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Exam Professional Machine Learning Engineer All Questions

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EXAM PROFESSIONAL MACHINE LEARNING ENGINEER TOPIC 1 QUESTION 50 DISCUSSIO..

Actual exam question from Google's Professional Machine Learning Engineer

Question #: 50

Topic #: 1

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Your team is building a convolutional neural network (CNN)-based architecture from scratch. The preliminary experiments running on your on-premises CPU-only infrastructure were encouraging, but have slow convergence. You have been asked to speed up model training to reduce time-to-market. You want to experiment with virtual machines (VMs) on Google Cloud to leverage more powerful hardware. Your code does not include any manual device placement and has not been wrapped in Estimator model-level abstraction. Which environment should you train your model on?

- A. AVM on Compute Engine and 1 TPU with all dependencies installed manually.
- B. AVM on Compute Engine and 8 GPUs with all dependencies installed manually.
- C. A Deep Learning VM with an n1-standard-2 machine and 1 GPU with all libraries pre-installed.
- D. A Deep Learning VM with more powerful CPU e2-highcpu-16 machines with all libraries pre-installed.


Show Suggested Answer

by [inder0007](#) at July 6, 2021, 6:43 a.m.

Comments

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 **celia20200410** Highly Voted 3 years, 3 months ago

ANS: C

to support CNN, you should use GPU.
for preliminary experiment, pre-installed pkgs/libs are good choice.

https://cloud.google.com/deep-learning-vm/docs/cli#creating_an_instance_with_one_or_more_gpus
https://cloud.google.com/deep-learning-vm/docs/introduction#pre-installed_packages

   upvoted 15 times


 **Paul_Dirac** Highly Voted 3 years, 3 months ago

Code without manual device placement => default to CPU if TPU is present or to the lowest order GPU if multiple GPUs are present. => Not A, B.

D: already using CPU and needing GPU for CNN.

Ans: C


   upvoted 13 times

 **PhilipKoku** Most Recent 5 months ago

Selected Answer: C

C) GPU and all pre-installed libraries.

   upvoted 1 times

 **gscharly** 6 months, 2 weeks ago

Selected Answer: C

Agree with celia20200410 - C

   upvoted 1 times

 **Sum_Sum** 11 months, 3 weeks ago

Selected Answer: C

Agree with celia20200410 - C


   upvoted 2 times

 **Mickey321** 11 months, 3 weeks ago

Selected Answer: D

keyword: Your code does not include any manual device placement and has not been wrapped in Estimator model-level abstraction.

   upvoted 1 times

 **Liting** 1 year, 4 months ago

Selected Answer: C

Should use the deep learning VM with GPU.

TPU should be selected only if necessary, coz it incurs high cost. GPU in this case is enough.

   upvoted 1 times

 **M25** 1 year, 6 months ago

Selected Answer: C

Went with C

   upvoted 1 times

 **Melampas** 1 year, 6 months ago

Selected Answer: A

thinking in fastest way

   upvoted 1 times

 **SergioRubiano** 1 year, 7 months ago

Selected Answer: C

You should use GPU.

   upvoted 1 times



 **BenMS** 1 year, 8 months ago

Selected Answer: D

Critical sentence: Your code does not include any manual device placement and has not been wrapped in Estimator model-level abstraction.

So only answer we have. it's D.

   upvoted 2 times

  **shankalman717** 1 year, 8 months ago

Critical sentece: Your code does not include any manual device placement and has not been wrapped in Estimator model-level abstraction.



So only answer we have. it's D.

   upvoted 3 times

  **tavva_prudhvi** 1 year, 4 months ago

Option D provides a more powerful CPU but does not include a GPU, which may not be optimal for deep learning training.

   upvoted 2 times

  **ares81** 1 year, 10 months ago

Selected Answer: C

It's C.

   upvoted 1 times

  **suresh_vn** 2 years, 2 months ago

"has not been wrapped in Estimator model-level abstraction"

How you can use GPU?

D in my opinion, E-family using for high CPU tasks

   upvoted 3 times

  **Mohamed_Mossad** 2 years, 3 months ago

Selected Answer: C

Answer C

=====

Explanation

"speed up model training" will make us biased towards GPU,TPU options

by options eliminations we may need to stay away of any manual installations , so using preconfigured deep learning will speed up time to market

   upvoted 1 times

  **mmona19** 2 years, 6 months ago

Selected Answer: A

the question is asking speed up time to market which can happen if model trains fast. so TPU VM can be a solution.

<https://cloud.google.com/blog/products/compute/introducing-cloud-tpu-vm> option A. if question asks most managed way than answer is deep learning container with everything installed. C

   upvoted 1 times

  **tavva_prudhvi** 1 year, 4 months ago

Option A with 1 TPU and option B with 8 GPUs might provide even faster training, but since the code does not include manual device placement, it may not utilize all the available resources effectively.

   upvoted 2 times

  **maukaba** 1 year, 1 month ago

Instead If you have a single GPU, TensorFlow will use this accelerator to speed up model training with no extra work on your part: <https://codelabs.developers.google.com/vertex-p2p-distributed#2>

Normally you don't use just one TPU and for both GPUs and TPUs it is necessary to define a distributed training strategy: https://www.tensorflow.org/guide/distributed_training

   upvoted 2 times

  **NamitSehgal** 2 years, 10 months ago

C is correct

   upvoted 1 times

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