DEVOPS FOR EXECUTIVES

1


TEKsystems
Global Services
WORKFORCE
DEVELOPMENT

WELCOME

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

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PRESENTER INFORMATION

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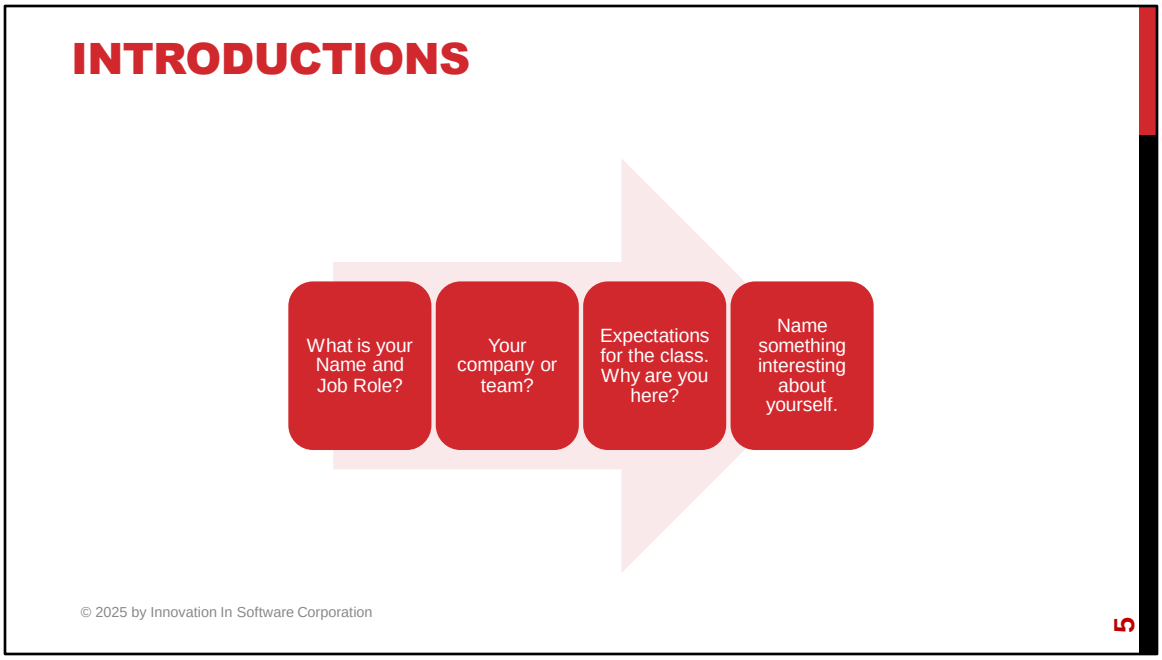
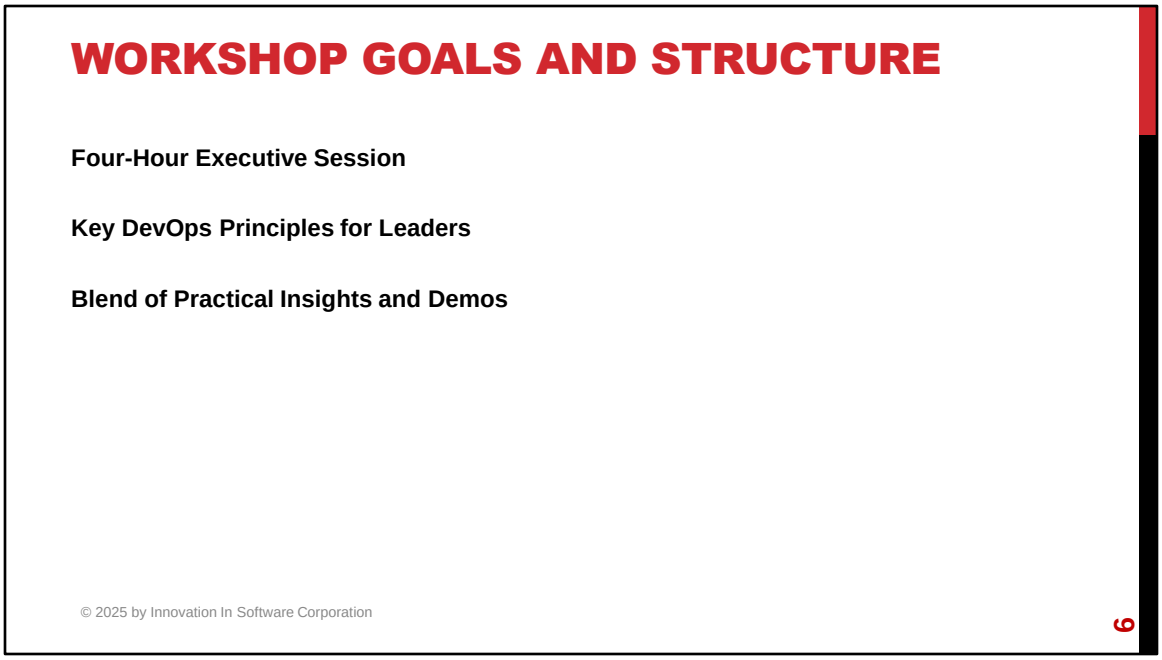


