DEVOPS FOR EXECUTIVES

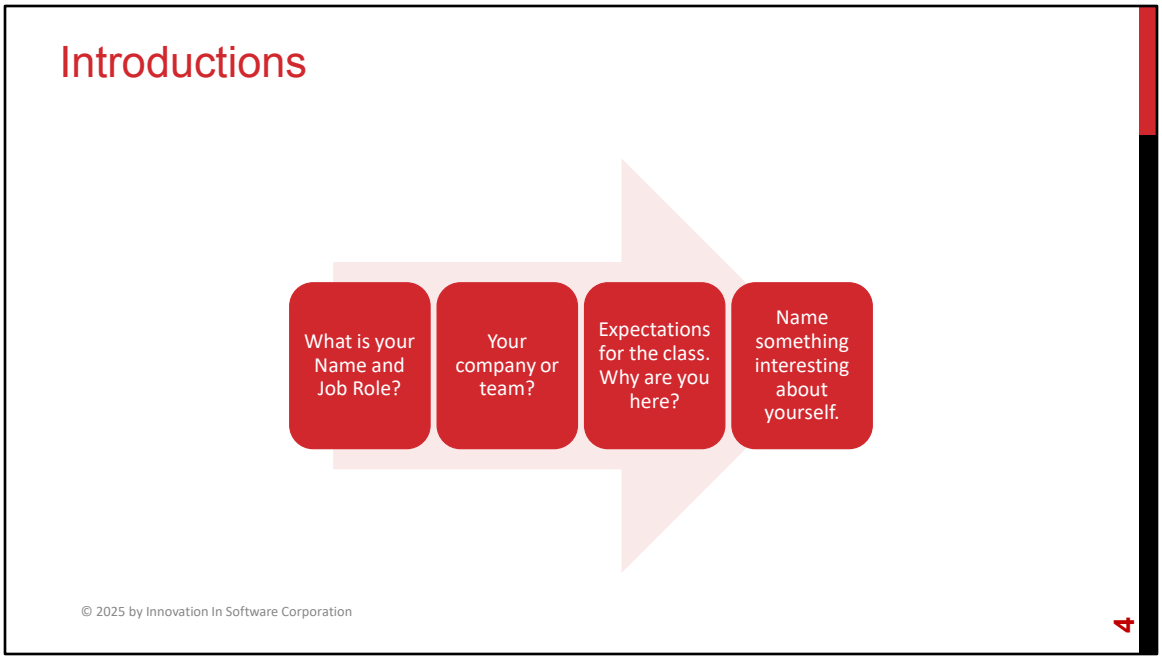
1

TEKsystems Global Services

WORKFORCE DEVELOPMENT

Welcome

- Logistics (breaks, facilities, lunch, etc.)
- Rules of Engagement
- Introductions
- Lets Get Started!



Before diving into the material, it's important to understand who is in the room and what you want to achieve today. This will help me tailor discussions to your organization's needs.

- Name and Job Role: Helps us understand your background and how DevOps fits into your responsibilities.
- Company or Team: Learning about your organization provides insight into possible use cases and challenges.
- Expectations for the Class: Knowing what you're hoping to gain ensures we cover topics most valuable to you.
- Interesting Fact: A light way to connect and build rapport.

Presenter Information

Antoine Victor

MSCE, MCDBA, MCSD, MCT, CSM, CSPO

- Agile Technical Coach, Enterprise IT Engineering Consultant

Workshop Goals and Structure

- Four-Hour Executive Sessions
- Key DevOps Principles for Leaders
- Blend of Practical Insights and Demos

This session is designed with busy executives in mind—concise yet impactful content. Our focus will be on strategic insights and real-world examples.

- Four-Hour Executive Session: The content is streamlined to deliver the highest-value information in the time available, with minimal fluff.
- Key DevOps Principles for Leaders: By exploring frameworks like the Three Ways (Flow, Feedback, Learning), we'll link them directly to measurable organizational outcomes.
- Blend of Practical Insights and Demos: Real-world examples and live demonstrations make the concepts tangible, helping you visualize their application.

What to expect from this workshop

- Flexibility
- Conversations
- Literacy and awareness on the many principles, tools and practices associated with this thing called “DevOps”
- A priority of focus on human behavior first, technology and tools second
- A lot of talk about organizational culture
- An effort to focus on your own situations and challenges so you can act on what you learn

7

This workshop isn’t about rigid rules—it’s about flexibility and conversation. You’ll walk away with insights into how DevOps can help you tackle unique organizational challenges while building a sustainable culture of continuous improvement.
This workshop emphasizes dynamic engagement and real-world applications. We’ll focus on understanding both technical and human factors behind successful DevOps transformations.

