SAFe® 4 Product Owner / Product Manager Exam Study Guide (V4.5.0)

Scaled Agile Professional Certification Program

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Welcome to Role-Based Learning!

Scaled Agile's role-based offerings focus on the skills, knowledge, and experience required to successfully perform the job. As part of your SAFe learning journey we encourage you to attend training, read recommended books and articles, take advantage of videos and enablement, gain some real-world experience in the role, and then take the exam.

About This Study Guide

This study guide is designed to provide relevant and content-specific exam information such as the certification role description, prerequisite skills and knowledge, exam objectives, and a comprehensive reading list. Reviewing this study guide does not guarantee success on the exam but it will provide guidance on your journey to become SAFe certified.

The sections in this study guide map to the course. There is additional information in this study guide around the certification role that has been defined by our subject matter experts (SMEs).

Preparing for the Exam

Congratulations on taking the first step towards becoming part of a growing community of SAFe certified professionals!

Preparation	Required / Recommended	Access
☐ Course Attendance	Required	Classroom Training: SAFe Product Owner / Product Manager
☐ Exam Study Guide • Certification Role Description • Prerequisite Skills/Knowledge • Target Candidate Standard • Exam Objectives • Reading List	Recommended	Learning Plan in the SAFe Community Platform
☐ Sample Test	Recommended	On SAI website: SAFe Product Owner / Product Manager course page
☐ Practice Test	Recommended	Learning Plan in the SAFe Community Platform
☐ Exam	Required	Learning Plan in the SAFe Community Platform

Exam Details

Information such as number of questions, time on exam, and exam format can be found under "Exam Details" at: www.scaledagile.com/popm.

Course Attendance

The first step towards becoming a SAFe® Certified Professional is to attend the SAFe Product Owner / Product Manager training class. Course attendance is required (all days) and completion provides access to the exam which is part of the complete SAFe Learning Plan. A complete list of courses, including dates and locations, is on the Scaled Agile website.

Please note that attending the class does not guarantee passing the exam. Please take the time to review the materials covered in this study guide.

Certification Role – SAFe 4 Certified Product Owner / Product Manager

A SAFe® 4 Certified Product Owner/Product Manager is a SAFe professional who works with customers and development organizations to identify and write requirements.

Key Areas of Competency
- Apply Lean-Agile mindset and SAFe principles and practices
- Identify customer needs
- Write Epics, Capabilities, Features, and Stories
- Prioritize work to deliver value to the enterprise

Prerequisite Skills and Knowledge
- Experience in Agile
- Experience in Lean

Target Candidate (Qualifying Standard: 5 Levels of Competency)
This job role is defined as part of the Job Task Analysis and is based on a standardized 5 levels of competency. Candidates who pass this exam have met this qualifying standard and can demonstrate knowledge or perform skills at the designated level below:

1 - [Beginner] Minimal knowledge or experience
2 - [Novice] Some knowledge or experience with assistance
3 - [Proficient] Capable of performing tasks with some assistance << SAFe 4 Certified Product Owner / Product Manager
4 - [Advanced] Fully competent in performing tasks with little assistance
5 - [Expert] Content developer or contributor with no assistance

Exam Objectives Overview

The first step in developing role-based curriculum is to conduct a Job Task Analysis (JTA) workshop where a group of subject matter experts (SMEs) work together to define the tasks, skills, and knowledge related to a specific job role. The JTA creates the foundation for the exam objectives and competency standard which serve as the basis for the exam. The output of the JTA includes: key areas of competency, prerequisite skills and knowledge, the candidate qualifying standard, and a comprehensive list of objectives and tasks related to the job role.

Scaled Agile SMEs use these objectives to develop exam questions. It is recommended you review these objectives and ask yourself: Do you know how to complete the tasks in the objective? Are you familiar with the terms and concepts? Do you know the outcome of NOT performing the tasks correctly (anti-patterns)? Most objectives are covered on the exam so be sure to review the materials.

Exam Objectives: Sections, Tasks, and Subtasks

Sections are the main job role topics identified during the JTA process. Tasks that are related to each section are grouped under each section and are made up of subtasks which are the actions, knowledge, or steps to complete the task. Example:

SECTION HERE	
1.1	TASK HERE
1.1.1	SUBTASK HERE

The objectives specific to this exam begin below and map to the course materials either at a high level or in some cases with more detail.