Before diving into the material, it's important to understand who is in the room and what you want to achieve today. This will help me tailor discussions to your organization's needs.

- 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.



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

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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.

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.

AGENDA

Completing our introduction to DevOps with practical insights.

- **Recap of Week 1**
- **DevOps History and Evolution**
- **Major DevOps Tools and Platforms**
- **Infrastructure as Code Overview**
- **Collaboration and Communication**
- **Metrics for Success**
- **Group Exercise: DevOps Expectations**

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This week, we complete the “Introduction to DevOps” started in Week 1, focusing on foundational elements and setting the stage for deeper exploration.

Recap of Week 1
Quickly revisits key concepts from last week to ensure alignment.

DevOps History and Evolution
Covers the origins and growth of DevOps

Major DevOps Tools and Platforms
Expands on the brief tool mention from Week 1, per 1.2.

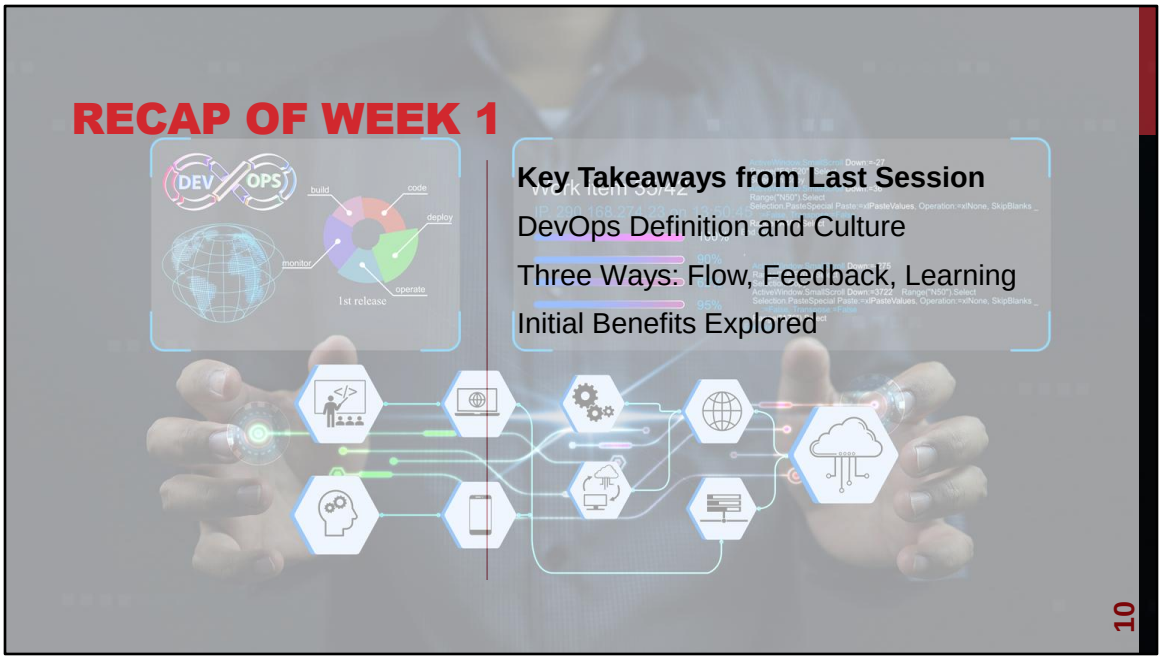
Infrastructure as Code Overview
Introduces IaC as a key concept.

