether it's sketchy open source code or out-of-sync Dev, Sec, Ops, and AI/ML teams, risk can lead to subpar software releases and end-user downtime.

But there's a better way to work. With JFrog, processes and people operate within a single end-to-end system—providing your teams with the visibility, control, security, and automation they need to innovate without fear of failure.

Trusted by the majority of Fortune 100 enterprises, our complete DevSecOps product suite brings your teams together into one source of truth to create better products and a better world. Our products give you the confidence to take on every innovative idea you dream up.  
With us, you can expect excellence.



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