SAFe 4 Product Owner / Product Manager Exam Objectives

SECTION 1: Applying SAFe in the Lean Enterprise	
1.1	Recognize the problem to be solved
1.1.1	Identify team/company/enterprise problems
1.1.2	Identify additional issues that are specific to business context
1.1.3	Describe the Scaled Agile Framework® (SAFe®)
1.2	Explore SAFe Foundations
1.2.1	Define the function of an Agile Team

1.2.2	Explain the purpose of integration points
1.2.3	Explain why teams apply test automation
1.2.4	Describe aspects of Architectural Runway
1.2.5	Explain how an Agile Release Train applies a systems view
1.2.6	Summarize how Program Increment Planning synchronizes an Agile Release Train
1.2.7	Describe the elements of SAFe DevOps
1.2.8	Explain the elements of Lean Portfolio governance
1.2.9	Describe how Large Solution SAFe is coordinated by a Solution Train
1.2.10	Explain the function of Full SAFe for large enterprises
1.2.11	Describe the purpose of the SAFe Implementation Roadmap

SECTION 2: Relate a Lean-Agile Mindset to the Product Owner/Product Manager (PO/PM) Roles	
2.1	Connect the Product Owner and Product Manager roles
2.1.1	Compare traditional vs Agile approaches to the PO and PM responsibilities
2.1.2	Compare the PO, PM, and team roles and activities
2.1.3	Describe and compare other Agile Release Train roles
2.1.4	Identify ways to facilitate PO/PM collaboration
2.2	Embrace a Lean-Agile mindset
2.2.1	Describe the Lean-Agile values that form the House of Lean
2.2.2	Explain the values described in the Agile Manifesto
2.2.3	Summarize the SAFe Lean-Agile Principles

	SECTION 3: Collaborating with Lean Portfolio Management
3.1	Collaborate with the Lean Portfolio Management function
3.1.1	Describe the SAFe Portfolio Level including the principles, practices, and roles needed to initiate and govern a set of development value streams
3.1.2	Explain the Lean Portfolio Management function and related roles
3.1.3	Review the functions of strategy and investment funding collaboration
3.1.4	Contrast Agile Program Guidance collaboration and Lean Governance collaboration
3.1.5	Identify ways SAFe provides transformational patterns to move from traditional mindsets to a Lean Portfolio Collaboration
3.2	Detail the role of the Epic Owner
3.2.1	Identify key aspects and responsibilities of the Epic Owner
3.2.2	Explain ways to prepare the Epic through the role of the Epic Owner
3.2.3	Identify ways to make the Epic Owner role collaborative
3.3	Use Lean Startup cycles to foster innovation
3.3.1	Identify ways to foster innovation with the Lean Startup Cycle
3.3.2	Describe good and bad ways to foster innovation
3.4	Develop Epic Hypothesis Statements
3.4.1	Define an Epic Hypothesis
3.4.2	Explain the structure of the Epic Hypothesis Statement template
3.4.3	Describe why non-functional requirements (NFRs) are key architecture concerns; identify examples of NFRs at each level of the Lean Enterprise
3.4.4	Draft an Epic Hypothesis Statement
3.5	Contribute to a Lean Business Case
3.5.1	Identify key elements of a Lean Business Case

3.5.2	Create a Lean Business Case
3.6	**Visualize flow using a Portfolio Kanban**
3.6.1	Describe how the Portfolio Kanban system manages the flow of Epics
3.6.2	Identify the stages of a prototypical Portfolio Kanban system
3.6.3	Explain aspects of a "Go/No Go" decision
3.6.4	Identify ways the Portfolio Kanban system is tightly connected to the cadence of the Agile Release Trains
3.6.5	Describe the relationship of Epics and the Portfolio Backlog
3.7	**Elaborate Features for the Minimum Viable Product (MVP)**
3.7.1	Describe Features in a SAFe context
3.7.2	Identify places where Features come from
3.7.3	Draft Benefit Hypothesis Statements that describe MVP Features

