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Exam Professional Machine Learning Engineer All Questions

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EXAM PROFESSIONAL MACHINE LEARNING ENGINEER TOPIC 1 QUESTION 8 DISCUSSION

Actual exam question from Google's Professional Machine Learning Engineer

Question #: 8

Topic #: 1

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You work for a public transportation company and need to build a model to estimate delay times for multiple transportation routes. Predictions are served directly to users in an app in real time. Because different seasons and population increases impact the data relevance, you will retrain the model every month. You want to follow Google-recommended best practices. How should you configure the end-to-end architecture of the predictive model?

- A. Configure Kubeflow Pipelines to schedule your multi-step workflow from training to deploying your model.
- B. Use a model trained and deployed on BigQuery ML, and trigger retraining with the scheduled query feature in BigQuery.
- C. Write a Cloud Functions script that launches a training and deploying job on AI Platform that is triggered by Cloud Scheduler.
- D. Use Cloud Composer to programmatically schedule a Dataflow job that executes the workflow from training to deploying your model.

Show Suggested Answer

by  [gcp2021go](#) at June 5, 2021, 6:30 p.m.

Comments

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🗳️ 👤 **Paul_Dirac** Highly Voted 👍 3 years, 4 months ago

Answer: A

A. Kubeflow Pipelines can form an end-to-end architecture

(<https://www.kubeflow.org/docs/components/pipelines/overview/pipelines-overview/>) and deploy models.

B. BigQuery ML can't offer an end-to-end architecture because it must use another tool, like AI Platform, for serving models at the end of the process (https://cloud.google.com/bigquery-ml/docs/export-model-tutorial#online_deployment_and_serving).

C. Cloud Scheduler can trigger the first step in a pipeline, but then some orchestrator is needed to continue the remaining steps. Besides, having Cloud Scheduler alone can't ensure failure handling during pipeline execution.

D. A Dataflow job can't deploy models, it must use AI Platform at the end instead.

👍 🔄 🚩 upvoted 39 times

🗳️ 👤 **q4exam** 3 years, 1 month ago

Dataflow can deploy model this is how you do stream inference on stream

👍 🔄 🚩 upvoted 1 times

🗳️ 👤 **lordcenzin** 2 years, 8 months ago

yes you can but it is not supposed to do that. DF is for data processing and transformation. you would loose all shenanigans kubeflow provide as native.

Among the two answers, i think A is the most correct

👍 🔄 🚩 upvoted 2 times

🗳️ 👤 **mousseUwU** 3 years ago

Please send a source link?

👍 🔄 🚩 upvoted 1 times

🗳️ 👤 **mousseUwU** 3 years ago

I guess it's A

👍 🔄 🚩 upvoted 3 times

🗳️ 👤 **gcp2021go** Highly Voted 👍 3 years, 4 months ago

the answer is D. found similar explanation in this course. open for discussion. I found B could also work, but the question asked for end-to end, thus I choose D in stead of B <https://www.coursera.org/lecture/ml-pipelines-google-cloud/what-is-cloud-composer-CuXTQ>

👍 🔄 🚩 upvoted 11 times

🗳️ 👤 **tavva_prudhvi** 1 year, 7 months ago

D is incorrect. Cloud Composer is a fully managed workflow orchestration service built on Apache Airflow. It is a recommended way by Google to schedule continuous training jobs. But it isn't used to run the training jobs. AI Platform is used for training and deployment.

👍 🔄 🚩 upvoted 1 times

🗳️ 👤 **harithacML** Most Recent 🕒 3 weeks, 6 days ago

Selected Answer: A

Req: retrain the model every month+ Google-recommended best practice+ end-to-end architecture

A. Configure Kubeflow Pipelines to schedule your multi-step workflow from training to deploying your model. : Supports all above

B. Use a model trained and deployed on BigQuery ML, and trigger retraining with the scheduled query feature in BigQuery : Why BigQuery ML when vertexAI/kubflow can handle end to end. BigQuery ML+ traigger only initiate the code run.

C. Write a Cloud Functions script that launches a training and deploying job on AI Platform that is triggered by Cloud Scheduler. : Not recommended by google for end to end ML

D. Use Cloud Composer to programmatically schedule a Dataflow job that executes the workflow from training to deploying your model. : Not recommended by google for end to end ML. what if model fails? matrix monitor?

👍 🔄 🚩 upvoted 1 times

🗳️ 👤 **PhilipKoku** 4 months, 2 weeks ago

Selected Answer: A

A) Kubeflow Pipelines is the answer.

👍 🔄 🚩 upvoted 1 times

🗳️ 👤 **fragkris** 10 months, 3 weeks ago

Selected Answer: A

Chose A

👍 🔄 🚩 upvoted 1 times

🗳️ 👤 **Sum_Sum** 11 months, 1 week ago

Selected Answer: A

D. Dataflow job can't deploy models

D - Datarow job can't deploy models
B,C are not - are not complete solutions
leaving A to be the correct one

   upvoted 1 times

  **suranga4** 1 year, 1 month ago

Answer is A

   upvoted 1 times

  **M25** 1 year, 5 months ago

Selected Answer: A

Went with A

   upvoted 1 times

  **John_Pongthorn** 1 year, 8 months ago

Selected Answer: A

A : Yet the newer is Vertex-AI Pipeline built on Kubeflow



   upvoted 1 times

  **Fatiy** 1 year, 8 months ago

Selected Answer: A

A : In this case, it would be a good fit as you need to retrain your model every month, which can be automated with Kubeflow Pipelines. This makes it easier to manage the entire process, from training to deploying, in a streamlined and scalable manner.

   upvoted 1 times

  **EFIGO** 1 year, 11 months ago

Selected Answer: A

A is correct

All the options get you to the required result, but only A follows the Google-recommended best practices

   upvoted 1 times

  **abhi0706** 1 year, 11 months ago

Answer is A: Kubeflow Pipelines can form an end-to-end architecture

   upvoted 1 times

  **GCP72** 2 years, 2 months ago

Selected Answer: A

Correct answer is "A"

   upvoted 1 times

  **caohieu04** 2 years, 7 months ago

Selected Answer: A

Community vote


   upvoted 2 times

  **lordcenzin** 2 years, 8 months ago

Selected Answer: A

A for me too. KF provides all the end2end tools to perform what is asked

   upvoted 2 times

  **gcper** 3 years, 1 month ago

A

Kubeflow can handle all of those things, including deploying to a model endpoint for real-time serving.

   upvoted 2 times

  **celia20200410** 3 years, 3 months ago

ANS: A

<https://medium.com/google-cloud/how-to-build-an-end-to-end-propensity-to-purchase-solution-using-bigquery-ml-and-kubeflow-pipelines-cd4161f734d9#75c7>

To automate this model-building process, you will orchestrate the pipeline using Kubeflow Pipelines, 'a platform for building and deploying portable, scalable machine learning (ML) workflows based on Docker containers.'

   upvoted 6 times

  **q4exam** 3 years, 1 month ago

I think both A and D are correct because it is just different fashion of doing ML ...

   upvoted 1 times

🗨️ 👤 **ms_lemon** 3 years ago

But D doesn't follow Google best practices

👍 ↩️ 🚩 upvoted 2 times

🗨️ 👤 **george_ognyanov** 2 years, 12 months ago

Answer seems to be A really. Here is a link from Google-recommended best practices. They are talking about Vertex AI Pipelines, which are essentially Kubeflow.

<https://cloud.google.com/architecture/ml-on-gcp-best-practices?hl=en#machine-learning-workflow-orchestration>

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