



Understanding the Professional Data Engineer Certification

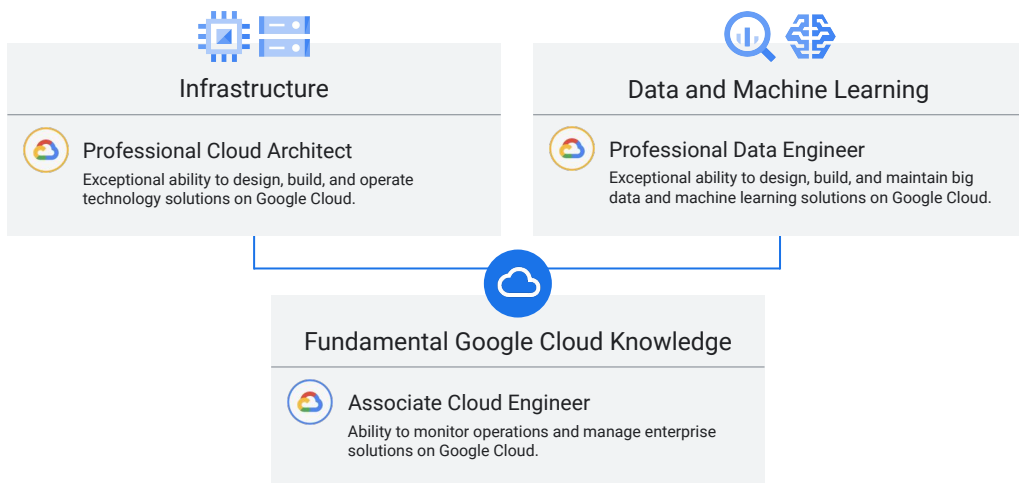
Tom Stern



The main thing you need to know about the Professional Data Engineer certification is that it isn't a theoretical test. The certification has been designed to confirm the skills required of a practitioner, specifically it tests whether you know how to do the job of a data engineer. It doesn't just test whether you know lots of general information, it asks questions to see if you can think like a data engineer and solve problems like a data engineer.

Look, that means the certification is going to be more challenging than other certifications you may have heard about that only test on information, but it also means that the certification means something and that's one reason it's highly valued in the industry. The practical nature of the exam makes it challenging, but it also makes it valuable.

What certs does Google offer for Google Cloud?



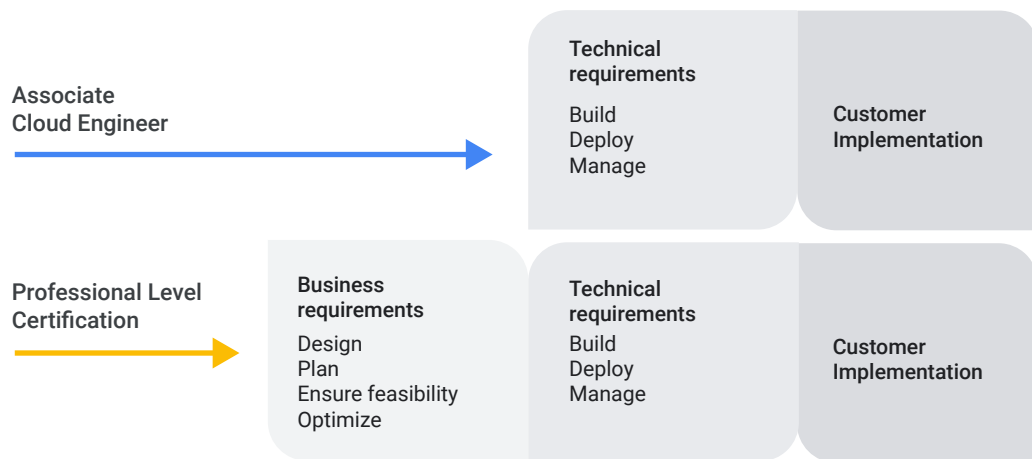
I just want to caution you that the Associate Cloud Engineer is not a simpler and easier Data Engineer exam or Cloud Architect exam.

All of these certifications are based on real-world practical job skills required and used by practitioners in the industry.

A cloud engineer uses the same technology as the data engineer, however their job focus is different and so their skills are different. For example, a data engineer might consider how to design a Dataproc cluster so it meets customer requirements. A cloud engineer might run jobs on the cluster and be more focused on monitoring the cluster and measuring and maintaining its performance. A data engineer designs the solutions and implements it. A cloud engineer operates a solution, monitors it, maintains it and evolves it as business circumstances change.

So which certification or certifications you might want depends on your job role, the job you have or the job you want to have.

