

DevSecOps Professional Course



Course Objective

68%

of companies plan to use DevSecOps practices within the next two years¹

We all have heard about DevSecOps, Shifting Left, Rugged DevOps but there are no clear examples or frameworks available for security professionals to implement in their organization. This hands-on course will teach you exactly that, tools and techniques to embed security as part of the DevOps pipeline. We will learn how unicorns like Google, Facebook, Amazon, Etsy handle security at scale and what we can learn from them to mature our security programs.

In DevSecOps Professional training you will learn how to handle security at scale using DevSecOps practices. We will start off with the basics of the DevOps, DevSecOps and move towards advanced concepts such as Security as Code, Compliance as Code, Configuration management, Infrastructure as code, etc.,

Practical DevSecOps is the world's first dedicated DevSecOps certification program.

Course Syllabus

The CDP course takes you through the series of stages and maturity levels to mature an organization into a DevSecOps shop. We will cover the following topics as part of the course.

1. Introduction to DevOps and DevSecOps
2. Introduction to the Tools of the trade
3. Secure SDLC and CI/CD pipeline
4. Software Component Analysis (SCA)
5. Static Analysis(SAST) in CI/CD pipeline.
6. Dynamic Analysis(DAST) in CI/CD pipeline.
7. Infrastructure as Code and its security.
8. Compliance as code
9. Vulnerability Management with custom tools

What will students learn?

The students will learn how to:

1. Create a culture of sharing and collaboration among the stakeholders.
2. Scale security team's effort to reduce the attack surface.
3. Embed security as part of DevOps and CI/CD
4. Start or mature your application security program using modern Secure SDLC practices.
5. Harden infrastructure using Infrastructure as Code and maintain compliance using Compliance as Code tools and techniques.
6. Consolidate and co-relate vulnerabilities to scale false-positive analysis using automated tools.



@PDevSecOps

facebook.com/pdevsecops

linkedin.com/company/pdevsecops

practical-devsecops.com

¹ Security for DevOps - Enterprise Survey Report, September 2019



DevSecOps Professional Course



About Practical DevSecOps

Practical DevSecOps (a Hysn Technologies Inc company) offers vendor-neutral, practical, and hands-on DevSecOps training and certification programs for IT Professionals. Our online training and certifications are focused on modern areas of information security, including DevOps Security, Cloud-Native Security, Cloud Security & Container security.

The certifications are achieved after rigorous tests(12-24 hour exams) of skill and are considered the most valuable in the information security field.

USA

201 Spear St #1100, San Francisco, CA 94105.
+1 (415) 800 4768
trainings@practical-devsecops.com

Singapore

531A Upper Cross Street #04-95 Hong Lim Complex 051531
+65 85042132
apac@practical-devsecops.com

India

Hyderabad, India
+91 81216 77008
apac@practical-devsecops.com



@PDevSecOps

facebook.com/pdevsecops

linkedin.com/company/pdevsecops

practical-devsecops.com

Who should take this course?

This course is aimed at anyone who is looking to embed security as part of agile/cloud/DevOps environments like Security Professionals, Penetration Testers, IT managers, Developers and DevOps Engineers

What students will be provided?

The students will be provided with:

1. Training manuals and lab guide.
2. Course videos and checklists.
3. Tools used during the course.
4. 30 days online lab access.
5. CDP certification attempt.
6. Access to the dedicated course slack channel.

Student Prerequisites

There are no required prerequisites to attend the course however the students will benefit from having basic knowledge about Linux commands like ls, cd, mkdir, etc., and application Security practices like OWASP Top 10.

Software and Hardware Requirements

Our state of the lab is deployed on AWS so you would need the following to connect to the lab environment.

1. Laptop with decent specs atleast 4GB of RAM and a modern CPU to login into our lab VPN.
2. Administrator access to install software like VirtualBox, VPN client and change BIOS settings to enable virtualization

Training Duration

2-4 days of Instructor-led training with 30 days of online lab access.