Collaboration and Communication
Reinforces 1.3’s collaboration benefit and Week 1’s culture focus.

Metrics for Success

Links to 1.3’s deployment frequency/quality, introducing measurement.

Group Exercise: DevOps Expectations
Interactive activity, engaging participants.



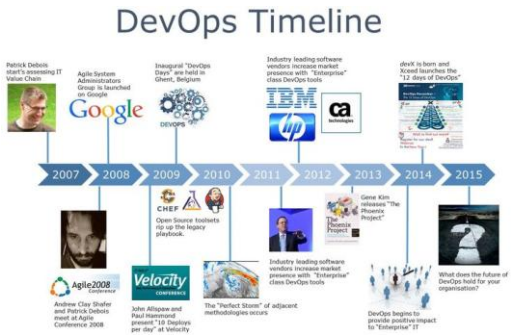
DevOps Definition and Culture
We defined DevOps as a cultural movement blending processes and technology, emphasizing collaboration, learning, and accountability (Slides 9-12).

Three Ways: Flow, Feedback, Learning
Introduced Gene Kim's framework: optimizing work flow, fast feedback loops, and continuous experimentation (Slides 13-31).

Initial Benefits Explored
Highlighted faster delivery, reduced risk, and competitive edge (Slide 11).

Image Suggestions
- Adobe Stock Search: "DevOps culture infographic" - A summary graphic of culture tenets.

*DEVOPS HISTORY AND EVOLUTION



- **Origins of DevOps**
- **Evolution Over Time**
- **Industry Adoption Trends**

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Origins of DevOps
DevOps emerged around 2007-2009 from Agile frustrations, with Patrick Debois coining the term after the first DevOpsDays conference.

Evolution Over Time
Grew from grassroots meetups to a mainstream methodology, integrating lean, Agile, and ITIL principles.

Industry Adoption Trends
Adoption surged in tech giants (e.g., Amazon, Netflix) by 2010s, now widespread across industries for agility.

Image Credits
- “DevOps timeline” - https://fr.pinterest.com/pin/551620654342779879/

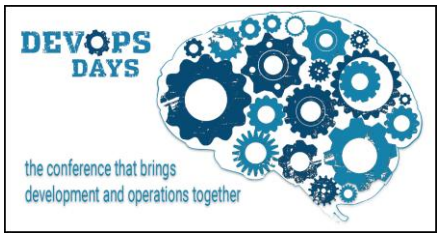
ORIGINS OF DEVOPS

The Birth of a Movement

Agile and IT Pain Points

Patrick Debois and DevOpsDays

Early Influencers



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Agile and IT Pain Points
Late 2000s Agile adoption revealed silos between dev and ops, slowing delivery and increasing friction.

Patrick Debois and DevOpsDays
In 2009, Patrick Debois organized the first DevOpsDays in Belgium, sparking a global movement.

Early Influencers
Figures like Andrew Shafer and John Allspaw contributed ideas on bridging dev-ops gaps.

Image Suggestions
- DevOpsDays – DevOpsDays.org

EVOLUTION OVER TIME

Growth of DevOps Practices

Integration with Lean and Agile

Rise of Automation

Cultural Shift Emphasis

Automation

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Integration with Lean and Agile
DevOps adopted lean's waste reduction and Agile's iterative approach, enhancing flow (Week 1, Slide 14).

Rise of Automation
Tools emerged to automate testing, deployment, and monitoring, boosting efficiency.

Cultural Shift Emphasis
Focus shifted to collaboration and learning, as seen in Week 1's tenets (Slide 12).

INDUSTRY ADOPTION TRENDS

DevOps Goes Mainstream

Tech Giants Lead the Way

Cross-Industry Spread

Current State

NETFLIX

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Tech Giants Lead the Way
Amazon's 2011 deployment frequency and Netflix's Chaos Monkey showcased DevOps power.

Cross-Industry Spread
By mid-2010s, finance, healthcare, and retail adopted DevOps for agility and reliability.

Current State
Today, DevOps is a standard for competitive organizations, per 2025 trends.

*MAJOR DEVOPS TOOLS AND PLATFORMS

Automation Tools

Collaboration Platforms

Monitoring Solutions

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This expands on Week 1's brief tool mention (Slide 27), fulfilling 1.2's "Major DevOps tools and platforms."