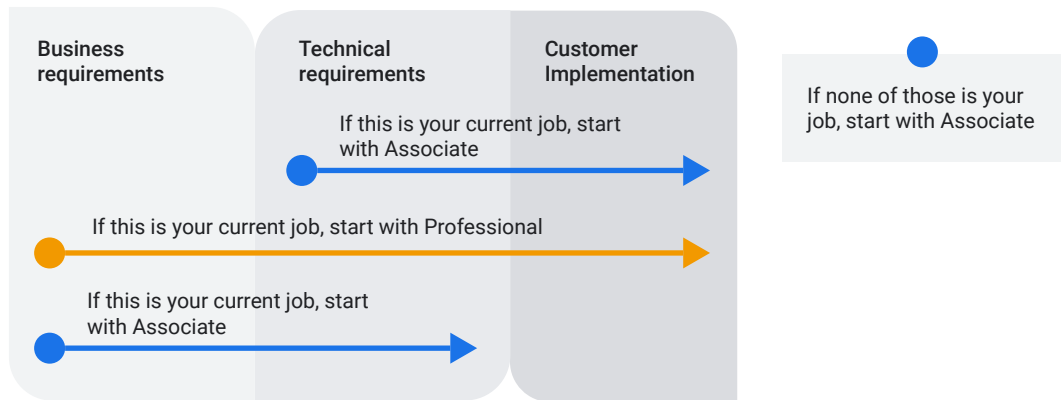
What's the difference between Associate and Professional?



A main differentiator between the professional level of certification and the associate certification is the focus on designing and on business requirements. If you're involved in designing, planning, proof-of-concept and identifying the business needs, then you should be looking at the professional data engineer certification. If you're going to focus on implementing and operating, and on the technical requirements, then you should consider the associated certification.

In addition to the business requirements, there are differences in the technical requirements. For example, a Cloud engineer might need more practice operating and maintaining a solution whereas a data engineer might need to know more about how different options will change how the solution is operated and maintained. They're related technical skills, but serve a different purpose and perspective.

Should I start with Associate Cloud Engineer or Professional Cloud Architect?



Here is some direct advice to help you decide where to start.

If your job focuses mainly on Business requirements and not on implementation, or if your job does not focus on business requirements but only on Technical requirements, start with the Associate Cloud Engineer certification (ACE).

If your job involves all three, business requirements, technical requirements, and implementation, start with the Professional Data Engineer certification.

And if your job is not associated with any of these, start with ACE.

How is the Professional Data Engineer exam administered?

- Visit <https://cloud.google.com/certification/data-engineer> for more info and to register.
- Exam length: 2 hours
- Exam cost: US \$200
- Available globally [Must be taken in person at a Kryterion testing center]
- If you are a Google partner, be sure to **register with your partner domain**.
- You may need to create a new Webassessor account if you do not already have one for Google Cloud certifications.

The exam is about two hours. In the US as an example, the cost is about \$200. You can check local prices and currencies online. The exam is available globally, you have to take it at a criterion testing center.

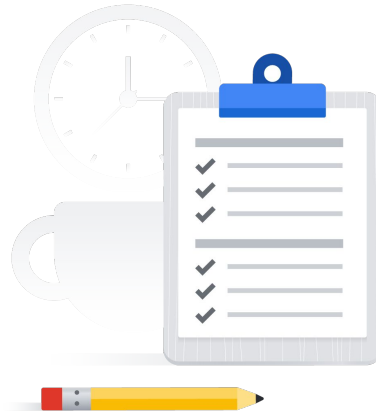
Let's see, what else can I tell you. You're not allowed to have scratch paper, a pen, or notes. No drinks are allowed. You can take a bathroom break, but the time continues to count down and many people report that they used the entire two hours.

Visit <https://cloud.google.com/certification/data-engineer> for more info and to register.

Tips and tricks

First, draw on your own personal experience.
Review the Exam Guides.
Take the practice test.

Pace yourself; there is a timer.
If you are concerned about time, run through the exam and answer the shortest, easiest questions first. Go back to the ones that are more difficult or require multiple answers (there is no partial credit!).

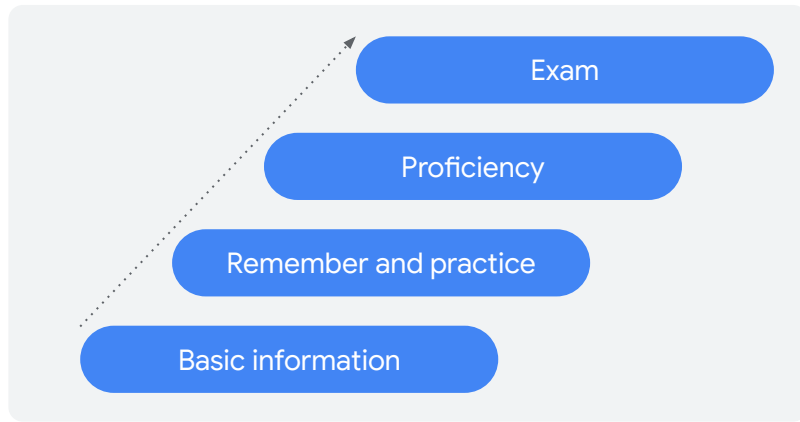


Here's some general tips.

The certification offers a practice test, use it. There's also a lot of opportunities in this course to practice and develop good test-taking skills.

Also I think it's a good idea to look at each possible answer as if it were the only answer available and evaluate whether it could be true or not. Do this before choosing from the alternatives and finally, pace yourself. Avoid getting bogged down on any single question.

