Enterprise Spring 4.2 Certification Study Guide

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Overview

This guide is designed to help you prepare for the Enterprise Spring 4.2 exam.

The certification exam is based on the Pivotal's 4-day Enterprise Spring training and the materials provided with it are the ideal source to use for preparation. However you need not have taken the course to sit the exam. Of course as with any certification the most valuable part, besides recognition, is the learning process. Hence we encourage you to take time to experiment and follow your curiosity when questions arise.

A 4-day course contains a lot of material. To help you focus your efforts and to know when you're ready we've put together this guide. It contains a list of topics and a list of further resources. Topics are organized by subject area, where each topic contains a description of what you should make sure you know.

The list of topics can be used as a check-list. The training materials can be used as a point of reference and as a learning ground. The list of resources is where you can go further for getting answers.

One possible way to prepare is to do the following for a given training module:

1. Review the slides, making notes of questions
2. Work through the lab (if there is one)
3. Review the list of topics that matches to the module by subject area
4. Use the lab to experiment with anything you need to spend more time on
5. Use the provided list of resources to look for further answers

Of course there are many more ways to organize your efforts. You can pair up with someone else planning to take the exam or review all presentations for a given subject area before going through the labs. Or maybe you have access to actual applications you can review to test your knowledge.

Please keep in mind that you are expected to have good working knowledge of all the topics listed. Most of the questions will be very general, however you will be asked a few advanced questions.
Logistics

When you are ready to test and validate your product knowledge, please visit pivotal.io/training/certification to purchase an industry-recognized Pivotal certification exam.

Pivotal partners with Exams Local to remotely proctor our exams. Our certification exams may be taken from a location of your choosing anywhere in the world provided you can meet the basic system and test environment requirements and have a valid form of photo identification.

For help with your exam purchase, exam registration process, credentials verification, or other questions related to our certification program, process, and procedures, please visit pivotal.io/training/faq/certification.

The Exam

The exam itself is a computer-based exam. The exam software first gives you some general instructions: how to navigate, how to mark a question, and so forth - please read it carefully.

Once you have agreed that you want to start, you have 90 minutes to answer 50 multiple-choice questions. You must answer 38 questions correctly (76%) in order to pass the exam.

Basic exam technique applies: read each question carefully and answer the question that was asked not what you thought was asked.

Exam FAQ

1. Is there anything in the exam, which was not covered in the course?
   No.

2. Do I have to remember class names and method signatures?
   No. We think that this is why you are using an IDE - for us it's much more important that you've understood the concepts rather than learning method signatures. However you should recognize key Spring Web classes, configuration and properties in code examples.

3. Do I have to write, complete or rearrange source code?
   No. But you should be able to read a snippet of code and understand what it's doing. This might be an example of a class implementing a Controller and you will then see a couple of related questions. We do not ask you questions on things an IDE can do for you, like checking if the code will compile.

4. Do I have to know any other APIs like JavaScript or JSP in Detail?
   No. Of course you should be able to read, understand and use JavaScript or JSP wherever it is necessary but this is not an exam about either.
5. *Are the advanced slides also part of the exam?*

No. Only the content presented before each chapter lab slide will be on the exam. Any course content presented after any chapter lab will not be on the exam. No content from the optional chapters will be on the exam.

**Exception:** Please note that in the 4.2 version of the course notes, the material after the lab-slide in the Getting Started section (entitled “Simplifying Configuration”) is required for the exam. In the 4.3 version of the course this material has been moved to the “Spring MVC Controllers section to remove this anomaly.
Topics

The following is a list of topics, each of which is likely to have questions on the exam. The topics are organized by subject area but they do not exactly reflect the module names in the course.

Several of the bullet points below overlap, asking the same (or a related) question in a different way. The answer to more than one bullet point question may be the same as the answer to another question just before or after. Don’t let this confuse you.

