
DevOps Foundation

Study Aids

What is DevOps? Why Now?

In the blank before each term in Column A, write the letter corresponding to the definition from Column B.

Column A	Column B
_____ DevOps	A. A shift from competing by selling products and services to competing by selling measurable results important to the customer.
_____ Bi-Modal IT	B. A model that emphasizes an understanding of the business' "why" before focusing on the "what" and "how".
_____ Outcome Economy	C. Cultural and professional movement that stresses communication, collaboration and integration between software developers and IT operations professionals.
_____ Golden Circle	D. Where two distinct methodologies exist in the same company, sometimes in separate teams.

DevOps Practices: The Three Ways

Specify the correct order of The Three Ways by entering 1-3 in the left column.

Three Ways Order	The Three Ways
	Create a culture that fosters experimentation and learning
	Understand and increase the flow of work
	Create short feedback loops that enable continuous improvement

DevOps Practices: Matching Exercise

In the blank before each term in Column A, write the letter corresponding to the definition from Column B.

Column A	Column B
_____ Kanban	A. Methodology that focuses on making sure software is always in a releasable state throughout its lifecycle.
_____ Value Stream Mapping	B. Development practice that requires developers to integrate code into a shared repository at least daily.
_____ Theory of Constraints	C. A cultural approach to creating available, survivable, defensible, secure, and resilient software
_____ Continuous Integration	D. Lean-management method for analyzing the current state and designing a future state for the series of events that take a product or service from its beginning through to the customer.
_____ ChatOps	E. Set of practices that enable every change that passes automated tests to be automatically deployed to production.
_____ Continuous Deployment	F. A methodology for identifying the most important limiting factor (i.e., constraint) that stands in the way of achieving a goal and then systematically improving that constraint until it is no longer the limiting factor.
_____ Continuous Delivery	G. A mindset that "everyone is responsible for security" with the goal of safely distributing security decisions at speed and scale to those who hold the highest level of context without sacrificing the safety required.
_____ Rugged software development	H. An approach to managing technical and business operations through a group chat room.
_____ DevSecOps	I. Method of work that pulls the flow of work through a process at a manageable pace.

DevOps Practices: Continuous Integration

Place a check mark next to concept(s) that are necessary for Continuous Integration

Order	Stage
	Automated testing
	Waterfall software development
	Subversion Version Control Repository
	Production-like environment
	Continuous deployment
	Consistent coding standards

DevOps Practices: Continuous Delivery

Specify the correct order of the Continuous Delivery pipeline by entering 1-5 in the left column.

Order	Stage
	Stage
	Code and Commit
	Build
	Test
	Deploy

DevOps Practices: Continuous Testing

Specify in the left column whether the approach is “shift left” or “shift right”

Order	Stage
	Security testing
	Testing in production
	End to end use-case testing
	Test driven development

DevOps and Other Frameworks: Matching Exercise

In the blank before each term in Column A, write the letter corresponding to the definition from Column B.

Column A	Column B
_____ Agile Manifesto	A. A proven, publicly available framework for applying Lean-Agile principles and practices at enterprise scale.
_____ ITIL	B. Software development methods in which requirements and solutions evolve through collaboration between self-organizing, cross-functional teams.
_____ Agile Software Development	C. Production philosophy that focuses on reducing waste to improve overall customer value.
_____ IT Service Management	D. Formal proclamation of values and principles to guide an iterative and people-centric approach to software development.
_____ Scaled Agile Framework (SAFe)	E. Implementation and management of quality IT services that meet the needs of the business. (ITIL definition)
_____ Scrum	F. A simple framework for effective team collaboration on complex projects that provides a small set of rules that create “just enough” structure for teams to be able to focus their innovation on solving what might otherwise be an insurmountable challenge.
_____ Lean Production	G. Set of best practice publications for IT service management.


DevOps and Other Frameworks: Concept Matching

In the left column, write down the name of the IT framework (Agile, ITSM, Lean) that corresponds to the concept in the right column

Framework	Concept
	Scaled Agile Framework
	Improvement Kata
	Agile Service Management
	Scrum
	A3 Thinking
	Process Model
	ITIL
	Product Owner
	Value Stream
	Service
	Muri, Muda, Mura
	Release Management

DevOps and Other Frameworks: Agile Manifesto

Using arrows (as illustrated), align the values on the left to the corresponding values on the right.

Value	Over...	Value
Individuals and interactions		Comprehensive documentation
Working software		Following a plan
Customer collaboration		Processes and tools
Responding to change		Contract negotiations

While there is value in the items on the right, we value the items on the left more.

DevOps and Other Frameworks: Improvement Kata

Correctly complete each of the following statements.

Improvement Kata
1. Understand the _____
2. Grasp the _____ condition
3. Establish the next _____ condition
4. _____ toward the target condition

DevOps Values: Culture Matching Exercise

In the blank before each term in Column A, write the letter corresponding to the definition from Column B.

