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Exam Professional Data Engineer All Questions

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📄 **EXAM PROFESSIONAL DATA ENGINEER TOPIC 1 QUESTION 260 DISCUSSION**

Actual exam question from Google's Professional Data Engineer

Question #: 260

Topic #: 1

[All Professional Data Engineer Questions]

You have two projects where you run BigQuery jobs:

• One project runs production jobs that have strict completion time SLAs. These are high priority jobs that must have the required compute resources available when needed. These jobs generally never go below a 300 slot utilization, but occasionally spike up an additional 500 slots.

• The other project is for users to run ad-hoc analytical queries. This project generally never uses more than 200 slots at a time. You want these ad-hoc queries to be billed based on how much data users scan rather than by slot capacity.

You need to ensure that both projects have the appropriate compute resources available. What should you do?

A. Create a single Enterprise Edition reservation for both projects. Set a baseline of 300 slots. Enable autoscaling up to 700 slots.

B. Create two reservations, one for each of the projects. For the SLA project, use an Enterprise Edition with a baseline of 300 slots and enable autoscaling up to 500 slots. For the ad-hoc project, configure on-demand billing.

C. Create two Enterprise Edition reservations, one for each of the projects. For the SLA project, set a baseline of 300 slots and enable autoscaling up to 500 slots. For the ad-hoc project, set a reservation baseline of 0 slots and set the ignore idle slots flag to False.

D. Create two Enterprise Edition reservations, one for each of the projects. For the SLA project, set a baseline of 800 slots. For the ad-hoc project, enable autoscaling up to 200 slots.

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Comments

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⊖ 👤 **raaad** `Highly Voted` 👍 1 year, 4 months ago

`Selected Answer: B`

- The SLA project gets a dedicated reservation with autoscaling to handle spikes, ensuring it meets its strict completion time SLAs.
- The ad-hoc project uses on-demand billing, which means it will be billed based on the amount of data scanned rather than slot capacity, fitting the billing preference for ad-hoc queries.

👍 ↩ ⚑ upvoted 11 times

  ⊖ 👤 **ce9e395** 1 year, 1 month ago

  Critical jobs can spike up to 800 slots, making option B wrong

  👍 ↩ ⚑ upvoted 2 times

    ⊖ 👤 **barrru** 1 year, 1 month ago

    in this context, "enable autoscaling up to 500 slots" means that the system can add up to 500 slots beyond the baseline

    👍 ↩ ⚑ upvoted 2 times

      ⊖ 👤 **chrissamharris** 1 year, 1 month ago

      I dont think thats correct. "up to 500 slots" means the maximum limit is 500 slots - it doesnt specify autoscaling an additional 500 slots.

      👍 ↩ ⚑ upvoted 1 times

⊖ 👤 **JyoGCP** `Highly Voted` 👍 1 year, 2 months ago

`Selected Answer: B`

Option B.

Not D because "In Project-2, ad-hoc queries need to be billed based on how much data users scan rather than by slot capacity."

👍 ↩ ⚑ upvoted 5 times

⊖ 👤 **Abizi** `Most Recent` ⦿ 1 month, 1 week ago

`Selected Answer: B`

answer B, because of the pay as you go for the Adhoc projet

👍 ↩ ⚑ upvoted 1 times

⊖ 👤 **ToiToi** 6 months ago

`Selected Answer: B`

100% B
I work with BQ on a daily basis, did the transition from falt rate to editions last year, have been configuring this for so many customers.
Billing for data analysed rather than slots is on demand - so no other option other than B makes sense.

👍 ↩ ⚑ upvoted 2 times

⊖ 👤 **SamuelTsch** 6 months, 1 week ago

`Selected Answer: B`

https://cloud.google.com/bigquery/docs/slots-autoscaling-intro#using_reservations_with_baseline_and_autoscaling_slots
says clearly, "Autoscaling slots are only added after all of the baseline slots (and idle slots if applicable) are consumed."

👍 ↩ ⚑ upvoted 2 times

⊖ 👤 **CGS22** 1 year ago

`Selected Answer: B`

Separate Reservations: This approach provides tailored resource allocation and billing models to match the distinct needs of each project.
SLA Project Reservation:
Enterprise Edition: Guarantees consistent slot availability for your production jobs.
Baseline of 300 slots: Ensures resources are always available to meet your core usage at a predictable cost.
Autoscaling up to 500 slots: Accommodates bursts in workload while controlling costs.

Ad-hoc Project On-demand:
On-demand billing: Charges based on data scanned, ideal for unpredictable and variable query patterns by your ad-hoc users.

👍 ↩ 🚩 upvoted 3 times

⊟ 👤 **chrissamharris** 1 year, 1 month ago

Note, Option A states autoscale "up to" (not an additional) 500 slots, whereas the requirement is 800 slots. Making option D the only viable option.

👍 ↩ 🚩 upvoted 1 times

⊟ 👤 **ToiToi** 6 months ago

"You want these ad-hoc queries to be billed based on how much data users scan rather than by slot capacity." this is the only thing you need to read out of the question.
Having spikes of 500 slots does not mean you should set a baseline of 800, it is WAY too expensive to do that for spikes.

👍 ↩ 🚩 upvoted 1 times

⊟ 👤 **chrissamharris** 1 year, 1 month ago

Scratch this - Option B: https://cloud.google.com/bigquery/docs/slots-autoscaling-intro#using_reservations_with_baseline_and_autoscaling_slots
Baseline Slots and AutoScaling Slots are treated as two different entities in the documentation. Therefore B is right despite the horrific wording of the answers.

👍 ↩ 🚩 upvoted 3 times

⊟ 👤 **potatoKiller** 1 year, 1 month ago

"You want these ad-hoc queries to be billed based on how much data users scan rather than by slot capacity." So D is out. Choose B

👍 ↩ 🚩 upvoted 3 times

⊟ 👤 **barrru** 1 year, 1 month ago

B
"enable autoscaling up to 500 slots" means that the system can add up to 500 slots beyond the baseline as needed, effectively allowing for a total of 800 slots (300 baseline + 500 autoscaled) during peak usage.

👍 ↩ 🚩 upvoted 3 times

⊟ 👤 **hanoverquay** 1 year, 1 month ago

500 (additional) +300 = 800, so answer is D

👍 ↩ 🚩 upvoted 1 times

⊟ 👤 **danisxp** 1 year, 3 months ago

Considering the emphasis on strict completion time SLA's.I go with option D. However I think both B and D are not the best solution here.

👍 ↩ 🚩 upvoted 1 times

⊟ 👤 **Matt_108** 1 year, 3 months ago

Option B - first project works well with dedicated reservation and autoscaling. The second one requires on demand billing, as per question requires.

👍 ↩ 🚩 upvoted 3 times

⊟ 👤 **ElenaL** 1 year, 3 months ago

"These jobs generally never go below a 300 slot utilization, but occasionally spike up an additional 500 slots." -> if it spikes up an ADITIONAL 500 slots, on top of the regular 300, shouldn't we reserve at a minimum 800? open to explanations as to why this is not the case.

👍 ↩ 🚩 upvoted 3 times

⊟ 👤 **scaenruy** 1 year, 4 months ago

B. Create two reservations, one for each of the projects. For the SLA project, use an Enterprise Edition with a baseline of 300 slots and enable autoscaling up to 500 slots. For the ad-hoc project, configure on-demand billing.

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