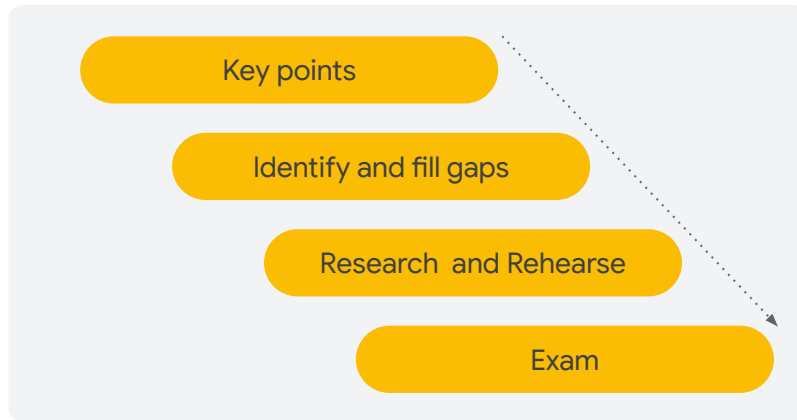
Bottom-up approach



There are two general approaches to preparing for the certification exams.

The first approach which is most common is what I call cram for the exam. That is, you start with basic information, like the information covered in our courses and you review that information and make sure you've mastered and you can recall the majority of it. Then you research and practice, and practice, and practice. In formal education science, this is called the mastery method and once you're proficient, you can attempt the exam.

Top-down approach



This class uses a different approach. We identify key points, some of them are complex or subtle and if you understand and know those points, you have an indicator that you have knowledge of all the elements that go into that solution. If you don't understand a point or sense that you're missing or weak on some aspects, you can note those items and use that as a guide for what to study. Fill in the gaps on what you need to know by going back to the training that contains them or by exploring documentation or labs to solidify your understanding, rehearse the problem-solving skills of the profession and when you're proficient, then you can attempt the exam.

The benefit of the bottom-up approach is that it doesn't skip anything. On the other hand, a lot of time is spent covering things you already know.

The benefit of the top-down approach is that it respects the studying and work you've already done, so it helps you focus much more quickly on what you need to learn. There's far less time spent reviewing information you already know.

Testing strategy

What if you leave an item blank?

You can't take notes during the exam.

You can mark items for later review.

No breaks (clock continues).

No food or drink.

Answer each question. Mark those you are unsure about.

Review unanswered questions and unsure questions.

Review answered questions and make sure they still seem right.

Should you guess or you're better off leaving an item blank?

Well, there's no advantage to leaving a question unanswered. Some of the most important features of this exam is that you can bookmark questions you're unsure about and you can review those questions later. You can actually do iterative rounds if you have the time. So answer the easiest and most certain questions first, then answer the next and the next until what's left are the questions that are hard for you.

The ability to bookmark items and come back to them is really powerful. I suggest that you practice this way, like when you're studying practice recognizing when you don't know something or you're not sure about it and bookmark it for later consideration. Then go back and take a look at your bookmarked answers and see if you still agree with your original response.



Tip...

Use everything you know to sort out exactly what is being asked and surface which information is important.

Many of the tips you'll learn about today are intended to help you sort out the case information and identify the core question.

You need to make sure that you're answering the questions being asked. It's not just an exam taking skill, it's a part of the skills required for a professional data engineer.

Key tip for DE

Think of Data Engineering on Google Cloud as a platform. There are many alternative solutions that could work. Narrow the options down to the one that best meets the business and technical requirements.



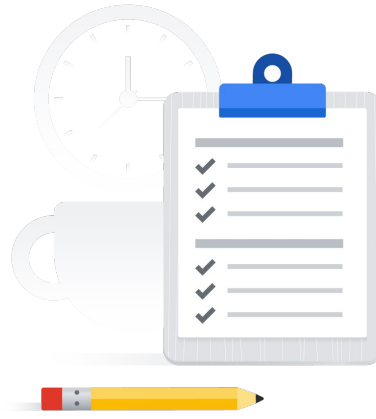
Think of data engineering on Google Cloud as a platform with many different ways to get the job done. There are many solutions.

For example, you can always install open-source software on a Compute Engine instance, like you can install MySQL or Hadoop and that might be one solution, but you can also use services that are provided like Cloud SQL and Dataproc. So quite often there are multiple solutions that could technically work, but there's one best solution that meets the business needs and the technical requirements.

More key tips for DE

For every technology:

- When to use it
- How to control access
- How to manage performance
- Data distribution strategies
- Key features



Finally, I suggest that you identify the fundamental information you need to know for each technology.

What's a technology or service commonly used for, when is it appropriate or best to use that technology, how do you control access to it, is access at the project level or the dataset level or is it perhaps narrower?

Are there different roles defined, how do you monitor and manage performance, and what are the strategies for data distribution, for distributed processing, for scaling, for backup?

What are the key features that give the service unique value and when would you use those features.

As you go through this course, note what you know and what you don't know and that'll help you spend your time wisely studying the areas where you need to learn or learn better.