- Flexibility: The session is designed to adapt to different organizational structures and challenges.
- Conversations: Active participation and case-based discussions enhance collective learning.
- Literacy and Awareness: Gain a comprehensive overview of key DevOps principles and how they fit into your business.
- Focus on Human Behavior: DevOps success begins with people and processes before tools.
- Organizational Culture: Establishing a collaborative and growth-oriented culture is crucial for sustained success.
- Actionable Insights: Leave with practical next steps tailored to your organizational needs.

What not to expect from this workshop

- Prescriptions and formulas, rigid processes, step-by-step instructions
- Big overnight transformations
- Perfect solutions that work for everyone
- Extended technical discussions or deep focus on any specific engineering tool

8

We won't be prescribing rigid methodologies or offering cookie-cutter answers. Instead, we'll focus on principles that you can adapt to your business needs. Expect actionable advice, but remember—lasting change is gradual.

While we'll provide valuable insights, this workshop won't present a universal DevOps playbook. Instead, we focus on flexible, adaptive strategies.

- No Prescriptive Formulas: Every organization has different needs, and success depends on contextual adjustments.
- No Big Overnight Transformations: Effective DevOps adoption is incremental, focusing on continuous improvements.
- No Perfect Solutions: There's no magic bullet—instead, DevOps thrives on experimentation and refinement.
- No Extended Technical Deep Dives: This session is aimed at strategic decision-makers, keeping technical discussions at a high level.

DevOps for Executive Leadership Week 12:

Advanced Lab and Dashboard

9

DevOps for Executive Leadership: Week 12 Lab Overview

- Week 12 of 15 - May 09, 2025
- Instructor: Antoine Victor

The Week 12 lab, designed as a capstone-style technical exercise. The lab combines infrastructure-as-code, pipeline metrics, and dashboard visualization to give executives hands-on exposure to DevOps measurement practices. The purpose is to experience how metrics like estimate accuracy, failure rate, and deployment frequency provide critical insights into engineering performance and planning effectiveness.

❖ Lab Overview and Purpose

- Recap of Week 11 context: using data to identify DevOps challenges
- Week 12 Lab Goal: Simulate and measure real-world DevOps conditions
- Infrastructure + Pipeline + Dashboard = Executive Insight
- Foundation for Week 15 Strategy Lab

Week 11 highlighted risks and bottlenecks—Week 12 addresses how we use metrics to act on those insights.

This lab combines three key components: provisioning infrastructure, triggering builds and failures, and analyzing results in dashboards.

Students will run a realistic workload using Terraform on AWS, with scripted failures and task estimates tracked across multiple runs.

The outputs will drive dashboards that can be used for retrospectives, release decision-making, and board-level reporting.

❖ Week 11 Recap

- Week 11 focused on identifying DevOps risks
- Week 8 dashboards surfaced bottlenecks
- Cultural, technical, and tooling gaps explored
- Set up the importance of visibility and metrics

Last week, students identified risks such as silos, missed estimates, and security gaps.

These were visible via metrics like MTTR, build time, test success, and estimate accuracy.

The lab this week is where these metrics become actionable.

Lab Goal: Simulate DevOps Conditions

- Trigger failing tests and long deployments
- Create stories and tasks with planned estimates
- Monitor what actually happens in CI/CD
- Capture real-world metrics for executive insights

13

We simulate real-world chaos: failures, delays, and discrepancies between estimates and actuals.

This builds empathy and equips leaders to make better process and investment decisions.

Infrastructure + Pipeline + Dashboard

- Infrastructure: Deploy EC2 with Terraform
- Pipeline: Run tests, log failures, compute metrics
- Dashboard: Build frequency, estimate accuracy, failure rate
- Connect the dots between tech and business performance

14

EC2 deploys a simple web app with a 50% failure rate and built-in delay.

The pipeline logs build duration, test results, and computes estimate accuracy per task.

The dashboard then visualizes all this—turning CI/CD telemetry into executive reporting.

Foundation for Week 15 Strategy Lab

- Week 15: Use metrics to prioritize improvement plans
- Week 12 outputs fuel that strategic decision-making
- Charts and logs provide data for simulated boardroom discussion

15

Week 15 is the final strategy lab.

Students will use the dashboards and logs from this week to simulate leadership presentations.

What should be fixed? What is acceptable failure rate? Are our plans realistic?

❖ Lab Instructions and Prerequisites

- Access full lab at: https://github.com/ProDataMan/DevOpsForExecutives/blob/main/labs/Week12Lab.md
- Step-by-step YAML, PowerShell, and Terraform integration
- Expected run time: 90–120 minutes
- Foundation: Weeks 4 and 8 must be completed

16

The lab instructions are online with full code blocks and import scripts.

