# So What Is DevSecOps?

**@linux_girl**

January 29, 2022

- Handle: linux_girl
- Cybersecurity engineer (one of my hats)
- Background: software engineering and cybersecurity
- Fun: nature, travel and work out
- Interesting Facts: childhood in Asia, all teenager years in Europe, and adulthood in the US
- Volunteer – Women's Society of Cyberjutsu (WSC)

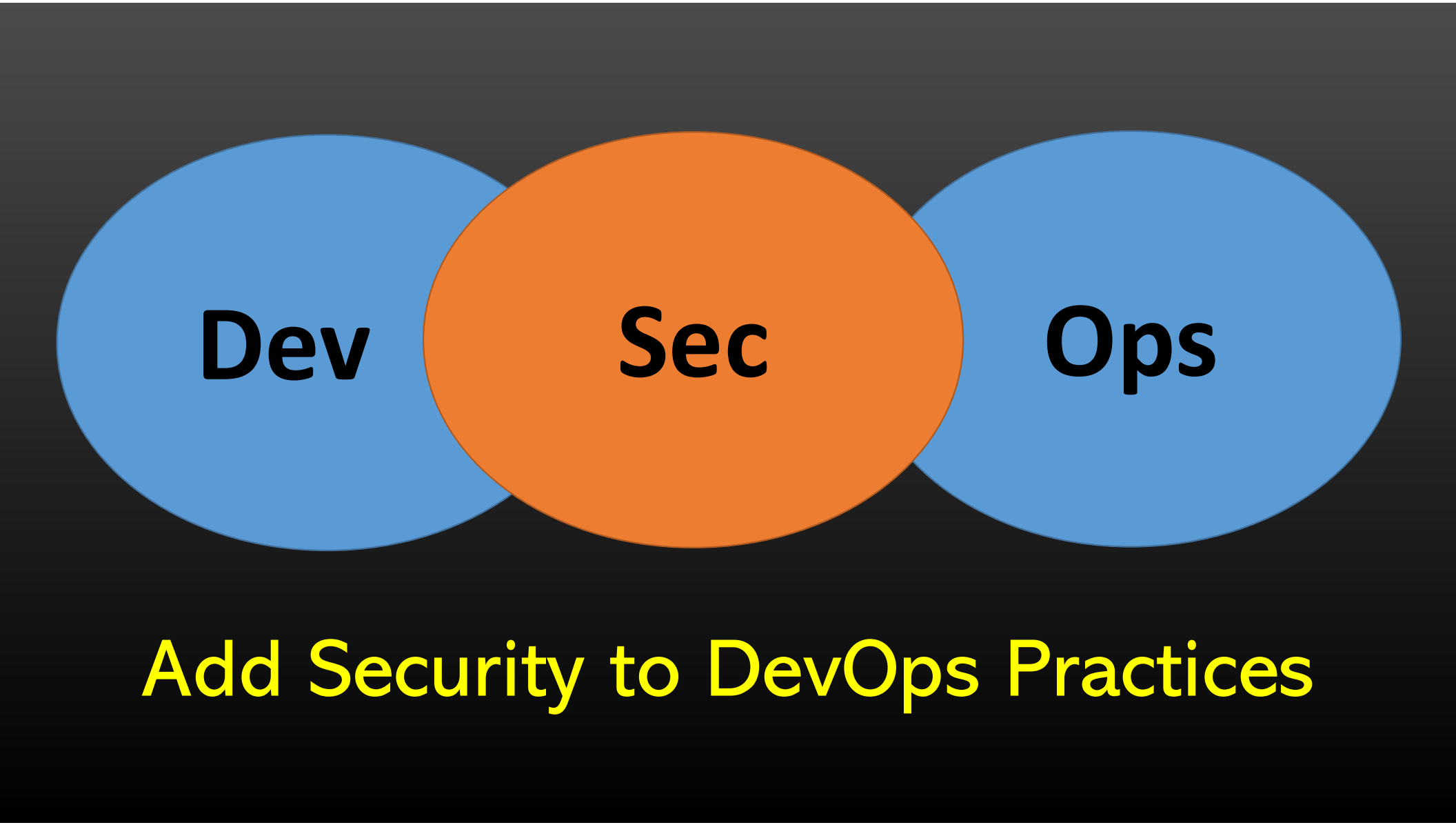
WOMEN'S SOCIETY OF CYBERJUTSU

Source: https://www.signiant.com/wp-content/uploads/2016/01/Dover-Castle1.jpg

# Multi-layered Security: Defense in Depth


https://images.squarespace-cdn.com/content/53f6474fe4b0103eb124efb7/1489407904886-ENPGH146T90V7BNYEBV2/whats+in+it+for+me.png?format=1500w&content-type=image%2Fpng

*Do you want to **continuously** to develop software that has been tested for the security vulnerabilities? Also, it is more secure and pass compliance audits*


Dev
Sec
Ops
Add Security to DevOps Practices

# Pre-DevOps – Typical Software Lifecycle

Step 1: Developers:

- Package an application with documentation
- Ship it to a Quality Assurance (QA) team

Step 2: QA Team:

- Install software
- Test software

Step 3: Production Operations Team:

- Deploy software
- Manage software
- Little-to-no direct interaction

*Source: https://www.xoombi.com/blog/5-ways-to-develop-an-unoffendable-attitude*


WORKED FINE IN DEV
OPS PROBLEM NOW
memegenerator.net

DEV


COMMUNICATION

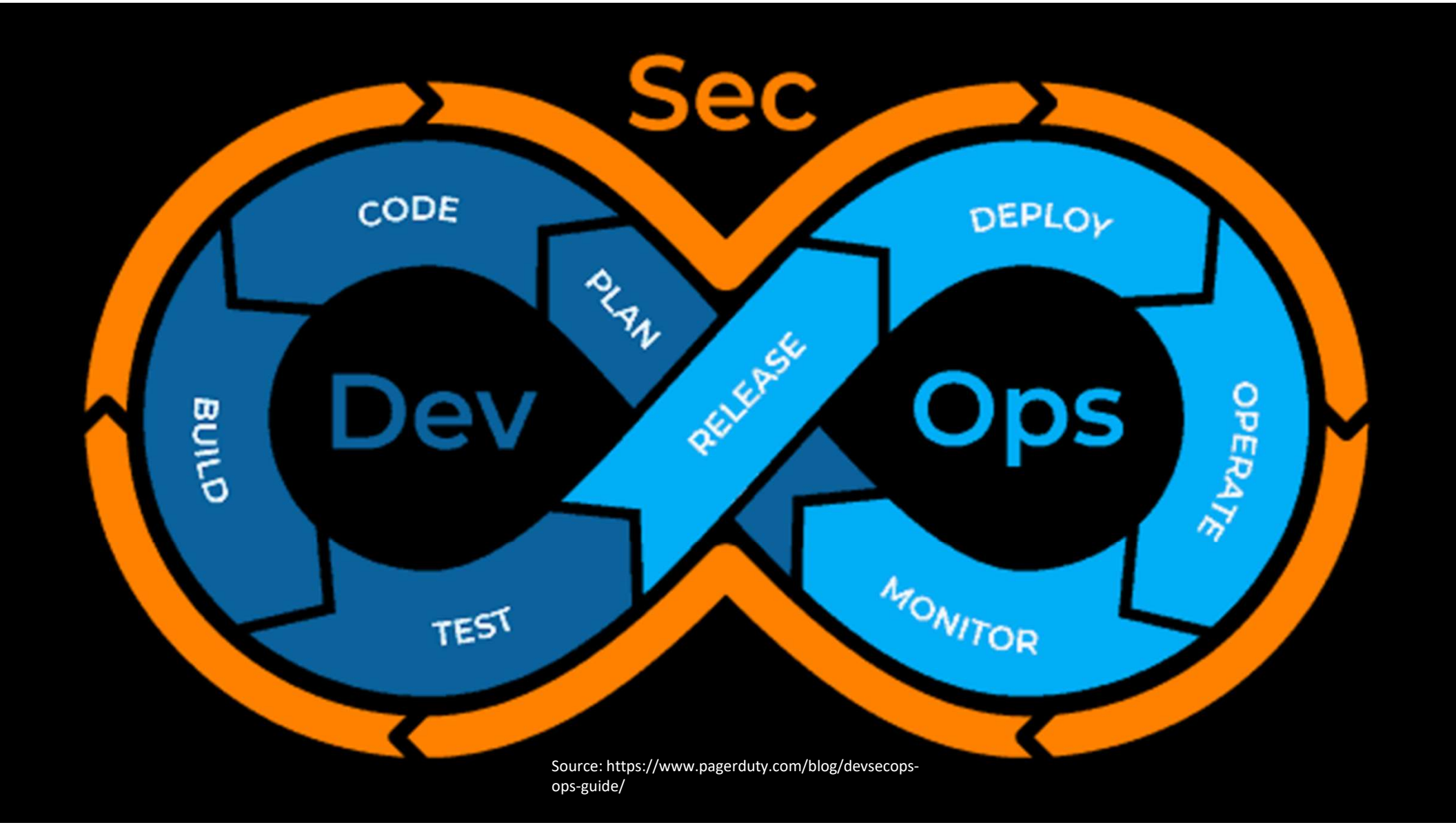
COLLABORATION

INTEGRATION

OPS

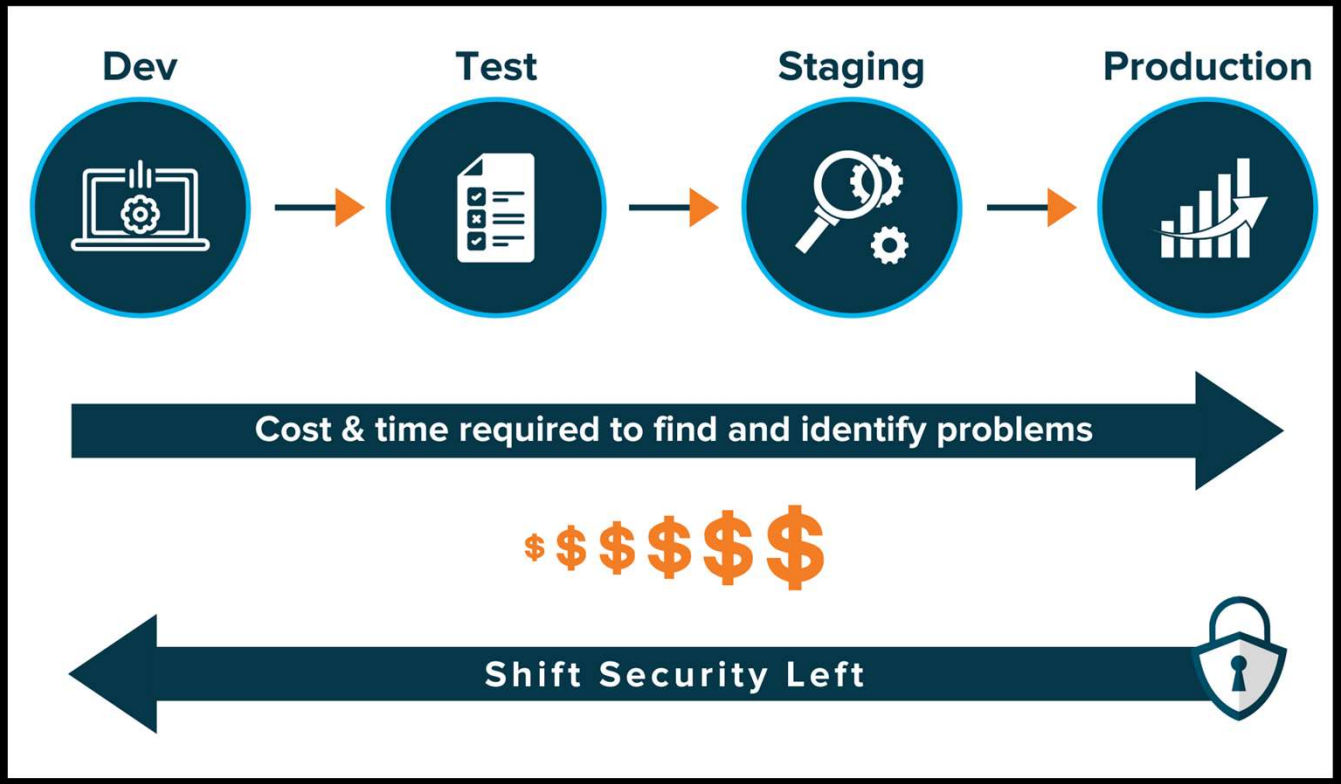

Source: https://dribbble.com/shots/3848914-Programmer-Thomas

Source: https://cdn0.iconfinder.com/data/icons/female-professionals-flat/48/Female-37-512.png