SECTION 4: Continuously Explore Customer Needs	
4.1	**Explore customer needs**
4.1.1	Explain the process and components of Continuous Exploration
4.1.2	Identify how responsibilities shift when Epics move from the Portfolio Backlog to implementation
4.1.3	Describe Continuous Exploration collaboration
4.2	**Synthesize information for the Vision and Roadmap**
4.2.1	Explain how Collaboration and Research Synthesis work together
4.2.2	Describe common methods used to Prepare the Vision
4.2.3	Identify Inputs to the Solution and Program Vision

4.2.4	Describe ways the Vision inspires action	
4.2.5	Describe the SAFe Roadmap and its attributes	
4.3	**Visualize Feature and Enabler flow using a Program Kanban**	
4.3.1	Explain the elements of a Kanban system and how value flows	
4.3.2	Describe the process and components of the Continuous Delivery Pipeline Learning Cycles	
4.3.3	Create a Program Kanban that includes Work-in-Process limits	
4.4	**Prioritize the Program Backlog**	
4.4.1	Explain ways to manage and prioritize the flow of work into the Program Backlog	
4.4.2	Describe different forms of non-economic-based prioritization and their resulting impact	
4.4.3	Explain how to prioritize Features for optimal return on investment	
4.4.4	Identify the components of Cost of Delay	
4.4.5	Describe how to minimize Cost of Delay using WSJF	
4.4.6	Calculate WSJF with relative estimating	
4.4.7	Collaborate with other roles to sequence work and build architectural runway	
4.4.8	Apply types of service to deliver the right mix of Features	
4.5	**Estimate and forecast the backlog**	
4.5.1	Identify ways to perform relative estimating	
4.5.2	Describe estimating successive refinements to identify the effort to implement a Feature	
4.5.3	Estimate Feature development costs based on story points	
4.5.4	Apply size and velocity information to estimate duration	
4.5.5	Explain how to estimate Epics in SAFe	

4.5.6	Forecast work from the Portfolio Backlog
4.5.7	Identify ways to effectively ensure organizational readiness

SECTION 5: Executing the Program Increment	
5.1	**Create alignment with PI Planning**
5.1.1	Identify inputs for PI Planning
5.1.2	Identify the successful PI Planning outputs (PI Objectives, Program Board)
5.1.3	Describe items needed to prepare for PI Planning
5.1.4	Describe the roles of POs and PMs during PI Planning
5.1.5	Participate in PI Planning activities
5.1.6	Describe how to support the team objectives and assign business value
5.1.7	Describe activities the PO and PM does after PI Planning
5.2	**Decompose Features into Stories**
5.2.1	Explain Feature decomposition and how Features drive user stories
5.2.2	Describe the Team Backlog and all elements including user and enabler stories, non-functional requirements, etc.
5.2.3	Identify the three primary sources of Team Backlog items
5.2.4	Describe user stories and how they guide the "Three C's"
5.2.5	Define the four types of Enabler stories
5.2.6	List patterns used to break Features into stories
5.2.7	Describe how user stories are accepted and the basis for acceptance criteria
5.2.8	Write acceptance criteria

5.2.9	Perform Feature estimation
5.2.10	Apply Estimating Poker for fast, relative estimating
5.3	**Plan the Iteration**
5.3.1	Explain the steps involved in planning and committing
5.3.2	Define Iteration goals
5.3.3	Explain how a team can commit to their Iteration goals
5.3.4	Explain the importance of Iteration planning for Kanban teams
5.3.5	Describe the role of the PM and PO during planning around the iteration
5.4	**Execute the Program Increment (PI)**
5.4.1	Describe how SAFe Agile teams power the Agile Release Train (ART)
5.4.2	Explain how Program events create a closed loop system to keep the train on the tracks
5.4.3	Conduct the Daily Stand Up
5.4.4	Explain how the Scrum of Scrums and the PO Sync work together for the ART Sync
5.4.5	Sequence Stories and prioritize team the backlog
5.4.6	Conduct the backlog refinement session
5.4.7	Describe how the Iteration Review provides measures of progress into the program
5.4.8	Define Continuous Integration and describe how it is used in the PI
5.4.9	Explain how to Continuously Integrate and Test Stories
5.4.10	Demonstrate the full Solution increment to stakeholders every Iteration
5.4.11	Discuss the importance of new system increments every two weeks
5.4.12	Define Continuous Deployment and describe how it is used in the PI

