

DevOps practice

An Overview

DevOps

“A cross-functional **community of practice** dedicated to the study of building, evolving, and operating **rapidly changing, resilient systems** at scale.”

Jez Humble - Author of “Lean Enterprise” and “Continuous Delivery”

DevOps requires a commitment to culture change across the organization

DevOps guiding principles (Three Ways)

1

Systems Thinking

Emphasizes the performance of the entire system, as opposed to the performance of a specific silo of work or department

2

Amplify feedback loops

The goal of almost any process improvement initiative is to shorten and amplify feedback loops so necessary corrections can be continually made

3

Culture of experimentation

Create a culture that fosters continual experimentation, taking risks and learning from failure; and understanding that repetition and practice is the prerequisite to mastery

Key DevOps characteristics (CALMS)

Culture

The DevOps movement seeks to unify teams and create easy channels of communication and collaboration

Lean

The DevOps movement helps deliver value to the customer and to continuously improve the ability to deliver value by removing waste

Automation

Automation plays a critical role in DevOps because it allows us to streamline operations, more effectively document and deliver, and collaborate with others

Measurement

The DevOps movement seeks continuous improvement through experimentation, measurement, learning, and adjustment in iterative cycles

Sharing

In order to create an efficient cross functional team, an organization must learn to trust their team members with information and decision making authority in their respective areas. Avoid being the blocker.

DevOps builds a culture of collaboration and sharing

Trust

Open communication strategies, knowledge sharing, and tactical autonomy assist with cross team collaboration.

Standards

Cross-agency teams working more effectively together towards strategic and tactical goals, and more generally accepted shared standards emerge.

Marketplaces

IT departments could offer a greater quantity and variety of shared platforms and services, creating centers of excellence.

Cross-functional

Organizational silos augmented or replaced with cross-functional teams, while critical silos become shared services.

DevOps automates relentlessly

Efficiency

Automation enhances manual labor. Automation is less costly to maintain and often has better success at repetitive tasks than manual labor, allowing agencies to focus on increasingly mission-value activities.

Software

Useful private sector and shared government software services work their way into agencies at an accelerating rate.

Security

Compliance documentation, scanning, and general security processes become more automated and continuous, allowing for more iterative, agile, and modular development and acquisition.

Coordination

Application development and operations are more seamless, as each work together to build infrastructure, testing, and deployment as code.

DevOps **measures** and iteratively improves

Knowledge

Through better data submission, storage, access, and analytics tools, agencies are able to effectively follow indicators and projects, and analyze measurements over time in detail.

Evaluation

Agencies are better at defining success criteria and major risk factors over time that can help drive the measurements monitored across the organization.

Tracking

There are better means to constantly track the states of programs and projects and better controls will be put in place to ensure success.

Iteration

Agencies are better at executing measured iterative projects that evolve in an agile fashion according to ever changing business needs.

DevOps is perfect for **lean** organizations

Acquisitions

Agencies get creative with acquisitions to support new services like the cloud, as well as smaller and more modular contracting. Much of the boilerplate is automated.

Budgeting

Agencies continue to have to live with budget cuts, and yearly cycles, to effectively accomplish their missions with less capital at their disposal.

Talent

More technical talent is hired directly into government to provide better oversight and internal collaboration. These may be part of digital service teams that spin up.

Adaptation

More focus in hiring placed on finding folks who can learn and adapt rather than have static experience. The digital frontier changes fast.

DevOps is a philosophy to solve a people problem

Our goal is to get people working effectively together

- with open accessible communication,
- effective and secure sharing,
- efficient tools and processes,
- an inclusive welcoming culture,
- and an eye for continuous assessment and improvement.

Looking to integrate the DevOps philosophy into your projects?

Focus on aligning proposed project strategies with the DevOps guiding principles and CALMS characteristics