Source: https://www.pagerduty.com/blog/devsecops-ops-guide/

# What is Shifting Left?




*Source: https://www.klogixsecurity.com/hs-fs/hubfs/Shift%20Left.png?width=1984&name=Shift%20Left.png*

# Build Security In From the Very Start of a Project

- Build it like your *mother* is going to have to use it
- Built it as if attackers *are* going to come and *tear* it to shreds because they will.
- Build it with insight and foresight: this is your baby, don't make it ugly

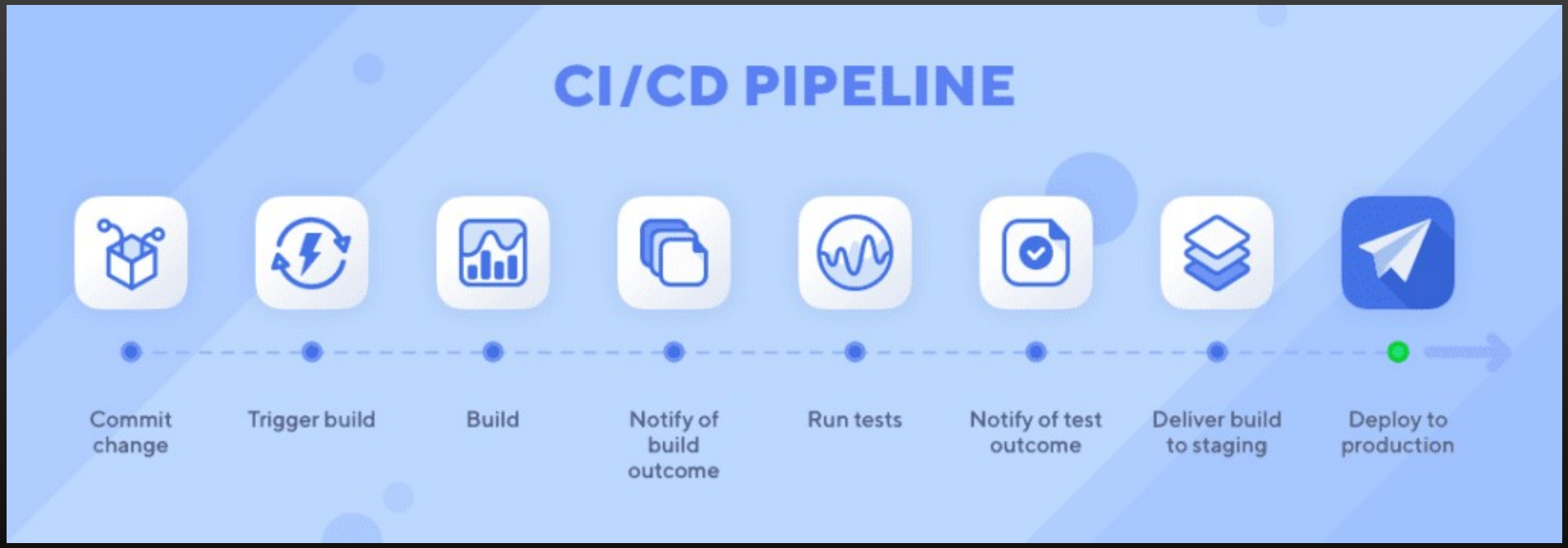
*Source: Epic Failures in DevSecOps Volume 1 Provided Courtesy of Sonatype for DevSecOps Days*

# What is CI/CD Pipeline?

- Continuous Integration (**CI**)
  - Set of Practices to create Consistent and Automated Way to build, Package and Test Applications
- Continuous Testing
- Continuous Delivery
- Continuous Deployment (**CD**)
  - Automated release code changes to end-users after passing a series of predefined tests
- Organized into a Pipeline
- Produce High-Quality Software and Application Development

# Role of CI/CD Pipeline in DevSecOps

1. Continuous Integration (**CI**)
   A. Continuous verify software integrity
2. Continuous Deployment (**CD**)
   A. Deploy code and package for mass consumption
3. Setup a pipeline – for automation
4. Maintain a DevSecOps Philosophy Can Help Ensure Your CI/CD Pipeline Runs Smoothly




*Source: https://d1h3p5fzmizjvp.cloudfront.net/wp-content/uploads/2019/08/29115129/CICD-pipeline-1024x354.png*