5.4.13	Describe how to create a DevOps culture using the CALMR approach
5.4.14	Perform an Iteration Retrospective
5.4.15	Describe the Innovation and Planning Iteration and explain why it is necessary
5.4.16	Explain the steps needed to conduct Inspect and Adapt
5.5	**Release on Demand**
5.5.1	Define the SAFe Definition of Done (DoD)
5.5.2	Identify DoDs for each: Team Increment, System Increment, Solution Increment, and Release
5.5.3	Explain the importance of having the ability to Release on Demand and how it is integral to the Continuous Delivery Pipeline
5.5.4	Explain why it is important to decouple cadence from releasing on demand
5.5.5	Architect the Solution for incremental release
5.5.6	Describe various Release on Demand strategies

SECTION 6: Defining the PO/PM Roles and Responsibilities	
6.1	**Characterize the role of the Product Owner**
6.1.1	Explain Product Owner responsibilities
6.1.2	Identify potential candidates for the Product Owner role
6.1.3	Describe Product Owner attributes
6.1.4	Describe the Product Owner in the Enterprise
6.2	**Characterize the role of the Product Manager**
6.2.1	Explain Product Manager responsibilities
6.2.2	Describe Product Manager attributes

6.2.3	Compare Product Owner and Product Manager governance from a content authority perspective
6.3	Examine other key program collaboration roles
6.3.1	Identify the stakeholders in a given environment
6.3.2	Create a potential collaboration model for Epics in the enterprise

Reading and Reference List for Exam

As part of the exam development process, each exam question is assigned a reference where the answer can be found. The references are converted into a comprehensive reading list included below. Be sure to read the links and resources contained in the reading list because there is at least one exam question written to each resource.

Please remember that the goal of this reading list is not only to be able to answer the exam questions but also to provide a broader context for learning.

Scaled Agile Website Resources
At least one exam question is written from these resources (in alphabetical order).
- www.scaledagileframework.com/assume-variability-preserve-options/
- www.scaledagileframework.com/base-milestones-on-objective-evaluation-of-working-systems/
- www.scaledagileframework.com/continuous-exploration/
- www.scaledagileframework.com/customer/
- www.scaledagileframework.com/decentralize-decision-making/
- www.scaledagileframework.com/enablers/
- www.scaledagileframework.com/epic/
- www.scaledagileframework.com/implementation-roadmap/
- www.scaledagileframework.com/pre-and-post-pi-planning/
- www.scaledagileframework.com/product-and-solution-management/
- www.scaledagileframework.com/product-owner/
- www.scaledagileframework.com/program-and-solution-backlogs/
- www.scaledagileframework.com/release-on-demand/
- www.scaledagileframework.com/roadmap/
- www.scaledagileframework.com/safe-lean-agile-principles/
- www.scaledagileframework.com/story/
- www.scaledagileframework.com/vision/
- www.scaledagileframework.com/whats-new-in-safe-45/
- www.scaledagileframework.com/wsjf/

Additional Website Resources
- http://agilemanifesto.org/

Scaled Agile Download Resources

The exam covers main ideas and concepts found in these resources on the
www.scaledagileframework.com website:

- SAFe Big Picture
- SAFe 4 Glossary
- SAFe Implementation Roadmap
- Case Studies

Required Books

- SAFe 4 Product Owner/Product Manager Student Workbook (only available from taking the course)
- SAFe Distilled Book (The Kanban Board section, p.143-146)
- The Principles of Product Development Flow by D. Reinertsen (p.194)

Know the Way: Lean-Agile Leader's Reading List

A recommended reading list is included as part of the course. This content is not necessarily covered on the exam and for your reference only.

