

DevSecOps By Phoenix Team

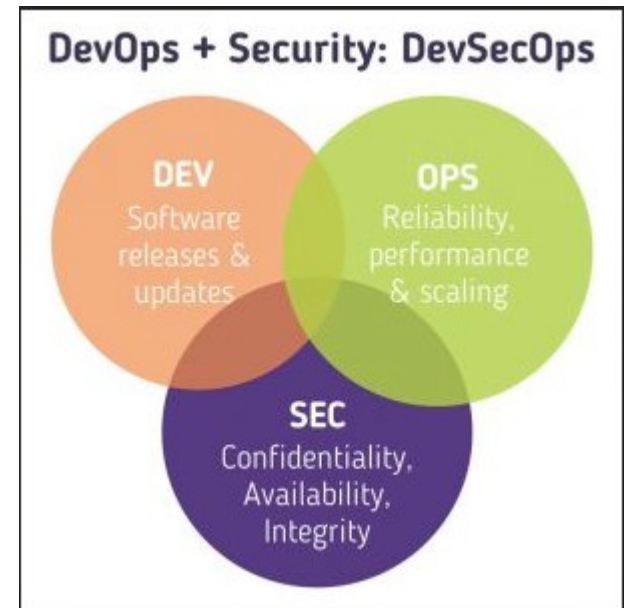


DevOps to DevSecOps

What is DevSecOps?

DevSecOps is an approach to IT security based on the principles of DevOps. The purpose and intent of DevSecOps is to build on the mindset that "everyone is responsible for security" .

- **DevSecOps Is Full Stack:** DevSecOps spans the entire IT stack, and includes network, host, container, server, cloud, mobile, and application security.
- **DevSecOps Is Full SLC:** DevSecOps also spans the full software life cycle, including development and operations. In development, the focus is on identifying and preventing vulnerabilities, while in operations, monitoring and defending applications are the goals.



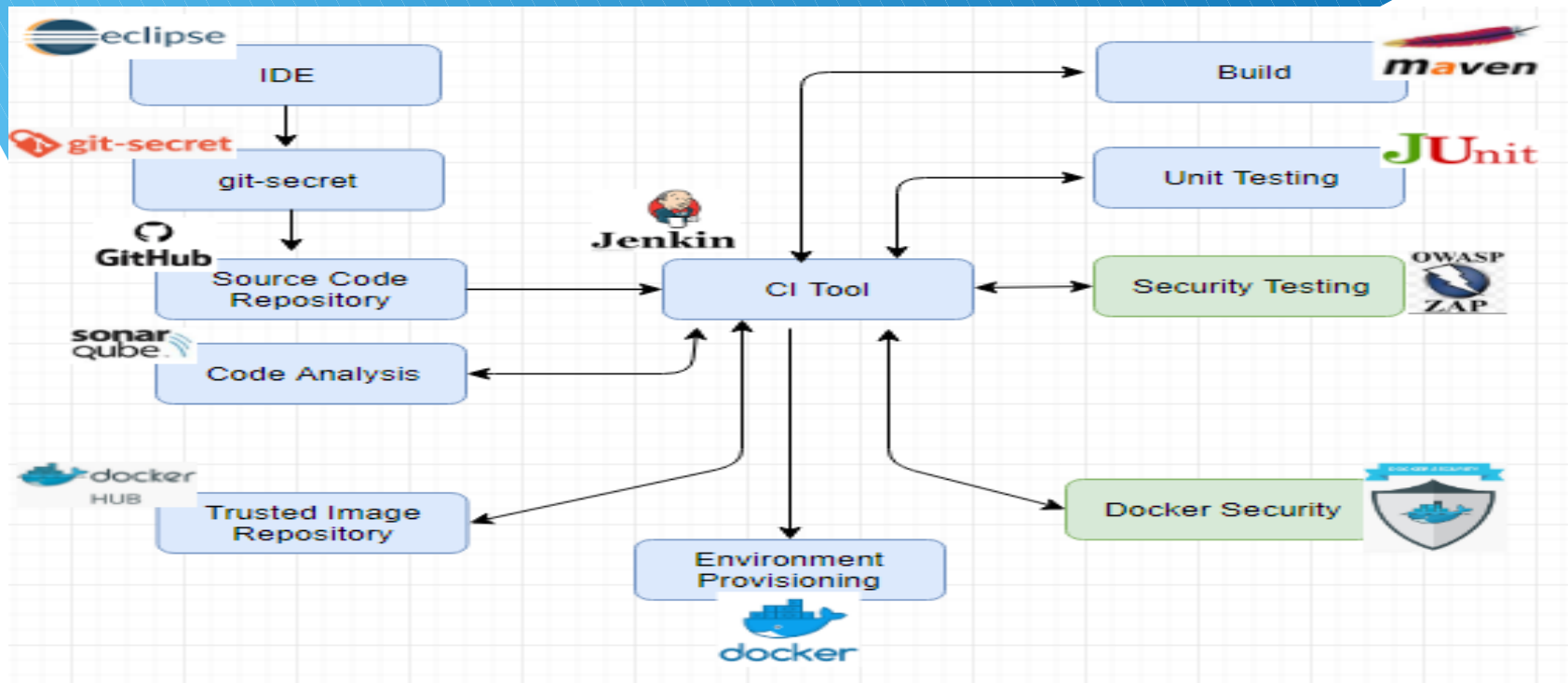
Baking Security in DevOps

Why DevSecOps?