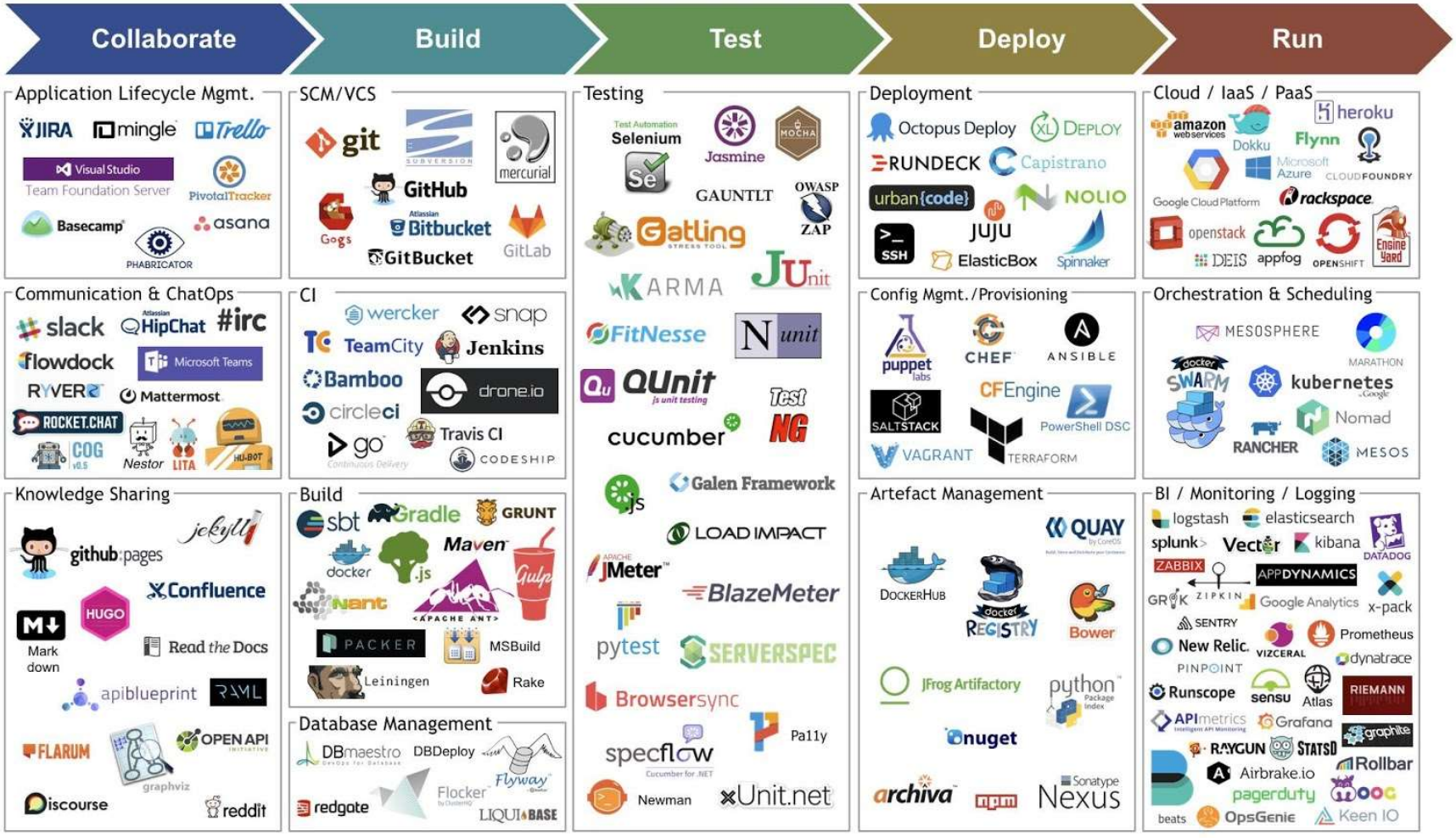
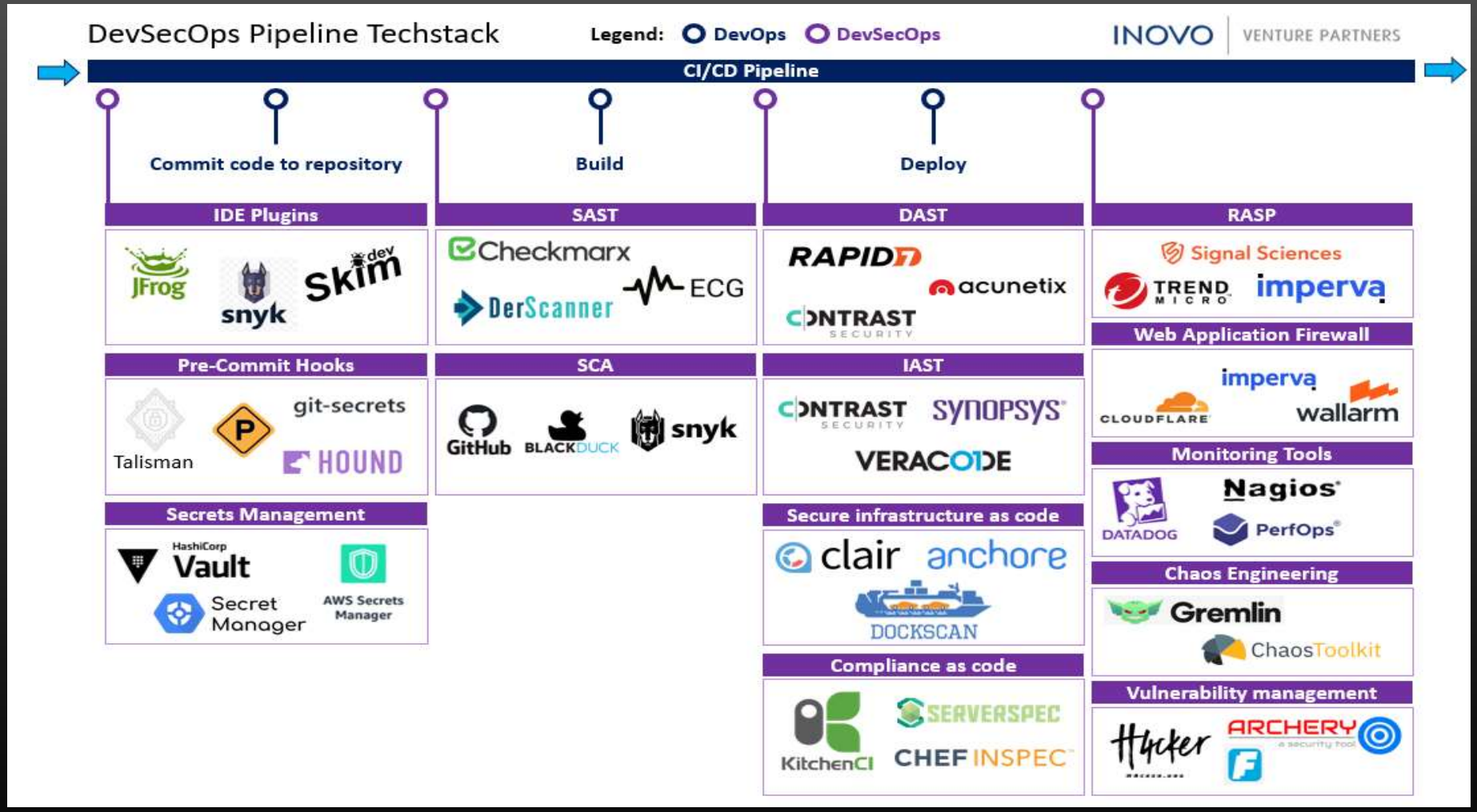