General Integration & Spring Task Abstraction

GENERAL
- General integration styles and their pros and cons
- The building blocks of Java Concurrency API
- Spring Task Executor and Task Scheduler configuration and usage

RESTful services with Spring-MVC

GENERAL
- The main REST principles

REST SUPPORT IN SPRING-MVC
- Spring-MVC is an alternative to JAX-RS, not an implementation
- The @RequestMapping annotation, including URI template support
- The @RequestBody and @ResponseBody annotations
- The functionality offered by the RestTemplate

JMS with Spring

GENERAL
- Where can Spring-JMS applications obtain their JMS resources from
- The functionality offered by Spring’s JMS message listener container, including the use of a MessageListenerAdapter through the 'method' attribute in the <jms:listener/> element
- The functionality offered by the JmsTemplate

Transactions

LOCAL JMS TRANSACTIONS WITH SPRING
- How to enable local JMS transactions with Spring’s message listener container
- If and if so, how is a local JMS transaction made available to the JmsTemplate
• How does Spring attempt to synchronize a local JMS transaction and a local database transaction
• The functionality offered by the JmsTransactionManager

JTA AND TWO-PHASED COMMIT TRANSACTIONS WITH SPRING
• What guarantees does JTA provide that local transactions do not provide
• How to switch from local to global JTA transactions
• Where can you obtain a JTA transaction manager from

Batch processing with Spring Batch

GENERAL
• Main concepts (Job, Step, Job Instance, Job Execution, Step Execution, etc.)
• The interfaces typically used to implement a chunk-oriented Step
• How and where state can be stored
• What are job parameters and how are they used
• What is a FieldSetMapper and what is it used for

Spring Integration
This is the most important part of the course accounting for 30% of the questions you will be asked.

GENERAL
• Main concepts (Messages, Channels, Endpoint types)
• Pay special attention to the various Endpoint types and how they're used
  • Routers, Filters, Service Activators, Splitters/Aggregators, Gateways …
• How to programmatically create new Messages
• Using chains and bridges
• Familiarize yourself with the most common inbound and outbound adapters –

SYNCHRONOUS VS. ASYNCHRONOUS MESSAGE PASSING
• The different Channel types and how each of them should be used
• The corresponding effects on things like transactions and security
• The need for active polling and how to configure that

Spring XD
Spring XD is no longer required for Certification as it has been replaced by Spring Cloud Data Flow.
Resources

This section contains a list of resources relating for learning.

Spring Community Forums
Spring questions are now handled through StackOverflow. For your convenience we maintain a curated list of questions at https://spring.io/questions. Look for existing discussions or start your own, take advantage of one of the best parts of Spring: its community

Spring Source Blog
Point your favorite RSS reader or come back every so often for detailed, quality posts by Spring developers

Reference Documentation
Add bookmarks in your browser to the reference documentation pages for Spring and the related frameworks. You may find some of the Guides useful as well.

Spring By Example
An older but still useful repository with complete code samples and the ability to contribute your own samples. There is a section on Enterprise Spring.

Web Sites
It's hard to single out individual web sites. There are so many. If we had to name a few they would include Infoq, Dzone, JavaWorld, Spring Hub among many others.

Books
There are many books. It's also hard to find ones that are up-to-date because it takes so much effort to write them or keep them up-to-date, so check the date of the last edition and the version of the framework covered. Publishers like (e.g. Apress, Manning) provide early access to book chapters in PDF as they are being written

Spring Projects JIRA
Most likely not the first place to come to in the beginning, but overall a great learning resource when looking up information on very specific issues or new features. You can read comments, leave comments, as well as vote. Sometimes discussions on the community forums result in the creation of issues in JIRA.
Conclusion

When you worked through this guide and know all the answers, we are pretty confident that you should pass the certification. It's recommended to do it as soon as possible and we wish you good luck with it.

Thank you again for choosing Pivotal as your education partner and good luck with your projects.

If you have encountered any errors, have any suggestions or enquiries please don't hesitate to contact your trainer or send an email to education@pivotal.io.