

Google Cloud

Partner Certification Academy



Professional Cloud Architect



pls-academy-pca-student-slides-6-2301

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Thank you!





Today's agenda



01 Exam registration

02 Case Studies

03 Practice questions



Exam Registration, Rescheduling

Go to the Google Cloud certification page

Professional Cloud Architect

Professional Cloud Architects enable organizations to leverage Google Cloud technologies. With a thorough understanding of cloud architecture and Google Cloud, they design, develop, and manage robust, secure, scalable, highly available, and dynamic solutions to drive business objectives.

The Professional Cloud Architect certification exam assesses your ability to:

- ✓ Design and plan a cloud solution architecture
- ✓ Design for security and compliance
- ✓ Manage implementations of cloud architecture
- ✓ Manage and provision the cloud solution infrastructure
- ✓ Analyze and optimize technical and business processes
- ✓ Ensure solution and operations reliability

Register

View FAQs

Also available in [Japanese](#).

Quick links

Exam guide

Train for the exam

Review sample questions

Google Cloud Free Tier

Community: Learning & Certification Hub

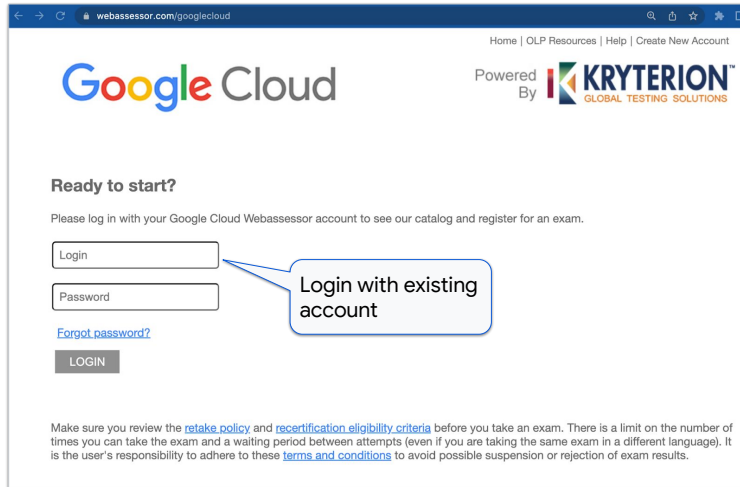
Click here to start



<https://cloud.google.com/certification/cloud-architect>

<https://cloud.google.com/certification/cloud-architect>

Kryterion Website - Login



webassessor.com/googlecloud

Home | OLP Resources | Help | Create New Account

Google Cloud

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GLOBAL TESTING SOLUTIONS

Ready to start?

Please log in with your Google Cloud Webassessor account to see our catalog and register for an exam.

Login

Password

[Forgot password?](#)

LOGIN

Make sure you review the [retake policy](#) and [recertification eligibility criteria](#) before you take an exam. There is a limit on the number of times you can take the exam and a waiting period between attempts (even if you are taking the same exam in a different language). It is the user's responsibility to adhere to these [terms and conditions](#) to avoid possible suspension or rejection of exam results.

Forgot your login?

Email Kryterion support:
support@kryteriononline.com



<https://webassessor.com/googlecloud>

Kryterion support:

Website: <https://kryterion.force.com/support/s/contactsupport>

Email: support@kryteriononline.com

Kryterion Website - Create a new account

Login: *

Legal First Name: *

Legal Last Name (if no last name enter a period "."): *

Email Address: *

Primary Phone:

Check with your organization if in doubt of the correct email to use

Different input options for personal email and organization/company email.

e.g. john@gmail.com,
john@yourcompany.com


Organization Email (an email associated with your current organization) *


What name would you like to appear in your certificate? *

Different input options for legal name and name you want on certificate.

e.g.
Thomas Cruise Mapother IV,
Tom Cruise

Register for an exam



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GLOBAL TESTING SOLUTIONS

Receipts Register For An Exam My Assessments **Home**

You last logged in 18 August 2022 at 12:14PM MST.

Make sure you review the [retake policy](#) and [recertification eligibility criteria](#) before you take an exam. There is a limit on the number of times you can take an exam and a waiting period between attempts (even if you are taking the same exam in a different language). It is your responsibility to adhere to these [terms and conditions](#) to avoid possible suspension or rejection of exam results.

Launching your online exam? Due to high volume, you may experience additional wait time (15-20 mins) before connecting with a proctor. Do not disconnect. We appreciate your patience!