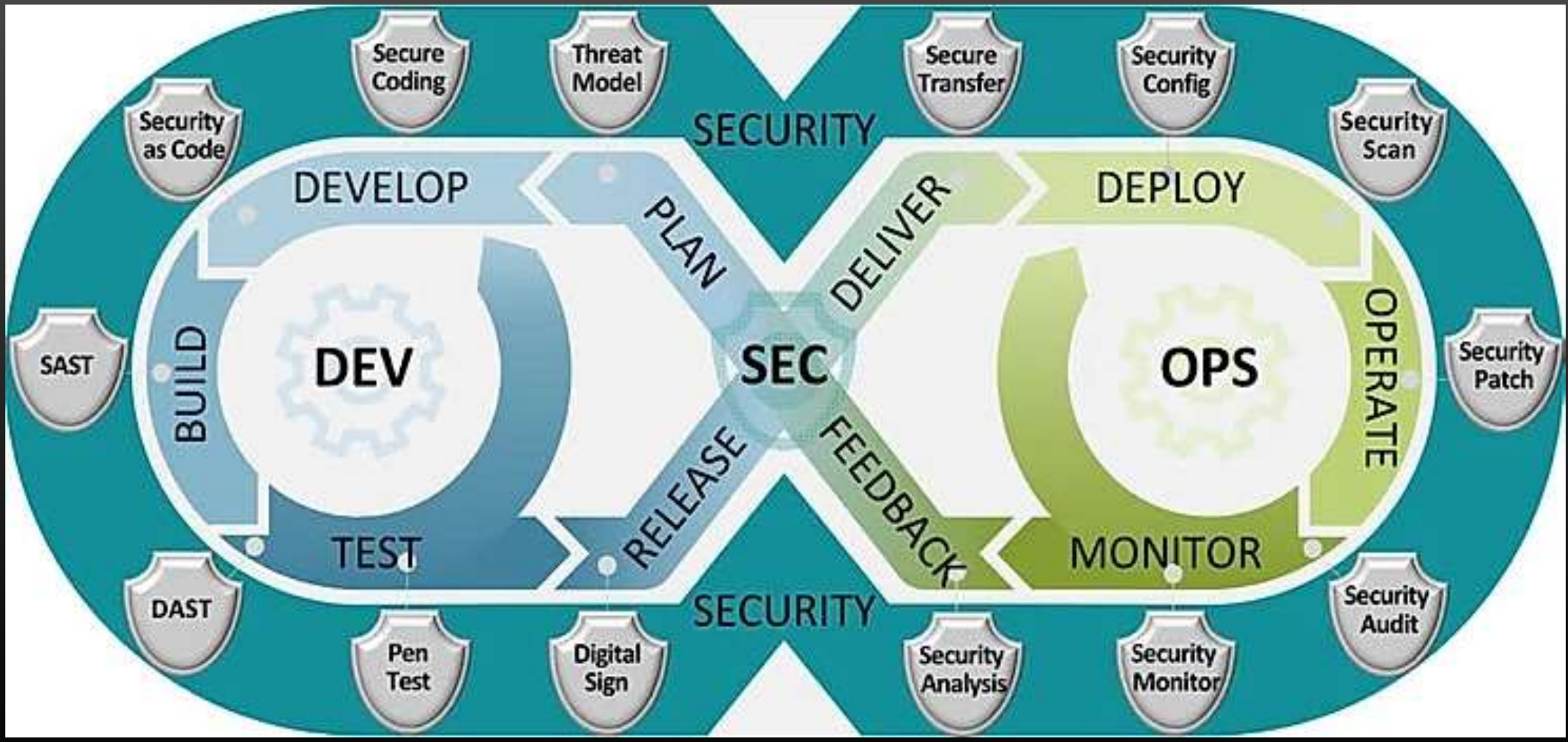



