**How to Pass the AWS Machine Learning Speciality Exam**

**Why and how to attempt certification**

Considering taking the AWS Machine Learning Specialty certification? I took the test in October 2022 and wasn’t able to find much updated information about it. This post is designed to help you decide whether to take the exam and how to invest your time if you decide to go for it.



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Let’s get to it! 🚀

**Deciding whether to take the test**

To see if Machine Learning specialty exam is a good fit for you, let’s look at reasons to take it and my suggested prerequisites.

**Why take this test?**

1. Sign up for this test if you want to give yourself a deadline to learn more about AWS’s data engineering and machine learning products. If you study for the exam and try out the services you’ll gain knowledge in these areas.
2. If you pass the test you’ll demonstrate to others that you know a bit about AWS and its offerings in the data space. Individual projects with code (and accompanying blog posts) are a great way to demonstrate your skills. But it’s hard to show a breadth of skills that matches the range of cloud offerings. Passing a cloud provider certification test shows you have knowledge of a wide range of cloud technologies.

**Prerequisites**

1. I suggest you know a good bit of data science before taking this exam. If you want to learn data science, studying for this exam isn’t the ideal way to get there. I’d suggest a deeper dive into data science with a bootcamp, degree program, or rigorous self-study.
2. Some familiarity with AWS. I suggest taking the Cloud Practitioner certification test or another AWS certification exam prior to this one. See all AWS exams [here](https://aws.amazon.com/certification/).
3. It’s helpful to be skilled at taking multiple choice tests. A good deal of focus is required to keep a question’s clauses and the subtle differences in the answers in working memory.
4. You need to have the ability and willingness to pay the $300 test fee. I suggest you view the payment as an investment to help you learn the material regardless of whether you pass the test.

**Why did I take the test?**

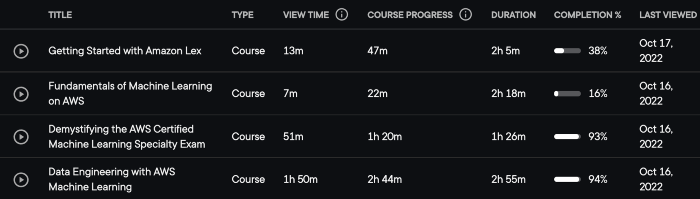
I’ve taken and passed a few cloud provider tests in the past. I took the [Google Cloud Certified Professional Data Engineer exam](https://cloud.google.com/certification/data-engineer) a few years ago. I learned more about the GCP and its data engineering products. When I had COVID and was quarantining this summer, I studied for and took the [AWS Certified Developer Associate](https://aws.amazon.com/certification/certified-developer-associate/) exam. [Here are my study notes](https://docs.google.com/document/d/1UMBRgfsUYQiCUYkc5--viVKCevXJF4FGjwSnTmSXqiE/edit?usp=sharing) for that exam. I wouldn’t recommend it for most data professionals.

I can focus decently well, get into the head of the test writer, and am an avid user of the process of elimination. Although I passed each of the cloud provider tests I’ve taken, I didn’t feel confident of that outcome at the conclusion of any them. I found the US higher education entrance exams — the SAT, ACT, GRE, GMAT, and LSAT to be a good bit easier — and dare I say, more fun.

I took the AWS Machine Learning test because I wanted to learn more about AWS data engineering and data science offerings. I also find tests like these to be a nice challenge. I didn’t have to worry about the cost because my employer, [Prefect](https://www.prefect.io/), kindly provides a learning stipend. So I decided to go for it.

I gave myself a few days to study the AWS-specific material and take the test. I registered for the exam on October 14. I was hoping to schedule my test for the next day or two, but there were no slots available. All this is to say that you might not be able to schedule a test for tomorrow.

I did a little reading about the test and tried out the ten official sample questions and then started watching PluralSight videos. I watched about 5 hours of video in 3 hours of time.



Screenshot of my PluralSight viewing history. Image by Author

**Nuts and bolts**

Start with Amazon’s [exam guide](https://d1.awsstatic.com/training-and-certification/docs-ml/AWS-Certified-Machine-Learning-Specialty_Exam-Guide.pdf). It has a good overview of what to expect.