REGISTER FOR AN EXAM

Click here

... or here

Select the PCA Certification

Google Cloud Certification Exams			
+ Google Cloud Certified - Cloud Digital Leader (English)	This is the Google Cloud Certified - Cloud Digital Leader exam. Please refer to the exam guide for current topics that may appear on the exam. You may attempt an exam at a test center or online and each attempt regardless of delivery method or language counts toward the total permissible attempts and the waiting period between attempts still applies (see our Retake Policy).	multiple	
+ Google Cloud Certified - Associate Cloud Engineer (English)	This is the Google Cloud Certified - Associate Cloud Engineer exam. Please refer to the exam guide for current topics that may appear on the exam. You may attempt an exam at a test center or online and each attempt regardless of delivery method or language counts toward the total permissible attempts and the waiting period between attempts still applies (see our Retake Policy).	multiple	
- Google Cloud Certified - Professional Cloud Architect (English)	This is the Google Cloud Certified - Professional Cloud Architect exam. Please refer to the exam guide for the case studies and current topics that may appear on the exam. You may attempt an exam at a test center or online and each attempt regardless of delivery method or language counts toward the total permissible attempts and the waiting period between attempts still applies (see our Retake Policy).	multiple	
Google Cloud Certified - Professional Cloud Architect (English)	Pre-requisites: Retake Policy:	Remote Proctored	USD 200.00 Buy Now
Google Cloud Certified - Professional Cloud Architect (English)	Pre-requisites: Retake Policy:	Onsite Proctored	USD 200.00 Buy Now

Click here to expand the section

Take exam from office/home/other location

Go into a Kryterion testing center



Kryterion Test Center (Onsite Proctored)

Enter search criteria

Choose options below to narrow down the list of testing centers displayed.

Country: Province/State: City: OR
Postal Code Range

Select the Testing Center where you wish to take the test.

AVAILABLE TESTING CENTERS

<input type="checkbox"/>	Testing Location Name	Address	City	Province/State	Country	Map	Important Location Information
<input checked="" type="checkbox"/>	Minot State University	500 West University Avenue	Minot	North Dakota	United States	Map	
<input type="checkbox"/>	Valley City State University Testing Center	101 College St SW	Valley City	North Dakota	United States	Map	

Click Select



Choose Date and Time

Pick and date and time

Selected Testing Center

- Minot State University
500 West University Avenue
Minot, North Dakota 58707

Select Date

August, 2022						
Today						
wk	Sun	Mon	Tue	Wed	Thu	Fri
30		1	2	3	4	5
31	7	8	9	10	11	12
32	14	15	16	17	18	19
33	21	22	23	24	25	26
34	28	29	30	31		

Select date

Select Start Time

8:00 (8:00 AM)
8:15 (8:15 AM)
8:30 (8:30 AM)
8:45 (8:45 AM)
9:00 (9:00 AM)
9:15 (9:15 AM)
9:30 (9:30 AM)
9:45 (9:45 AM)
10:00 (10:00 AM)
10:15 (10:15 AM)
10:30 (10:30 AM)
10:45 (10:45 AM)

Scroll to bottom

☒ I acknowledge that I have read and understood all the information stated in the above text box and agree to abide by these terms and rules.

Click Select

Select Cancel



Applying the Voucher Code

Exam	Details	Price
Exam: Google Cloud Certified - Professional Cloud Architect (English) Length : 120 minutes	Schedule : Friday, 26 August 2022 Start Time : 09:45 (UTC-05:00) Location : [Change] Minot State University 500 West University Avenue Minot, North Dakota 58707	200.00

If you are not using a voucher/coupon, please skip and select "Check Out" to proceed.

Coupon/Voucher Code:

Paste voucher code here and click Apply

Apply

Subtotal: 200.00
Estimated Tax: 0.00

Total Price will be zero

Total Price: USD 200.00

*Charges are made in USD, currency conversion fees may apply

Check Out

[Empty Cart](#) [Add Another Exam](#) [Return Home](#) [Check Out](#)




Rescheduling

- Login to the webassessor site. Click “My Assessments” to see your current exam registrations. Next to it, there will be a “Reschedule/Cancel”
- There’s a rescheduling/late fee if you update registrations in less than ...
 - 72 hours for onsite exams scheduled at a testing center.
 - 24 hours for online proctored exams taken remotely.

[Receipts](#) [Register For An Exam](#) **[My Assessments](#)** [Home](#)

SCHEDULED EXAMS

Exam	Date Scheduled	Exam Details	Date Registered	Launch	Details
Beta: Google Cloud Certified - Professional Cloud Database Engineer	27 May 2022 0930H Asia/Calcutta	Remote Proctored	12 April 2022	?	Reschedule/Cancel

 Google Cloud

Rescheduling:

<https://support.google.com/cloud-certification/answer/9908049?hl=en>

Kryterion support Website:

<https://kryterion.force.com/support/s/contactsupport>

Kryterion support Email:

support@kryteriononline.com

Exam Identification

Kryterion Test Center:

- Bring two forms of ID with name (spelled correctly) and photo.