*Image Source: https://4.bp.blogspot.com/-XHdtYzIyMOE/WOS0bhrBldI/AAAAAAAAWiM/OIyla8KCSQIShpDVKA2F5AMQHoH8WcDKQCLcB/s1600/DevOps%2Ball%2Bpicture.jpeg*




*Source: https://miro.medium.com/max/2216/1*wcJfi99MfkOHB7JM5bhk5w.png*




*Source: https://static.wixstatic.com/media/8b2318_fff27413c5b64d07ba7e4c250b0a547c~mv2.png/v1/fit/w_740%2Ch_337%2Cal_c/file.png*

# Why did I Decide to Enroll in the Caltech DevOps Post Graduate Program?

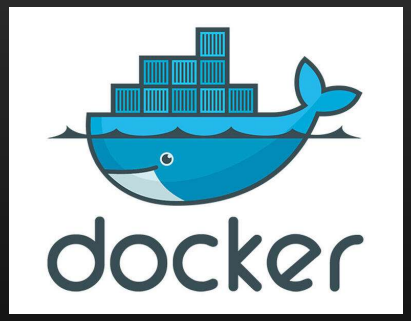
My company is adopting the DevSecOps framework

I wanted to learn what the DevOps engineers are doing

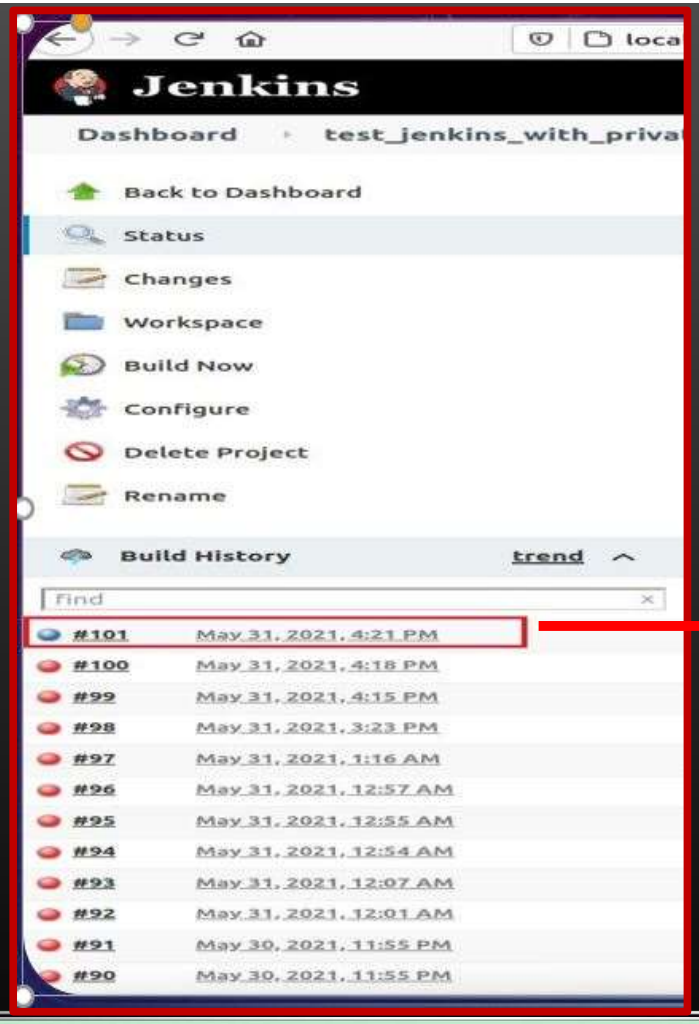
# The Tools that We Learned (Nov 2020 – June 2021):










Yes! After the 101st build – I got the blue bulb!!!

**Well done!** You've successfully completed this project.

Congratulations!! Your Project has been successfully evaluated and approved. All the screenshots attached were well explained and clear.

# Key Takeaways

- Security becomes INTRINSIC part of the application life cycle
- Technologies, Techniques, and Culture of Collaboration
  - Work together – enhancing security
  - There will be challenges!
- No Magic Bullet
- Finding the Right Tools for Automation is Not EASY
  - Business Processes
  - Technology Stack
  - We Love Our Tools – integration, maintenance, configuration and training
- Security Training
  - Maybe demo a cross site scripting attack?
- Cross Functional Empathy ---- What? What is this?
- Already Implementing DevOps, Then Consider DevSecOps

+

PERSISTENCE.


Sahil
@shl
Don't think you deserve the job? Apply for it anyways.
Don't think your article is good enough? Publish it anyways.
Don't think they'll reply to your email? Send it anyways.
Don't self-reject.


Source: https://www.bcpft.nhs.uk/images/stories/news/We_Need_You_-_AGM_and_Annual_Members_Event_-_reduced.jpg

# Thank You!!

*linux_girl*

# Resources

- DevSecOps Manifesto https://www.devsecops.org/
- DevSecOps Projects https://devsecops.github.io/
- DevSecOps Presentations https://www.devsecops.org/presentations
- The Phoenix Project https://www.amazon.com/The-Phoenix-Project-audiobook/dp/B00VATFAMI/ref=sr_1_5?keywords=devops+books&qid=1642882551&sr=8-5
- DevSecOps Days Events https://www.devsecopsdays.com/
- Top 10 DevOps Tools to Look For in 2022 https://hackr.io/blog/top-devops-tools
- Epic Failures in DevSecOps Volume 1 https://www.sonatype.com/resources/white-paper-epic-failures-in-devsecops-volume-1
- Epic Failures in DevSecOps Volume 2 https://www.sonatype.com/resources/white-paper-epic-failures-in-devsecops-volume-2
- Common DevSecOps Challenges and How to Overcome Them https://microtica.com/blog/common-devsecops-challenges-and-how-to-overcome-them/
- What is DevOps? Really understand it | DevOps vs SRE https://www.youtube.com/watch?v=0yWAtQ6wYNM&t=169s