Books Referenced in the Course

- *SAFe® 4.0 Distilled* by Richard Knaster and Dean Leffingwell
- *Principles of Product Development Flow* by Don Reinertsen
- *The Lean Machine* by Dantar Oosterwald
- *Lean Product and Process Development* by Allen Ward and Durward Sobeck II
- *Agile Software Requirements* by Dean Leffingwell
- *The Goal* by Eliyahu Goldratt
- *Switch* by Chip Heath and Dan Heath
- *The Five Dysfunctions of a Team* by Patrick Lencioni
- *Managing for Excellence* by David Bradford and Allan Cohen
- *Out of the* Crisis by W. Edwards Deming

Articles Referenced in the Course

- www.scaledagileframework.com/agile-teams/
- www.scaledagileframework.com/architectural-runway/
- www.scaledagileframework.com/continuous-delivery-pipeline/
- www.scaledagileframework.com/devops/
- www.scaledagileframework.com/epic-owner/
- www.scaledagileframework.com/features-and-capabilities/
- www.scaledagileframework.com/inspect-and-adapt/
- www.scaledagileframework.com/iteration-execution/
- www.scaledagileframework.com/iteration-planning/
- www.scaledagileframework.com/iteration-retrospective/
- www.scaledagileframework.com/large-solution-level/
- www.scaledagileframework.com/lean-portfolio-management
- www.scaledagileframework.com/pi-objectives/
- www.scaledagileframework.com/pi-planning/

- www.scaledagileframework.com/portfolio-backlog/
- www.scaledagileframework.com/portfolio-kanban/
- www.scaledagileframework.com/program-increment/
- www.scaledagileframework.com/right-sizing-features-for-safe-program-increments/
- www.scaledagileframework.com/team-backlog/
- www.scaledagileframework.com/team-kanban/

Search the Scaled Agile Framework Site

Need help finding a SAFe article? Looking for more details about the SAFe Big Picture or one of the SAFe roles? Use the web search option on www.scaledagileframework.com to search the entire site based on your key search terms.
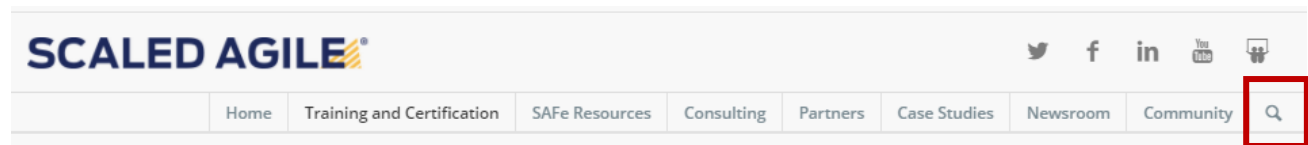
Sample Test

The sample test provides sample (not actual) content and format of the questions that are on the exam. Performance on the sample test is NOT an indicator of performance on the exam and this should not be considered an assessment tool. The sample test (.pdf) is available on the Scaled Agile external website at: www.scaledagile.com/popm.

Practice Test

The practice test is designed to be predictive of success on the actual exam. It contains the same number of questions as the exam, same level of difficulty, covers the same content areas (using different questions), and has the same timebox for completion. It is available on the Scaled Agile Community Platform as part of your Learning Plan.

The practice test is free and you can take it as many times as you like; however it is the same bank of questions randomized in a different order. Use the practice test score report to focus on areas where you may need improvement.

Note that the practice test falls under the same candidate agreement policy and is not authorized to be copied, shared, or reproduced in any way.

Learning Journey: Check List

- ☐ Attend the course
- ☐ Study based on the course and exam study materials provided
- ☐ Incorporate your learnings into your real-world experiences
- ☐ Take the practice test on the SAFe Community Platform

    If you passed the practice test, then you are ready to take the exam.

    If you did NOT pass the practice test, review how you did by section on the score report. Focus on the areas where you need improvement. You can take the practice test as many times as you like; however, it is the same bank of questions randomized in a different order.

- ☐ Take the actual exam through the SAFe Community Platform
- ☐ Pass the exam and become a member of the SAFe Certified global community
- ☐ Share your [SAFe Certified Digital Badge](#) and have your skills recognized worldwide
- ☐ Continue your learning journey through active participation in your Community of Practice on the [SAFe Community Platform](#)

Thank You - Subject Matter Experts

This exam and related study materials are made possible by a very dedicated group of global SAFe subject matter experts. Scaled Agile thanks these individuals for their hard work, focus, and willingness to dedicate many hours to the success of this project.

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