Automation Tools
Tools like Jenkins and Docker automate key processes.

Collaboration Platforms
Slack and Git enhance team interaction.

Monitoring Solutions
Prometheus and Nagios ensure system visibility.

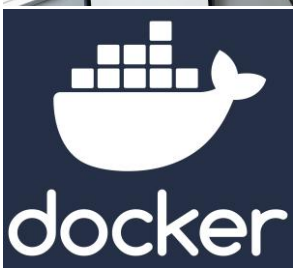
AUTOMATION TOOLS

Streamlining Processes

Jenkins for CI/CD

Docker for Containers

Ansible for IaC



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Jenkins for CI/CD
Automates build, test, and deploy cycles, introduced briefly in Week 1 (Slide 27).

Docker for Containers
Packages apps with dependencies for consistency across environments.

Ansible for IaC
Manages infrastructure as code, automating provisioning.

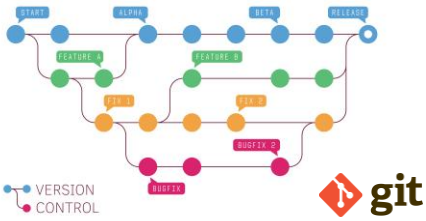
COLLABORATION PLATFORMS

Enhancing Teamwork

Slack for Communication

Git for Version Control

Jira for Task Management



slack

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Slack for Communication
Real-time messaging improves team coordination (Week 1, Slide 27 implied).

Git for Version Control
Tracks code changes, enabling collaboration.

Jira for Task Management
Manages workflows and visibility, aligning with “Make Work Visible” (Slide 16).

MONITORING SOLUTIONS

Ensuring Visibility

Prometheus for Metrics

Nagios for Alerts

Grafana for Dashboards

Grafana

Nagios

Prometheus

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Prometheus for Metrics
Collects system performance data, supporting feedback (Slide 26).

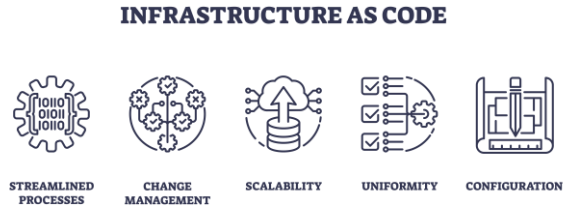
Nagios for Alerts
Notifies teams of issues, aiding quick response.

Grafana for Dashboards
Visualizes metrics, enhancing visibility (Slide 16).

Image Suggestions
- Adobe Stock Search: “Prometheus metrics graph” - A metrics graph example.
- Adobe Stock Search: “Grafana dashboard screenshot” - A dashboard visual.

*INFRASTRUCTURE AS CODE OVERVIEW

- What is IaC?
- Why It Matters
- Basic Examples



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This introduces IaC from 1.2's "Key concepts," keeping it high-level for Week 2.

What is IaC?
Defines IaC as a foundational DevOps practice.

Why It Matters
Links to benefits like consistency and speed.

Basic Examples
Provides simple illustrations of IaC use.

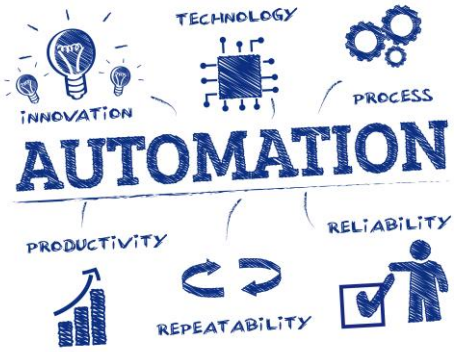
WHAT IS IAC?

Defining Infrastructure as Code

Code-Driven Infrastructure

Declarative Approach

Automation Focus



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Code-Driven Infrastructure
IaC manages servers, networks, etc., via configuration files, not manual setup.

Declarative Approach
Specifies desired outcomes (e.g., “two servers”), not steps.

Automation Focus
Automates provisioning, reducing errors.

WHY IT MATTERS

Benefits of IaC

- Consistency Across Environments
- Faster Provisioning
- Scalability Support

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Consistency Across Environments
Ensures dev, test, and prod are identical, reducing issues.

Faster Provisioning
Cuts setup time from days to minutes.

Scalability Support
Easily scales resources up or down.

