

# Role of DevSecOps in designing Cybersecurity

**Sneha Mirajkar**  
[SMirajka@cisco.com](mailto:SMirajka@cisco.com)

**Vittalkumar Mirajkar**  
[Vittalkumar\\_Mirajkar@mcafee.com](mailto:Vittalkumar_Mirajkar@mcafee.com)

## Abstract

DevSecOps—short for *development, security, and operations*—automates the integration of security at every phase of the software development lifecycle, from initial design through integration, testing, deployment, and software delivery.

DevSecOps represents a natural and necessary evolution in the way development organizations approach security. In the past, security was 'tacked on' to software at the end of the development cycle (almost as an afterthought) by a separate security team and was tested by a separate quality assurance (QA) team.

DevSecOps integrates application and infrastructure security seamlessly into Agile and DevOps processes and tools. It addresses security issues as they emerge, when they're easier, faster, and less expensive to fix (and before they are put into production). Additionally, DevSecOps makes application and infrastructure security a shared responsibility of development, security, and IT operations teams, rather than the sole responsibility of a security silo. It enables “software, safer, sooner”—the DevSecOps motto—by automating the delivery of secure software without slowing the software development cycle.

This paper aims to explain the various stages of DevSecOps such as: plan, develop, release, and operate. Throughout each stage, tools such as containerization, continuous integration/continuous delivery, and infrastructure automation are used to improve the security and efficiency of development processes. By integrating security into the overall DevOps workflow, DevSecOps enables organizations to better respond to and mitigate potential threats.

## Key Takeaways:

- Rapid, cost-effective software delivery
- Improved, proactive security
- Accelerated security vulnerability patching
- Automation compatible with modern development