**Location**

You can take the test remotely or in person. I took it remotely. If taking it remotely, make sure you’ve cleared everything except your keyboard, mouse, and computer from your desk area. You need to have a door that closes you off from others and a quiet area to work. A proctor will be monitoring via camera.

The test is available in English, Japanese, Korean, and Simplified Chinese.

**Questions**

You need a scaled score of 750 on the 100 to 1,000 scale. The test consists of 65 questions with the following breakdown of question types:

* 20% Data Engineering
* 24% Exploratory Data Analysis
* 36% Modeling
* 20% Machine Learning Implementation and Operations

Note that 15 questions are practice ones for future exams that don’t get scored.

All questions are multiple choice or multiple response. Multiple response just means multiple choice with several required answers. Multiple response are rough. Two out of three correct is worth no credit. Ugh. At least the question will tell you the number of answers to choose. 😐

The AWS Machine Learning Specialty certification test is a bear. Don’t feel the least bit bad if you don’t pass it.

**Preparation**

Your level of prior experience, how much time you have to prepare, the importance you place on passing the test, and your approach to taking these kind of tests will factor into your studying plan.

The range of services and topics is large. Here’s the list from the exam guide. Note that this exam guide is for version 2.0 MLS-C01:

Analytics:  
• Amazon Athena  
• Amazon EMR  
• Amazon Kinesis Data Analytics  
• Amazon Kinesis Data Firehose  
• Amazon Kinesis Data Streams  
• Amazon QuickSight  
  
Compute:  
• AWS Batch  
• Amazon EC2  
  
Containers:  
• Amazon Elastic Container Registry (Amazon ECR)  
• Amazon Elastic Container Service (Amazon ECS)  
• Amazon Elastic Kubernetes Service (Amazon EKS)  
  
Database:  
• AWS Glue  
• Amazon Redshift  
  
Internet of Things (IoT):  
• AWS IoT Greengrass  
  
Machine Learning:  
• Amazon Comprehend  
• AWS Deep Learning AMIs (DLAMI)  
• AWS DeepLens  
• Amazon Forecast  
• Amazon Fraud Detector  
• Amazon Lex  
• Amazon Polly  
• Amazon Rekognition  
• Amazon SageMaker  
• Amazon Textract  
• Amazon Transcribe  
• Amazon Translate  
  
Management and Governance:  
• AWS CloudTrail  
• Amazon CloudWatch  
Networking and Content Delivery:  
• Amazon VPC  
Security, Identity, and Compliance:  
• AWS Identity and Access Management (IAM)  
  
Serverless:  
• AWS Fargate  
• AWS Lambda  
  
Storage:  
• Amazon Elastic File System (Amazon EFS)  
• Amazon FSx  
• Amazon S3

The AWS questions on data science topics such as treatment of missing values were rather tricky, even if you are familiar with such things. The literature on such topics is not settled, and the questions sometimes lacked nuance. Again, unless you’re a pro with AWS machine learning and data engineering services and a good test taker, I would make sure you have a strong data science understanding.

The AWS questions on data engineering and machine learning in production are very focussed on Amazon’s products.

For cloud exams, I like to focus intensely for a week or so and then take the exam.

**Key things to study**

Make sure you know a bit about the most popular AWS services: EC2, S3, and Lambda. You’ll want to be comfortable with fundamental AWS concepts such as VPC and IAM, too. [This Twitter thread](https://twitter.com/simonholdorf/status/1572821022381903877) from

[Simon Holdorf](https://medium.com/u/9439af5bf72e?source=post_page-----b00bf0f811ed--------------------------------)

on AWS VPC concepts was the best overview I’ve seen.

My heuristic for cloud provider tests is this: when the company has a special service in the test domain that it’s proud of — often something serverless — you can expect to see questions about it. Further, you can expect that it is likely to be part of the correct answer to a question. These companies want you using their new fancy thing. 🪄

Spend time learning about Athena, Aurora, Kineses, Glue, and Sagemaker and prepare to go with them if you get stuck. In particular, [SageMaker](https://aws.amazon.com/sagemaker/) encompasses a huge range of data science services, so make sure you know it well. Kinesis and Glue are Amazon’s special data engineering products which each have multiple subparts.