Learn more

To learn more about our courses, certifications and pricing, contact our team or visit <https://practical-devsecops.com/courses-and-certifications/>



Professional Course - Detailed Syllabus



Introduction to DevOps and DevSecOps

About Practical DevSecOps

Practical DevSecOps (a Hysn Technologies Inc company) offers vendor-neutral, practical, and hands-on DevSecOps training and certification programs for IT Professionals. Our online training and certifications are focused on modern areas of information security, including DevOps Security, Cloud-Native Security, Cloud Security & Container security.

The certifications are achieved after rigorous tests(12-24 hour exams) of skill and are considered the most valuable in the information security field.

1. What is DevOps?
2. DevOps Building Blocks- People, Process and Technology.
3. DevOps Principles - Culture, Automation, Measurement and Sharing (CAMS)
4. Benefits of DevOps - Speed, Reliability, Availability, Scalability, Automation, Cost and Visibility.
5. What is Continuous Integration and Continuous Deployment?
 - a. Continuous Integration to Continuous Deployment to Continuous Delivery.
 - b. Continuous Delivery vs Continuous Deployment.
 - c. General workflow of CI/CD pipeline.
 - d. Blue/Green deployment strategy.
 - e. Achieving full automation.
 - f. Designing a CI/CD pipeline for a web application.
6. Common Challenges faced when using DevOps principle.
7. Case studies on DevOps of cutting edge technology at Facebook, Amazon, and Google
8. **Demo:** A full enterprise-grade DevSecOps Pipeline.

USA

201 Spear St #1100, San Francisco, CA 94105.
+1 (415) 800 4768
trainings@practical-devsecops.com

Singapore

531A Upper Cross Street #04-95 Hong Lim Complex 051531
+65 85042132
apac@practical-devsecops.com

India

Hyderabad, India
+91 81216 77008
apac@practical-devsecops.com

Introduction to the Tools of the trade

1. Github/Gitlab/BitBucket
2. Docker
3. Docker Registry
4. Ansible
5. Jenkins/Travis/Gitlab CI/Bitbucket
6. Gauntlt
7. Inspec
8. Bandit/retireJS/Nmap
9. **Hands-On Labs:** Use Vagrant to practice Infrastructure as a Code
10. **Hands-On Labs:** Building a CI Pipeline using Jenkins/Travis and GitHub/bitbucket.
11. **Hands-On Labs:** Use the above tools to create a complete CI/CD pipeline.



@PDevSecOps

facebook.com/pdevsecops

linkedin.com/company/pdevsecops

practical-devsecops.com

Copyright © 2019 Hysn Technologies, Inc. Practical DevSecOps, Hysn , and the Practical DevSecOps logo are trademarks or registered trademarks of Hysn Technologies, Inc. or its subsidiaries in the United States and other countries. All other trademarks are the property of their respective owners..



Professional Course - Detailed Syllabus



Secure SDLC and CI/CD pipeline

About Practical DevSecOps

Practical DevSecOps (a Hysn Technologies Inc company) offers vendor-neutral, practical, and hands-on DevSecOps training and certification programs for IT Professionals. Our online training and certifications are focused on modern areas of information security, including DevOps Security, Cloud-Native Security, Cloud Security & Container security. The certifications are achieved after rigorous tests(12-24 hour exams) of skill and are considered the most valuable in the information security field.

USA

201 Spear St #1100, San Francisco, CA 94105.
+1 (415) 800 4768
trainings@practical-devsecops.com

Singapore

531A Upper Cross Street #04-95 Hong Lim Complex 051531
+65 85042132
apac@practical-devsecops.com