Online:

- One photo ID



- ✓ Government-Issued Driver License
- ✓ National, State, or Country Identification Card
- ✓ Passport
- ✓ Passport card
- ✓ Military ID
- ✓ Alien Registration Card (Green Card or Permanent Resident Visa)



In general, just keep ready two IDs ready if needed.

FAQs

- Can I change from remote proctored to onsite proctored?
 - Yes, contact Kryterion support.
- Can I take the exam in my office?
 - Yes, if it is a quiet place and you won't have people coming and going.
- But my office has glass walls!
 - No - you can't take your test there.
- But I can't get a quiet room at home!
 - Choose onsite (test center) proctored.
- How many attempts are allowed with one voucher?
 - Only one.

FAQs

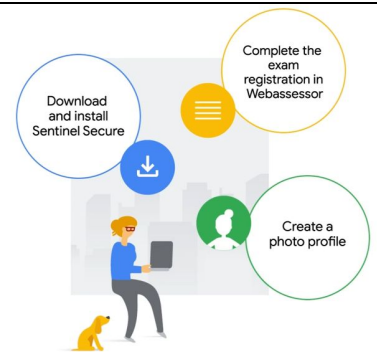
- What is the passing score?
 - Google doesn't publish this information.
- Will we get a subject based score of how many answers we got right/wrong?
 - No. Only a PASS/FAIL result.
- Can I install the exam software on company machine?
 - Try it.
 - It is not uncommon for companies to install policy software which blocks unauthorized applications to be installed.

Taking the exam at Kryterion?

- Arrive early.
- Show your photo IDs at the reception.
- Show your exam registration email.
- Keep bags, mobiles, watch, headphones, items in your pocket in a locker.
- A person will walk you to a computer and they will start your exam for you.

Taking the exam remotely?

- Exam is delivered via a software controlled by kryterion proctors.
- Days before the exam, setup the “New Secure Browser” software on your computer by following steps on the webassessor site.
- Setup your biometrics profile.
- Do not wait until the last moment for this - you will increase your stress/anxiety just before the exam.



For Online Proctored Exams

Before you can launch your exam, you must complete the following steps:

Step 1 **Install NEW Secure Browser**

If you have not installed the **latest** secure browser (**as of May 16, 2022**) or you are unsure, click the button above, then run and install the program.

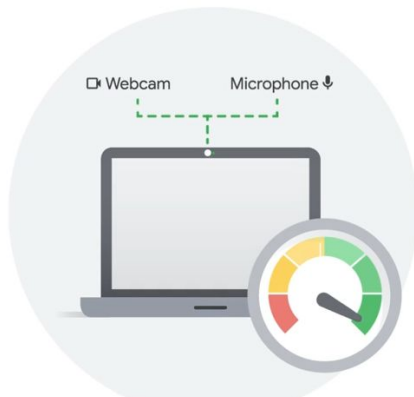
Step 2

Create your Biometric Profile - If you have not completed your Biometric Enrollment, a button will appear above. You must complete the Biometric Profile prior to taking an OLP test.

Online proctoring

https://kryterion.force.com/support/s/topic/0TO1W000000I5h3WAC/online-proctoring?language=en_US

Check Connectivity, Mic, Camera (for remote)



If your computer does not have mic or a webcam, or if your network connectivity is bad, or if your company does not allow you to install software, choose to take the exam in a testing center (i.e. onsite proctored).

<https://www.kryterion.com/systemcheck/>

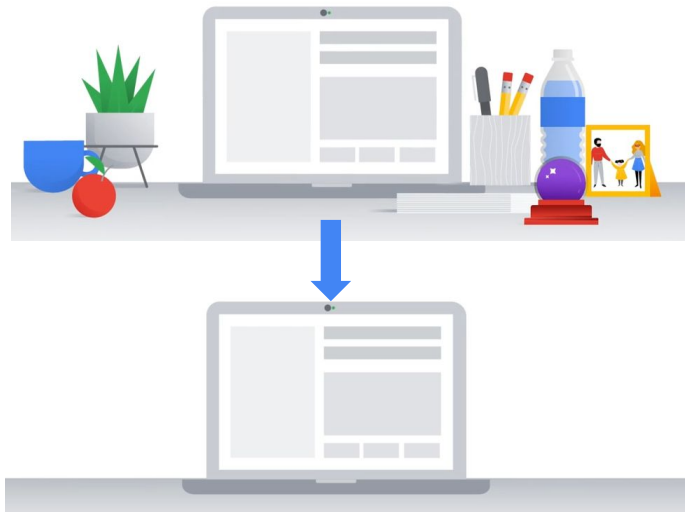


System check: <https://www.kryterion.com/systemcheck/>

We recommend that you use a personal computer and network, as office devices might have administrative restrictions that prohibit the installation and use of the required software, or might block the use of a webcam.