# BACKUP SLIDES

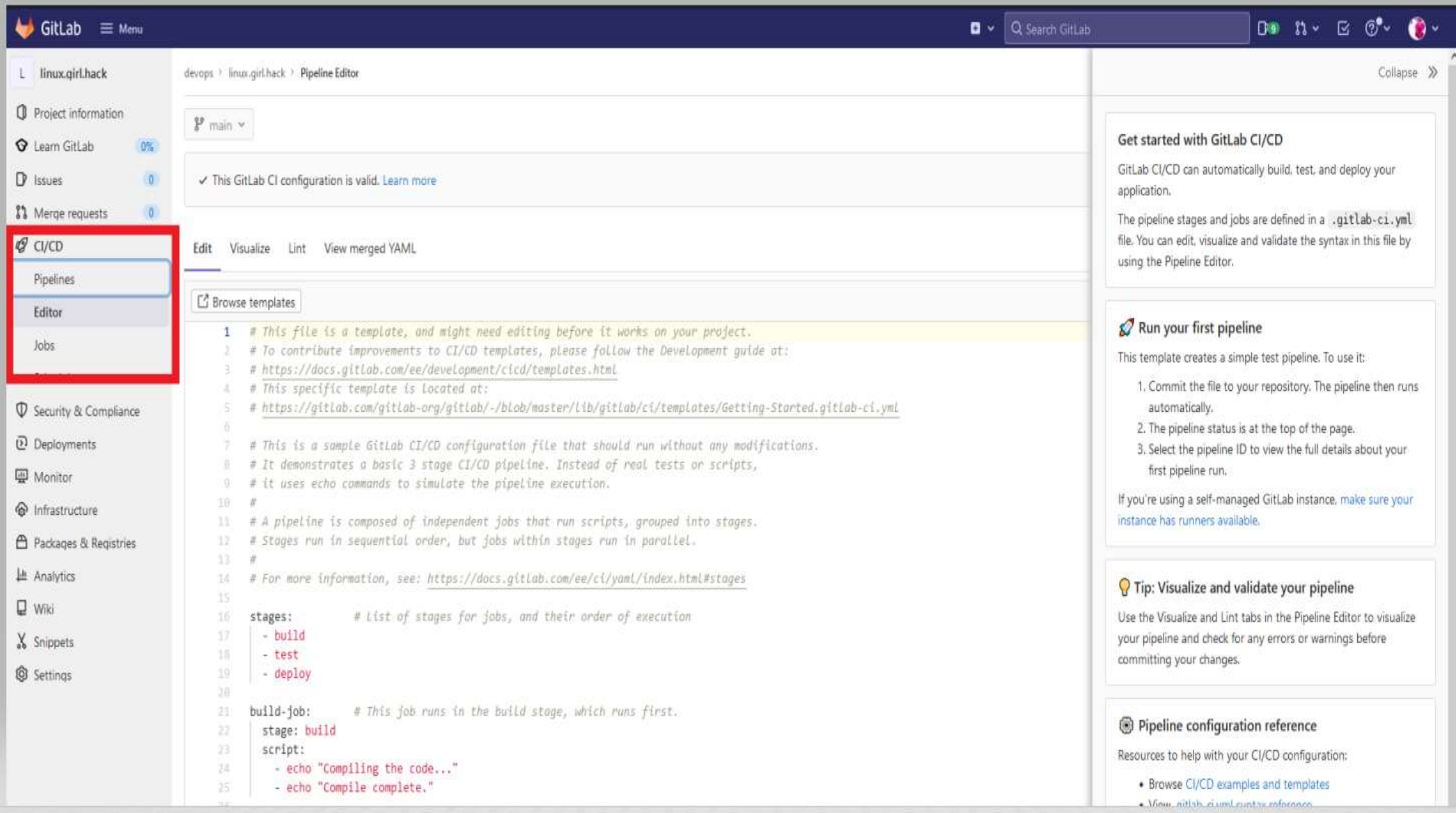
# Gitlab DevOps Platform

## The DevOps Platform has arrived.

Deliver software faster with better security and collaboration in a single platform.

Get free trial | Watch demo


*Image source: https://about.gitlab.com/*


GitLab
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Issues 0
Merge requests 0
CI/CD
Pipelines
Editor
Jobs
Security & Compliance
Deployments
Monitor
Infrastructure
Packages & Registries
Analytics
Wiki
Snippets
Settings
main
✓ This GitLab CI configuration is valid. Learn more
Edit
Visualize
Lint
View merged YAML
Browse templates
# This file is a template, and might need editing before it works on your project.
# To contribute improvements to CI/CD templates, please follow the Development guide at:
# https://docs.gitlab.com/ee/development/cicd/templates.html
# This specific template is located at:
# https://gitlab.com/gitlab-org/gitlab/-/blob/master/lib/gitlab/ci/templates/Getting-Started.gitlab-ci.yml
# This is a sample GitLab CI/CD configuration file that should run without any modifications.
# It demonstrates a basic 3 stage CI/CD pipeline. Instead of real tests or scripts,
# it uses echo commands to simulate the pipeline execution.
#
# A pipeline is composed of independent jobs that run scripts, grouped into stages.
# Stages run in sequential order, but jobs within stages run in parallel.
#
# For more information, see: https://docs.gitlab.com/ee/ci/yaml/index.html#stages
stages: # List of stages for jobs, and their order of execution
- build
- test
- deploy
build-job: # This job runs in the build stage, which runs first.
stage: build
script:
- echo "Compiling the code..."
- echo "Compile complete."
Get started with GitLab CI/CD
GitLab CI/CD can automatically build, test, and deploy your application.
The pipeline stages and jobs are defined in a .gitlab-ci.yml file. You can edit, visualize and validate the syntax in this file by using the Pipeline Editor.
Run your first pipeline
This template creates a simple test pipeline. To use it:
1. Commit the file to your repository. The pipeline then runs automatically.
2. The pipeline status is at the top of the page.
3. Select the pipeline ID to view the full details about your first pipeline run.
If you're using a self-managed GitLab instance, make sure your instance has runners available.
Tip: Visualize and validate your pipeline
Use the Visualize and Lint tabs in the Pipeline Editor to visualize your pipeline and check for any errors or warnings before committing your changes.
Pipeline configuration reference
Resources to help with your CI/CD configuration:
• Browse CI/CD examples and templates