YAML and PS1 files are provided in the repo.

It builds on work from Weeks 4 and 8—those pipelines and dashboards must be in place.

Prerequisites for Week 12 Lab

- Azure DevOps Project: Week4-Lab-DemoXX
- AWS account + IAM credentials
- Terraform installed locally
- PAT Token and STUDENT_INITIALS pipeline variables
- Node.js sample app deployed from Week 8

17

Students must have access to AWS to deploy the EC2 instance.

Terraform must be installed locally for infrastructure provisioning.

Their Azure DevOps project must already have the Week 8 setup: pipeline, user stories, and initial dashboard.

PAT token and initials are required for the script to connect and update DevOps.

❖ Let's Review

- 5 Review Questions
- Multiple Choice
- Test Your Knowledge

These questions are based on the real-world configuration and output of the Week 12 lab.
Executives should think about the implications of pipeline behavior, failure patterns, and metrics accuracy in making leadership decisions.

Question 1

Which of the following metrics is calculated by comparing planned vs. completed task effort?

A. Deployment Frequency
B. Lead Time
C. Estimate Accuracy
D. Failure Rate

19

Correct answer is C. Estimate Accuracy is derived by comparing the Original Estimate and Completed Work fields from tasks. This metric helps leadership evaluate planning effectiveness.

Question 1 Answer

Which of the following metrics is calculated by comparing planned vs. completed task effort?

A. Deployment Frequency
B. Lead Time
C. Estimate Accuracy
D. Failure Rate

20

C is correct. Estimate Accuracy is updated in the script by subtracting Completed Work from the Original Estimate. A high error in this metric indicates poor planning or unexpected obstacles.

Question 2

What tool is used to provision the EC2 instance that introduces delays and random failures?

A. Azure Bicep
B. Jenkins
C. AWS CDK
D. Terraform

Correct answer is D. Terraform provisions the AWS EC2 instance. It includes simulated delays (e.g., sleep 30s) and a 50% failure condition to create useful pipeline telemetry for analysis.

Question 2 Answer

What tool is used to provision the EC2 instance that introduces delays and random failures?

A. Azure Bicep
B. Jenkins
C. AWS CDK
D. Terraform

D is correct. Terraform is called directly in the Azure pipeline after installation, using a simple script to deploy an EC2 instance and return metrics about its behavior.

Question 3

Which condition causes the `import-workitems.ps1` script to run in the pipeline?

A. If fewer than 6 User Stories are found
B. If any test fails
C. If no build logs exist
D. Always runs on main branch

23

Correct answer is A. The inline PowerShell checks for the number of User Stories in the project. If there are fewer than 6, it runs the import script. This prevents duplicate data.

Question 3 Answer

Which condition causes the `import-workitems.ps1` script to run in the pipeline?

A. If fewer than 6 User Stories are found
B. If any test fails
C. If no build logs exist
D. Always runs on main branch

A is correct. The import check uses a WIQL query in the PowerShell inline step. If fewer than 6 User Stories are returned, it assumes this is the first time the lab is being run.

Question 4

Which dashboard metric best helps identify pipeline reliability issues over time?

A. Story Points Completed
B. Test Success Rate
C. Deployment History Table
D. Estimate Accuracy Bar Chart

25

Correct answer is C. The Deployment History table shows recent runs, their outcomes, and duration. This is useful to identify how often and how reliably code is delivered.

Question 4 Answer

Which dashboard metric best helps identify pipeline reliability issues over time?

A. Story Points Completed
B. Test Success Rate
C. Deployment History Table
D. Estimate Accuracy Bar Chart

C is correct. While test success is important, viewing the full build history allows leaders to assess if their teams can deliver consistently over time, especially across failing deploys.

Question 5

What is one strategic insight that can be gained from the Week 12 dashboard data?

A. Estimate accuracy has no correlation with build failures
B. Failure rate above 50% is acceptable in early pipelines
C. Long lead time and failure rate suggest process issues
D. EC2 resources must always be provisioned manually

Correct answer is C. Long lead times, frequent failures, and poor estimate accuracy reflect real-world delivery challenges. Executives can use this to prioritize process improvement.

Question 5 Answer

What is one strategic insight that can be gained from the Week 12 dashboard data?

A. Estimate accuracy has no correlation with build failures
B. Failure rate above 50% is acceptable in early pipelines
C. Long lead time and failure rate suggest process issues
D. EC2 resources must always be provisioned manually

C is correct. The data from the lab should provoke a conversation about improving developer feedback loops, pipeline stability, and planning accuracy—core goals of DevOps leadership.