India

Hyderabad, India
+91 81216 77008
apac@practical-devsecops.com



@PDevSecOps

facebook.com/pdevsecops

linkedin.com/company/pdevsecops

practical-devsecops.com

1. What is Secure SDLC
2. Secure SDLC Activities and Security Gates
 - a. Security Requirements (Requirements)
 - b. Threat Modelling (Design)
 - c. Static Analysis and Secure by Default (Implementation)
 - d. Dynamic Analysis(Testing)
 - e. OS Hardening, Web/Application Hardening (Deploy)
 - f. Security Monitoring/Compliance (Maintain)
3. DevSecOps Maturity Model (DSOMM)
 - a. Maturity levels and tasks involved
 - b. 4-axes in DSOMM
 - c. How to go from Maturity Level 1 to Maturity Level 4
 - d. Best practices for Maturity Level 1
 - e. Considerations for Maturity Level 2
 - f. Challenges in Maturity Level 3
 - g. Dream of achieving Maturity Level 2
4. Using tools of the trade to do the above activities in CI/CD
5. Embedding Security as part of CI/CD pipeline
6. DevSecOps and challenges with Pentesting and Vulnerability Assessment.
7. **Hands-on:** Create a CI/CD pipeline suitable for modern applications.
8. **Hands-on:** Manage the findings in a fully automated pipeline.

Software Component Analysis(CSA) in CI/CD pipeline

1. What is Software Component Analysis?
2. Software Component Analysis and its challenges.
3. What to look in an SCA solution (Free or Commercial).
4. Embedding SCA tools like OWASP Dependency Checker, Safety, RetireJS, and NPM Audit, Snyk into the pipeline.
5. Demo: using OWASP Dependency Checker to scan third party component vulnerabilities in Java Code Base.
6. **Hands-On Labs:** using RetireJS and NPM to scan third party component vulnerabilities in Javascript Code Base.
7. **Hands-On Labs:** using Safety/pip to scan third party component vulnerabilities in Python Code Base.

Professional Course - Detailed Syllabus



About Practical DevSecOps

Practical DevSecOps (a Hysn Technologies Inc company) offers vendor-neutral, practical, and hands-on DevSecOps training and certification programs for IT Professionals. Our online training and certifications are focused on modern areas of information security, including DevOps Security, Cloud-Native Security, Cloud Security & Container security.

The certifications are achieved after rigorous tests(12-24 hour exams) of skill and are considered the most valuable in the information security field.

USA

201 Spear St #1100, San Francisco, CA 94105.
+1 (415) 800 4768
trainings@practical-devsecops.com

Singapore

531A Upper Cross Street #04-95 Hong Lim Complex 051531
+65 85042132
apac@practical-devsecops.com

India

Hyderabad, India
+91 81216 77008
apac@practical-devsecops.com



@PDevSecOps

facebook.com/pdevsecops

linkedin.com/company/pdevsecops

practical-devsecops.com

SAST (Static Analysis) in CI/CD pipeline

1. What is Static Application Security Testing?
2. Static Analysis and its challenges.
3. Embedding SAST tools into the pipeline.
4. Secrets scanning to prevent secret exposure in the code.
5. Writing custom checks to catch secrets leakage in an organization.
6. **Hands-On Labs:** using SpotBugs to scan Java code.
7. **Hands-On Labs:** using Trufflehog/Gitrob to scan for secrets in CI/CD pipeline.
8. **Hands-On Labs:** using brakeman/bandit to scan Ruby on Rails and Python Code Base.

DAST (Dynamic Analysis) in CI/CD pipeline

1. What is Dynamic Application Security Testing?
2. Dynamic Analysis and Its challenges (Session Management, AJAX Crawling)
3. Embedding DAST tools like ZAP and Burp Suite into the pipeline.
4. SSL misconfiguration testing
5. Server Misconfiguration Testing like secret folders and files.
6. Sqlmap testing for SQL Injection vulnerabilities.
7. **Hands-On Labs:** using ZAP to configure per commit/weekly/monthly scans.
8. **Demo:** using Burp Suite to configure per commit/weekly/monthly scans.

Infrastructure as Code and Its Security

1. What is Infrastructure as Code and its benefits?
2. Platform + Infrastructure Definition + Configuration Management.
3. Introduction to Ansible.
 - a. Benefits of Ansible.
 - b. Push and Pull based configuration management systems
 - c. Modules, tasks, roles, and Playbooks
4. Tools and Services which helps to achieve IaC
5. **Hands-On Labs:** Vagrant, Docker, and Ansible
6. **Hands-On Labs:** Using Ansible to create Golden images and harden Infrastructure.