I suggest you read the docs for the key services, use them, and ensure you understand them. I suggest taking notes and writing out summaries of the important points. I like using flash cards as part of a spaced repetition system. I talk a bit about using [Anki flash cards](https://apps.ankiweb.net/) in this edition of my [Data Awesome newsletter](https://dataawesome.substack.com/p/data-awesome-14). 🧠

**External Resources**

To learn about the technologies on the test, I watched the above listed videos on Pluralsight. Also, I read miscellaneous blog posts to help me understand how the services worked and how they compared each other.

[A Cloud Guru](https://acloudguru.com/) (ACG) is what I used to help prepare for the GCO Data Engineer test. I wrote about [that experience here](https://towardsdatascience.com/10-days-to-become-a-google-cloud-certified-professional-data-engineer-fdb6c401f8e0). I thought their materials were high quality. Although Pluralsight purchased ACG, you still have to pay for both services as of late Oct. 2022. I took a practiced test with ACG and it was pretty good. I would start with ACG — I started with Pluralsight because that’s where my company had a subscription.

I don’t love learning via videos, but I’ve found them helpful for the cloud computing tests I’ve watched. I just crank up the speed to the fastest level I can stand and still take notes and knock them out.

**Official AWS Docs**

One tricky thing is finding updated learning materials specific to the test. The Pluralsight videos and the ACG practice exam in October 2022 were about two years old.

Not having updated practice materials is tough because cloud services are continually updating their technologies. For example, the study materials I used talked about how you must select how many shards you want for your Kinesis Streams. However, now you can select a mode that scales when you set up your stream. That’s another reason the actual docs are a good place to spend time. For what it’s worth, I read that AWS products will generally be around for at least six months prior to appearing on a test.

**Use the AWS services**

I encourage you to use each of the major technologies that will be covered on the test. This helps you with the test, and also with the real-world implications. Just Don’t forget to turn things off, so you don’t get a nasty bill!

Make sure you have billing alarms set up first! I recently taught an intro cloud computing with AWS course to Georgetown University stats students, and I’m pretty sure that was the most valuable thing I thought.

I spent $20ish trying out things, and most of that was accidental. Thank goodness for billing alarms!

**Practice tests**

The free [10-question practice test](https://d1.awsstatic.com/training-and-certification/docs-ml/AWS-Certified-Machine-Learning-Specialty_Sample-Questions.pdf) provided by Amazon is a good taste of the types of questions you will see on the real exam. I suggest you take that early so you can see what the test is like.

You can purchase additional tests from test-prep sites. I took one and would have taken another if I had more time. I highly recommend taking as many as you can. However, the questions and the results should be taken with a grain of salt. It’s hard to replicate the feel and content of the questions on the test — partly because the practice tests can become outdated.

**Test day**

**Time**

Think about water and a bathroom trip immediately preceding the test.

You have three hours to take the test. That should be sufficient time for looking carefully at all 65 questions. I finished the test with about an hour to spare.

You can mark questions for review later, and I did. For this test, I didn’t go back and look at more than one question where I thought I learned a useful piece of information elsewhere in the test.

**Staying positive in the game**

This is a humbling test. The biggest obstacle might be the little voice inside your head saying you won’t do well as you are struggling to find answers. Stay positive and stick with it. Doing so puts you in the best position to succeed. With a number of experimental questions, you can miss a string of answers and still potentially pass the test.

Just stay positive, narrow your answer choices, go with the answers you judge most likely, and keep rolling.

**Results**

When you’re finished, take a deep breath and go for a walk. You worked hard and gave it your best shot. The process of learning is the most important — not the destination. Try not to worry about how you did because you can’t change it now. 🙂

You should receive your pass/fail test results via email about a day after the exam. You can dig into the emailed link to see how you scored. Individual question are not released. I understand why, but it’s a bit annoying to not see what you missed.

**Wrap**

You’ve learned about whether to take the AWS Machine Learning Speciality Exam Certification and how to prepare for it. If you decide to invest the time, I wish you the best of luck!

If you’ve taken the exam, I’d love to hear about your experience! Feel free to share in the comments.

If you found this post to be useful, please share it on social media so other folks can find it, too. 🎉

I write about data, cloud, Python, and other tech topics, so [follow me](https://jeffhale.medium.com/) if you’re into that stuff.



Source: pixabay.com

Happy studying! 🚀