Image Suggestions
- Adobe Stock Search: “Consistency environments diagram” - Dev/test/prod alignment.
- Adobe Stock Search: “Scalability icon” - An icon of scaling arrows.

BASIC EXAMPLES

IaC in Action

- Terraform Example
- Ansible Playbook
- CloudFormation Snippet

AWS CloudFormation

22

Terraform Example
Shows a simple Terraform file creating a server.

Ansible Playbook
A YAML snippet configuring a service.

CloudFormation Snippet
An AWS example defining a resource.

Image Suggestions
- Adobe Stock Search: “Terraform code snippet” - A code screenshot.
- Adobe Stock Search: “Ansible playbook example” - A YAML visual.

BASIC TERRAFORM CONFIG

```
resource "aws_instance" "Web" {
  ami           = "ami-07013dd48140efd73"  # Replace with your desired AMI ID
  instance_type = "t3.micro"
  tags = {
    Name = "Ubuntu Server"
  }
 # subnet_id     = "vpc-0bf039e4e823f5223"  # Replace with your subnet ID
  key_name      = "AWS_Ubuntu_RSA"
 # security_groups = ["EveryBody All In"]  # Ensure the security group exists with this name
}
```

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BASIC ANSIBLE PLAYBOOK

```
---
 - hosts: all
   become: yes
   tasks:
     - name: Task - 1 Update APT package manager repositories cache
       become: true
       apt:
         update_cache: yes
     - name: Task -2 Install Java using Ansible
       become: yes
       apt:
         name: "{{ packages }}"
         state: present
       vars:
         packages:
           - openjdk-11-jdk
```

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*COLLABORATION AND COMMUNICATION

- **Breaking Down Silos**
- **Tools for Collaboration**
- **Cultural Shifts**

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Reinforces 1.3's collaboration benefit and Week 1's culture focus (Slide 12).

Breaking Down Silos
Reduces team isolation.

Tools for Collaboration
Enhances interaction.

Cultural Shifts
Fosters a DevOps mindset.

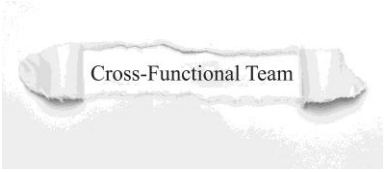
BREAKING DOWN SILOS

Fostering Cross-Functional Teams

Shared Goals

Cross-Team Metrics

Joint Decision-Making



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Shared Goals
Aligns teams on common objectives, reducing friction.

Cross-Team Metrics
Tracks collective progress (e.g., deployment frequency).

Joint Decision-Making
Leverages diverse input for better outcomes.

Image Suggestions
- Adobe Stock Search: “Silo breakdown illustration” - Silos merging into a team.
- Adobe Stock Search: “Team metrics chart” - A shared metrics visual.

TOOLS FOR COLLABORATION

Enhancing Team Interaction

Slack, Teams

Kanban Boards

Shared Dashboards

27

Slack, Teams
Enables real-time communication (Week 1 implied).

Kanban Boards
Visualizes work, per “Make Work Visible” (Slide 16).

Shared Dashboards
Provides visibility into progress.

Image Suggestions
- Adobe Stock Search: “Slack interface mockup” - A chat interface.
- Adobe Stock Search: “Kanban board photo” - A physical or digital Kanban board.

CULTURAL SHIFTS

Promoting DevOps Culture

Continuous Learning

Blameless Culture

Innovation Encouragement

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Continuous Learning
Values growth from experience (Slide 31).

Blameless Culture
Focuses on solutions, not blame (Slide 28).

Innovation Encouragement
Supports experimentation (Slide 32).

Image Suggestions
- Adobe Stock Search: “Learning culture illustration” - A person learning with a lightbulb.
- Adobe Stock Search: “Innovation gears” - Gears with an innovation spark.

*METRICS FOR SUCCESS

- **Key Performance Indicators**
- **Aligning Metrics with Business**
- **Measuring Impact**

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Links to 1.3's deployment frequency/quality (Slide 11).

Key Performance Indicators
Defines measurable DevOps outcomes.

Aligning Metrics with Business
Connects to business goals.

Measuring Impact
Quantifies benefits.