Column A	Column B
_____ Cultural debt	A. Describes and predicts the stages of personal and organizational reaction to major changes.
_____ Change fatigue	B. Measures a person's behavioral choices under certain conflict situations.
_____ Collaboration	C. Cultures that encourage good information flow, cross-functional collaboration, shared responsibilities, learning from failures and new ideas.
_____ Organizational culture	D. A general sense of apathy or passive resignation towards organizational changes by individuals or teams.
_____ Kubler Ross Change Curve	E. The values and behaviors that contribute to the unique social and psychological environment of an organization.
_____ High-trust culture	F. People jointly working with others towards a common goal.
_____ Thomas Kilmann Inventory	G. Occurs when cultural considerations are disregarded or deferred in favor of growth and innovation.

DevOps Values: Automation Matching Exercise

In the blank before each term in Column A, write the letter corresponding to the definition from Column B.

Column A	Column B
_____ DevOps Toolchain	A. Any element in a software development project including documentation, test plans, images, data files and executable modules
_____ Containers	B. A software architecture that is composed of smaller modules that interact through APIs and can be updated without affecting the entire system.
_____ Deployment Pipeline	C. A set of protocols used to create applications for a specific OS or as an interface between modules or applications.
_____ Artifact	D. A method for splitting a server into multiple partitions called "containers" or "virtual environments" in order to prevent applications from interfering with each other,
_____ Microservices	E. An approach to software development that packages pieces of code so that they can quickly be plugged in and run on Linux (or Linux-like) OS.
_____ Open Source	F. An automated process for managing all changes, from check-in to release.
_____ Application Programming Interface (API)	G. Software that is distributed with its source code so that end user organizations and vendors can modify it for their own purposes.
_____ OS Virtualization	H. The tools needed to support a DevOps continuous integration, continuous deployment, and continuous release and operations initiative.

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Study Aids Answer Key

What is DevOps? Why Now?

In the blank before each term in Column A, write the letter corresponding to the definition from Column B.

Column A	Column B
__C__ DevOps	A. A shift from competing by selling products and services to competing by selling measurable results important to the customer.
__D__ Bi-Modal IT	B. A model that emphasizes an understanding of the business' "why" before focusing on the "what" and "how".
__A__ Outcome Economy	C. Cultural and professional movement that stresses communication, collaboration and integration between software developers and IT operations professionals.
__B__ Golden Circle	D. Where two distinct methodologies exist in the same company, sometimes in separate teams.

DevOps Practices: The Three Ways

Specify the correct order of The Three Ways by entering 1-3 in the left column.

Three Ways Order	The Three Ways
3	Create a culture that fosters experimentation and learning
1	Understand and increase the flow of work
2	Create short feedback loops that enable continuous improvement

DevOps Practices: Matching Exercise

In the blank before each term in Column A, write the letter corresponding to the definition from Column B.

Column A	Column B
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__H__ ChatOps	E. Set of practices that enable every change that passes automated tests to be automatically deployed to production.
__E__ Continuous Deployment	F. A methodology for identifying the most important limiting factor (i.e., constraint) that stands in the way of achieving a goal and then systematically improving that constraint until it is no longer the limiting factor.
__A__ Continuous Delivery	G. A mindset that "everyone is responsible for security" with the goal of safely distributing security decisions at speed and scale to those who hold the highest level of context without sacrificing the safety required.
__C__ Rugged software development	H. An approach to managing technical and business operations through a group chat room.
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DevOps Practices: Continuous Integration

Place a check mark next to concept(s) that are necessary for Continuous Integration

Order	Stage
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	Waterfall software development
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<input checked="" type="checkbox"/>	Production-like environment
	Continuous deployment
<input checked="" type="checkbox"/>	Consistent coding standards

DevOps Practices: Continuous Delivery

Specify the correct order of the Continuous Delivery pipeline by entering 1-5 in the left column.

Order	Stage
4	Stage
1	Code and Commit
2	Build
3	Test
5	Deploy

DevOps Practices: Continuous Testing

Specify in the left column whether the approach is “shift left” or “shift right”

Order	Stage
Left	Security testing
Right	Testing in production
Left	End to end use-case testing
Left	Test driven development

DevOps and Other Frameworks: Matching Exercise

In the blank before each term in Column A, write the letter corresponding to the definition from Column B.

Column A	Column B
__D__ Agile Manifesto	A. A proven, publicly available framework for applying Lean-Agile principles and practices at enterprise scale.
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__B__ Agile Software Development	C. Production philosophy that focuses on reducing waste to improve overall customer value.
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Lean	A3 Thinking
ITSM	Process Model
ITSM	ITIL
Agile	Product Owner
Lean	Value Stream
ITSM	Service
Lean	Muri, Muda, Mura
ITSM	Release Management

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DevOps and Other Frameworks: Improvement Kata

Correctly complete each of the following statements.

Improvement Kata
1. Understand the <u>long term vision or direction</u>
2. Grasp the <u>current</u> condition
3. Establish the next <u>target</u> condition
4. PDCA and experiment <u> </u> toward the target condition

DevOps Values: Culture Matching Exercise

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