Professional Course - Detailed Syllabus



About Practical DevSecOps

Practical DevSecOps (a Hysn Technologies Inc company) offers vendor-neutral, practical, and hands-on DevSecOps training and certification programs for IT Professionals. Our online training and certifications are focused on modern areas of information security, including DevOps Security, Cloud-Native Security, Cloud Security & Container security.

The certifications are achieved after rigorous tests(12-24 hour exams) of skill and are considered the most valuable in the information security field.

USA

201 Spear St #1100, San Francisco, CA 94105.
+1 (415) 800 4768
trainings@practical-devsecops.com

Singapore

531A Upper Cross Street #04-95 Hong Lim Complex 051531
+65 85042132
apac@practical-devsecops.com

India

Hyderabad, India
+91 81216 77008
apac@practical-devsecops.com



@PDevSecOps

facebook.com/pdevsecops

linkedin.com/company/pdevsecops

practical-devsecops.com

Compliance as code

1. Different approaches to handle compliance requirements at DevOps scale
2. Using configuration management to achieve compliance.
3. Manage compliance using Inspec/OpenScap at Scale.
4. **Hands-On Labs:** Create an Inspec profile to create compliance checks for your organization
5. **Hands-On Labs:** Use Inspec profile to scale compliance.

Vulnerability Management with custom tools

1. Approaches to manage the vulnerabilities in the organization.
2. **Hands-On Labs:** Using Defect Dojo for vulnerability management.

Professional Course - Certification Process



Exam and certification process

Our certifications are well recognized in the industry as we ensure our students gain practical skills to implement DevSecOps. To ensure we deliver on our promise, we have a rigorous certification program.

About Practical DevSecOps

Practical DevSecOps (a Hysn Technologies Inc company) offers vendor-neutral, practical, and hands-on DevSecOps training and certification programs for IT Professionals. Our online training and certifications are focused on modern areas of information security, including DevOps Security, Cloud-Native Security, Cloud Security & Container security.

The certifications are achieved after rigorous tests(12-24 hour exams) of skill and are considered the most valuable in the information security field.

CDP exam is an online, task-oriented exam where you attempt to solve 5 challenges (tasks) in a span of **12 hours**. The exam is based on the content covered in the course but might require further research to pass the exam. Once the exam is done, you have 24 hours to send us the exam report to trainings@practical-devsecops.com.

Please note, it's not an MCB or tests your memory type of exam but practical applicability of the content covered in the course.

Exam Pass percentage

The student needs to achieve at least 80 points (80%) to achieve the CDP certification.

Steps Involved

A typical certification flow involves 5 steps.

Step 1: The student schedules the exam at <http://bit.ly/cdp-exam>.

Step 2: We will send you details about the exam and challenges, 30 minutes before the exam start time. Our instructors will be there to assist you if you face any difficulty while connecting to the exam lab.

Step 3: The student will connect to the exam lab using the above details and attempts the exam.

Step 4: After the exam, the student will have 24 hours to send us the exam report along with solutions.

Step 5: Practical DevSecOps team will evaluate the report and share the result(pass/fail) with the student.

Exam Challenges/tasks

The exam has 5 challenges for the exam, each of these challenges provides you points based on how complete or partial your solution was. You would need to score 80 points out of 100 (80%) to achieve the CDP certification.

Exam documentation

After the exam, you have about 24 hours to send us the exam report on our email trainings@practical-devsecops.com.

USA

201 Spear St #1100, San Francisco, CA 94105.
+1 (415) 800 4768
trainings@practical-devsecops.com

Singapore

531A Upper Cross Street #04-95 Hong Lim Complex 051531
+65 85042132
apac@practical-devsecops.com

India

Hyderabad, India
+91 81216 77008
apac@practical-devsecops.com



@PDevSecOps

facebook.com/pdevsecops

linkedin.com/company/pdevsecops

practical-devsecops.com