KEY PERFORMANCE INDICATORS

Understanding DevOps Metrics

Lead Time

Deployment Frequency

Change Failure Rate

POOR BUILD QUALITY
& RELEASE SPEED

30

Lead Time
Time from commit to deployment, per Flow (Slide 14).

Deployment Frequency
How often releases occur (Slide 11).

Change Failure Rate
Percentage of failed changes, reflecting quality.

Image Suggestions
- Adobe Stock Search: “Lead time timeline” - A timeline graphic.
- Adobe Stock Search: “Deployment frequency graph” - A frequency graph.

ALIGNING METRICS WITH BUSINESS

Tying DevOps to Business Goals

Efficiency

Customer Satisfaction

Risk Reduction

31

Efficiency
Lead time reductions streamline operations.

Customer Satisfaction
Frequent releases improve experience (Slide 11).

Risk Reduction
Lower failure rates enhance reliability.

Image Suggestions
- Adobe Stock Search: “Efficiency arrow chart” - An efficiency gain chart.
- Adobe Stock Search: “Customer satisfaction icon” - A happy customer icon.

MEASURING IMPACT

Quantifying DevOps Benefits

Before and After Comparisons

Benchmarking

Continuous Improvement

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Before and After Comparisons
Shows metric improvements post-DevOps.

Benchmarking
Compares to industry standards.

Continuous Improvement
Drives ongoing optimization (Slide 31).

Image Suggestions
- Adobe Stock Search: “Before after bar chart” - A pre/post comparison chart.
- Adobe Stock Search: “Benchmarking infographic” - An industry comparison graphic.

GROUP EXERCISE: DEVOPS EXPECTATIONS

Form Groups

Discuss Expectations

Present Insights

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Form Groups
Break into Zoom breakout rooms.

Discuss Expectations
Share Week 1 expectations (Slide 5) and how DevOps applies.

Present Insights
Reconvene to discuss findings.

Image Suggestions
- Adobe Stock Search: “Group discussion photo” - People in a meeting.
- Adobe Stock Search: “Brainstorming whiteboard” - A whiteboard with ideas.

QUIZ QUESTION 1

What sparked the DevOps movement?

A. New hardware advances
B. Agile adoption challenges
C. Regulatory changes
D. Cloud cost reductions

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Tests “Origins of DevOps” (Slide “Origins of DevOps”). Agile pain points led to DevOps.

Image Suggestions
- Adobe Stock Search: “Quiz multiple choice template” - A clean MCQ layout.

[Reference Slide: Origins of DevOps]

QUIZ ANSWER 1

What sparked the DevOps movement?

A. New hardware advances
B. Agile adoption challenges
C. Regulatory changes
D. Cloud cost reductions

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B. Agile adoption challenges is correct. Agile silos between dev and ops sparked DevOps in 2009, as per “Origins of DevOps.”

Image Suggestions
- Adobe Stock Search: “Quiz answer highlight” - Highlighted correct answer.

[Reference Slide: Origins of DevOps]

QUIZ QUESTION 2

Which tool is used for containerization?

A. Jenkins
B. Docker
C. Slack
D. Prometheus

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Tests “Automation Tools” (Slide “Automation Tools”). Docker containerizes apps.

Image Suggestions
- Adobe Stock Search: “Quiz multiple choice template” - A clean MCQ layout.

[Reference Slide: Automation Tools]

QUIZ ANSWER 2

Which tool is used for containerization?

A. Jenkins
B. Docker
C. Slack
D. Prometheus

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B. Docker is correct. Docker packages apps with dependencies for consistency, as noted in “Automation Tools.”

Image Suggestions
- Adobe Stock Search: “Quiz answer highlight” - Highlighted correct answer.

[Reference Slide: Automation Tools]

QUIZ QUESTION 3

What does IaC improve?

A. Manual configuration time
B. Consistency across environments
C. Team silos
D. Deployment errors

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Tests “Why It Matters” (Slide “Why It Matters”). IaC ensures consistency.

Image Suggestions
- Adobe Stock Search: “Quiz multiple choice template” - A clean MCQ layout.

[Reference Slide: Why It Matters]

QUIZ ANSWER 3

What does IaC improve?

A. Manual configuration time
B. Consistency across environments
C. Team silos
D. Deployment errors

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B. Consistency across environments is correct. IaC ensures identical environments, reducing issues, per “Why It Matters.”

Image Suggestions
- Adobe Stock Search: “Quiz answer highlight” - Highlighted correct answer.