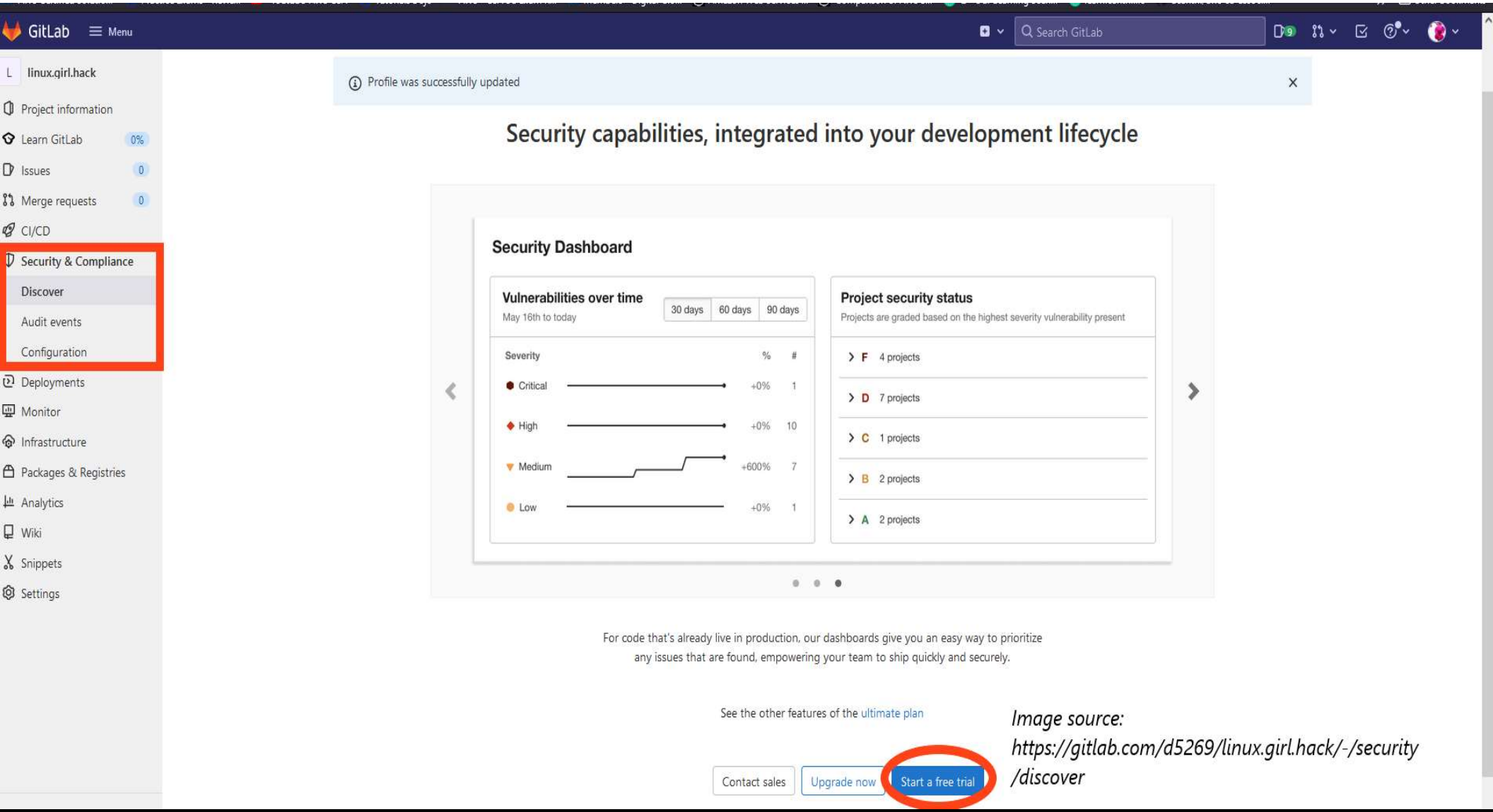


*Image source: https://gitlab.com/d5269/linux.girl.hack/-/security/discover*

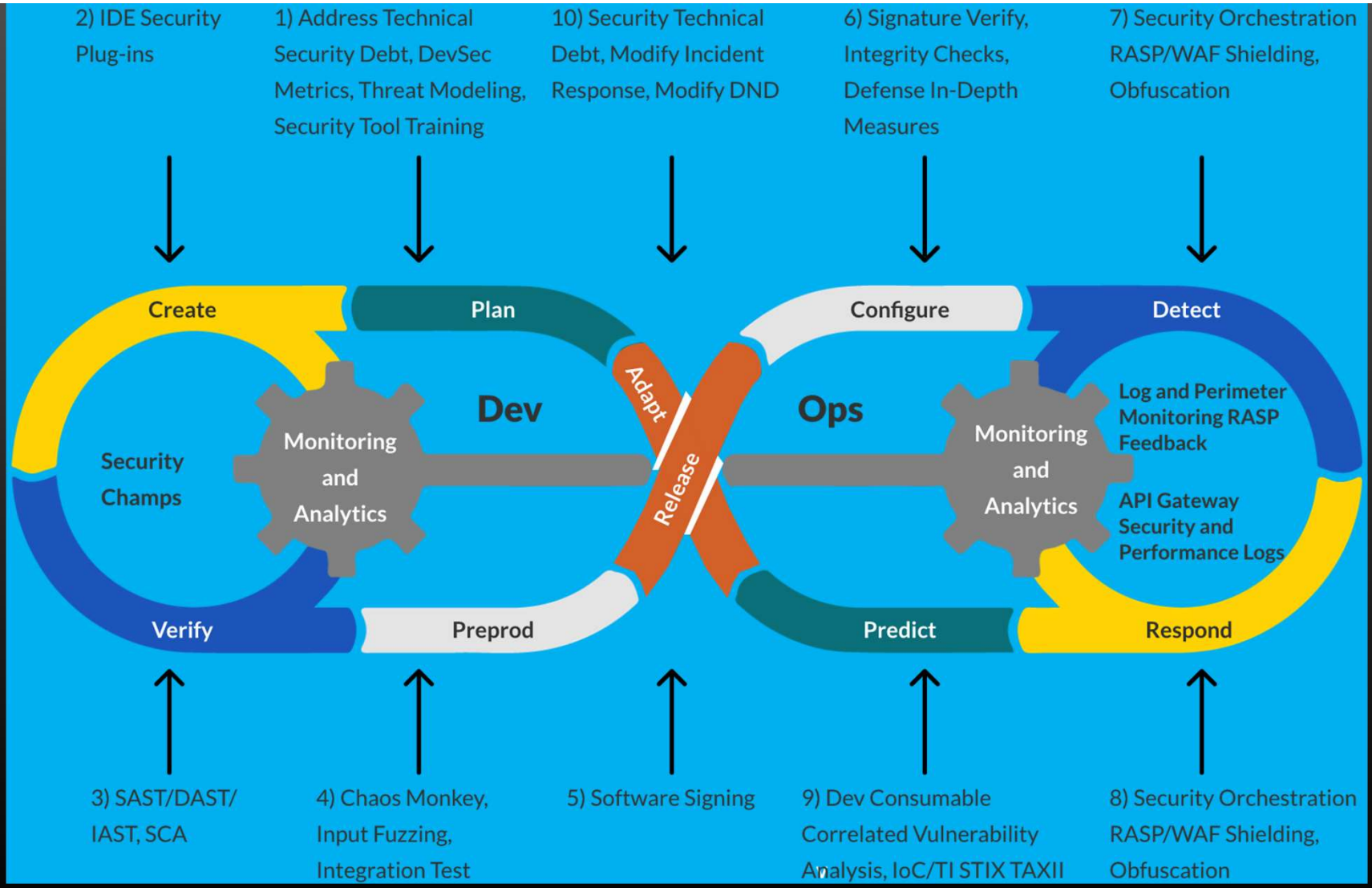


*Image source: https://www.minfytech.com/wp-content/uploads/2021/05/DevSecOps-Solution.png*