- ✓ DevSecOps seeks to bring security to the table to be involved and integrated into the DevOps team and their responsibilities.
- ✓ DevSecOps is to simply detect vulnerabilities as early as possible in the software development process.
- ✓ By shifting security left, the team reduce risks in their software by finding and fixing security vulnerabilities early in the SDLC.

Approach - Security in CI/CD Pipeline

Architecture



Pipeline



Security Tools Integrated

Security Tools

The following security tools have been integrated in the CI-CD pipeline :

- **Git-Secrets:** To prevents committing files with sensitive data for example credentials, into git repositories.
- **Docker Bench:** The Docker Bench for Security checks for common best-practices around docker images and deploying Docker containers in production. The tests are all automated, and are inspired by the **CIS Docker Community Edition Benchmark v1.1.0**
- **OWASP-ZAP:** The Zed Attack Proxy (ZAP) is an open source tool to automatically find vulnerabilities in web applications.

User Stories

User Stories



Kubernetes Dashboard - Monitoring Deployments

The containerized application has been deployed to a Kubernetes cluster. The Kubernetes dashboard is used to troubleshoot the application and manage the clusters.

The image displays two screenshots of the Kubernetes Dashboard interface. The top screenshot shows the 'Deployments' page for a cluster. It features a sidebar with navigation options like Cluster, Namespaces, Nodes, Persistent Volumes, and Roles. The main content area lists a deployment named 'phoenix' with a green status icon, labeled 'app: phoenix', showing 1 / 1 pods, an age of 'a day', and using the image 'world2enjoy/phoenix2.0:latest'. The bottom screenshot shows the 'Details' page for the 'phoenix' deployment. It includes a sidebar with additional options like Storage Classes and a dropdown for the 'phoenix' namespace. The details section lists various attributes: Name (phoenix), Namespace (phoenix), Labels (app: phoenix), Annotations (deployment.kubernetes.io/revision: 1), Creation Time (2019-02-13T06:21 UTC), Selector (app: phoenix), Strategy (Recreate), Min ready seconds (0), Revision history limit (10), and Status (1 updated, 1 total, 1 available, 0 unavailable). Action buttons for SCALE, EDIT, and DELETE are visible in the top right of the details view.

Top Screenshot: Deployments List

Name	Labels	Pods	Age	Images
✓ phoenix	app: phoenix	1 / 1	a day	world2enjoy/phoenix2.0:latest

Bottom Screenshot: Deployment Details

Details

- Name: phoenix
- Namespace: phoenix
- Labels: app: phoenix
- Annotations: deployment.kubernetes.io/revision: 1
- Creation Time: 2019-02-13T06:21 UTC
- Selector: app: phoenix
- Strategy: Recreate
- Min ready seconds: 0
- Revision history limit: 10
- Status: 1 updated, 1 total, 1 available, 0 unavailable

Kubernetes Dashboard - Monitoring Pods

The screenshot displays the Kubernetes Dashboard interface. At the top, the 'kubernetes' logo is on the left, a search bar is in the center, and a '+ CREATE' button with a user icon is on the right. Below this is a blue navigation bar with 'Workloads > Pods'. On the left sidebar, under the 'phoenix' namespace, the 'Pods' menu item is highlighted. The main content area is divided into three sections: 'Pods', 'Details', and 'Containers'. The 'Pods' section shows a table with one pod: 'phoenix-7fb758b454-zh4x7', which is 'Running' on node 'ip-172-20-34-74.us-west-2.compute.internal' with 0 restarts and an age of 'a day'. The 'Details' section provides metadata for this pod, including its name, namespace, labels ('app: phoenix', 'pod-template-hash: 3963146010'), creation time, status, and QoS class. The 'Containers' section shows the 'phoenix' container with its image, environment variables, commands, and arguments.

Pods

Name	Node	Status	Restarts	Age
✓ phoenix-7fb758b454-zh4x7	ip-172-20-34-74.us-west-2.compute.internal	Running	0	a day

Details

Name: phoenix-7fb758b454-zh4x7
Namespace: phoenix
Labels: app: phoenix pod-template-hash: 3963146010
Creation Time: 2019-02-13T06:21 UTC
Status: Running
QoS Class: BestEffort

Network
Node: ip-172-20-34-74.us-west-2.compute.internal
IP: 100.96.2.12

Containers

phoenix
Image: world2enjoy/phoenix2.0:latest
Environment variables: -
Commands: -
Args: -

Kubernetes Dashboard - Monitoring Services

The screenshot displays the Kubernetes Dashboard interface. The top navigation bar includes the Kubernetes logo, a search bar, and a '+ CREATE' button. The breadcrumb trail shows 'Discovery and load balancing > Services > phoenix-c'. On the right, there are 'EDIT' and 'DELETE' buttons. The left sidebar contains a menu with categories: Overview, Workloads, Discovery and Load Balancing, and Config and Storage. The 'Services' item under 'Discovery and Load Balancing' is selected. The main content area is divided into three sections: Details, Endpoints, and Pods.

Details

Name:	phoenix-c	Connection	
Namespace:	phoenix	Cluster IP:	100.71.182.28
Labels:	app: phoenix	Internal endpoints:	phoenix-c.phoenix:8080 TCP phoenix-c.phoenix:30005 TCP
Creation Time:	2019-02-13T06:21 UTC		
Label selector:	app: phoenix		
Type:	NodePort		
Session Affinity:	None		

Endpoints

Host	Ports (Name, Port, Protocol)	Node	Ready
100.96.2.12	<unset>, 8080, TCP	ip-172-20-34-74.us-west-2.compute.internal	true

Pods

Name	Node	Status	Restarts	Age
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Q & A



THANK YOU

Phoenix Team