[Reference Slide: Why It Matters]

QUIZ QUESTION 4

What does visibility of work enable?

A. Reduced collaboration
B. Better bottleneck identification
C. Increased delays
D. Less accountability

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Tests Week 1's "Make Work Visible" (Slide 16). Visibility aids collaboration.

Image Suggestions
- Adobe Stock Search: "Quiz multiple choice template" - A clean MCQ layout.

[Reference Slide: Make Work Visible (Week 1)]

QUIZ ANSWER 4

What does visibility of work enable?

A. Reduced collaboration
B. Better bottleneck identification
C. Increased delays
D. Less accountability

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B. Better bottleneck identification is correct. Visibility via Kanban boards spots bottlenecks, per “Make Work Visible” (Week 1).

Image Suggestions
- Adobe Stock Search: “Quiz answer highlight” - Highlighted correct answer.

[Reference Slide: Make Work Visible (Week 1)]

QUIZ QUESTION 5

What is a DevOps cultural tenet?

A. Siloed teams
B. Continuous learning
C. Blame assignment
D. Static processes

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Tests “Cultural Shifts” (Slide “Cultural Shifts”). Continuous learning is key.

Image Suggestions
- Adobe Stock Search: “Quiz multiple choice template” - A clean MCQ layout.

[Reference Slide: Cultural Shifts]

QUIZ ANSWER 5

What is a DevOps cultural tenet?

A. Siloed teams
B. Continuous learning
C. Blame assignment
D. Static processes

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B. Continuous learning is correct. DevOps values learning from experiences, per "Cultural Shifts."

Image Suggestions
- Adobe Stock Search: "Quiz answer highlight" - Highlighted correct answer.

[Reference Slide: Cultural Shifts]

QUIZ QUESTION 6

What does deployment frequency indicate?

A. System downtime
B. Release agility
C. Error rates
D. Manual effort

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Tests “Key Performance Indicators” (Slide “Key Performance Indicators”). Frequency shows agility.

Image Suggestions
- Adobe Stock Search: “Quiz multiple choice template” - A clean MCQ layout.

[Reference Slide: Key Performance Indicators]

QUIZ ANSWER 6

What does deployment frequency indicate?

A. System downtime
B. Release agility
C. Error rates
D. Manual effort

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B. Release agility is correct. Deployment frequency measures release speed, per “Key Performance Indicators.”

Image Suggestions
- Adobe Stock Search: “Quiz answer highlight” - Highlighted correct answer.

[Reference Slide: Key Performance Indicators]

QUIZ QUESTION 7

Why reduce handoffs in DevOps?

A. Increase delays
B. Improve task ownership
C. Add dependencies
D. Slow delivery

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Tests Week 1's "Reduce the Number of Handoffs" (Slide 21). Fewer handoffs improve flow.

Image Suggestions
- Adobe Stock Search: "Quiz multiple choice template" - A clean MCQ layout.

[Reference Slide: Reduce the Number of Handoffs (Week 1)]

QUIZ ANSWER 7

Why reduce handoffs in DevOps?

A. Increase delays
B. Improve task ownership
C. Add dependencies
D. Slow delivery

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B. Improve task ownership is correct. Reducing handoffs enhances ownership and flow, per “Reduce the Number of Handoffs” (Week 1).

Image Suggestions
- Adobe Stock Search: “Quiz answer highlight” - Highlighted correct answer.

[Reference Slide: Reduce the Number of Handoffs (Week 1)]

QUIZ QUESTION 8

What does the Third Way emphasize?

A. Static processes
B. Continuous experimentation
C. Avoiding failure
D. Limiting feedback

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Tests Week 1's "The Third Way" (Slide 31). Focuses on learning and experimentation.

Image Suggestions
- Adobe Stock Search: "Quiz multiple choice template" - A clean MCQ layout.

[Reference Slide: The Third Way (Week 1)]

QUIZ ANSWER 8

What does the Third Way emphasize?

A. Static processes
B. Continuous experimentation
C. Avoiding failure
D. Limiting feedback

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B. Continuous experimentation is correct. The Third Way fosters learning through experimentation, per “The Third Way” (Week 1).

Image Suggestions
- Adobe Stock Search: “Quiz answer highlight” - Highlighted correct answer.

[Reference Slide: The Third Way (Week 1)]