Just before the Exam (for remote)

- Inform everyone that you need the room exclusively.
 - No one cannot walk in, offer you food, ask you anything, etc.
- Clear the table of any electronics, books, watches, mobiles, pen, paper, etc.
- Your face and the room needs to be well lit.



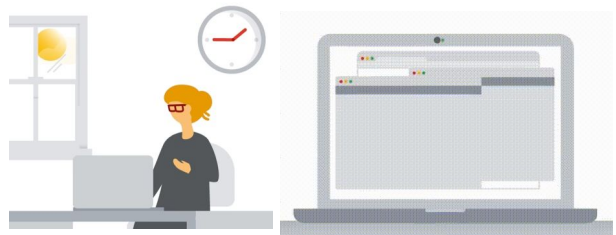
Just before the Exam (for remote)

- No external monitor, USBs, devices, etc.
- Don't wear earphones, bluetooth headsets, smart watches, etc.
- No watch is allowed
 - Will see a timer when you start the exam



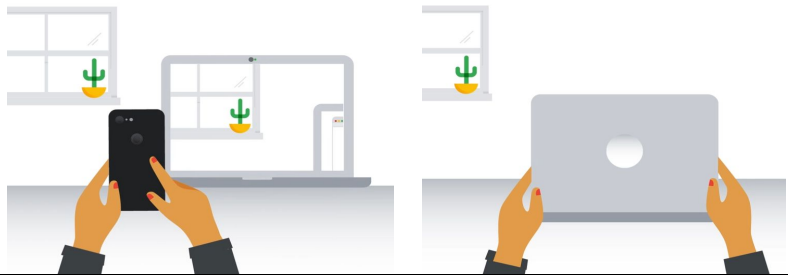
It is time to start the exam (for remote)

- Close all windows except the secure browser used for the exam
- Login to the webassessor site.
- Launch button becomes enabled about 10 or 15 minutes before the exam.
 - Before that it will say “Reschedule/Cancel”
- Once the process launches, follow the instructions ...
 - Agree to Terms and Conditions, enable camera and microphone if not already, take photo of your face, etc.
- Proctor will appear in a while.



Starting the Exam (for remote)

- When the proctor arrives:
 - Show your government ID to the camera.
 - Lift your laptop/camera and turn it slowly around the room showing walls, ceiling, floor, area under desk, chair, etc.
 - With a reflective surface or a mobile phone's front facing camera, show a reflection of your computer screen, keyboard etc.
 - Once done, put your mobile phone, IDs, etc. away and show the proctor where you placed them.



Mock up of exam question

Qn. 2 of 40

Time Left: 1:20:52

Question #
and total

Timer

You are a project owner and need your co-worker to deploy a new version of your application to App Engine. You want to follow Google's recommended practices. Which IAM roles should you grant your co-worker?

- ☐ A. Project Editor
- ☐ B. App Engine Service Admin
- ☐ C. App Engine Deployer
- ☐ D. App Engine Code Viewer

Click to mark
question for review

☐ Mark for Review

Previous

Next

Mock up of question with PCA case study

Qn. 2 of 40

Time Left: 1:20:52

You are a project owner and need your co-worker to deploy a new version of your application to App Engine. You want to follow Google's recommended practices. Which IAM roles should you grant your co-worker?

- ☐ A. Project Editor
- ☐ B. App Engine Service Admin
- ☐ C. App Engine Deployer
- ☐ D. App Engine Code Viewer

☐ Mark for Review

Previous

Next



JencoMart is a global retailer with over 10,000 stores in 16 countries. The stores carry a range of goods, such as groceries, tires, and jewelry. One of the company's core values is excellent customer service.

In addition, they recently introduced an environmental policy to reduce their carbon output by 50% over the next five years.

1. Company background

JencoMart started as a general store in 1931 and has grown into one of the world's leading brands, known for great value and customer service. Over time, the company transitioned from only physical stores to a stores and online hybrid model, with 25% of sales online. Currently, JencoMart has little presence in Asia but considers that market key for future growth.

2. Solution concept

JencoMart wants to migrate several critical applications to the cloud but has not completed a technical review to determine their suitability for the cloud and the engineering required for migration. They currently host all of these applications on infrastructure that is at its end of life and is no longer supported.

Can select a case study to view

Mock up - last exam question

Qn. 40 of 40

Time Left: 0:03:40

You are a project owner and need your co-worker to deploy a new version of your application to App Engine. You want to follow Google's recommended practices. Which IAM roles should you grant your co-worker?

- ☐ A. Project Editor
- ☐ B. App Engine Service Admin
- ☐ C. App Engine Deployer
- ☐ D. App Engine Code Viewer

Click here to review
marked questions

☐ Mark for Review

Previous

Review

Submit

Question review

Time Left: 0:02:30

- | | | | |
|------------|-------------|-------------|-------------|
| <u>1</u> | <u>11</u> * | <u>21</u> | <u>31</u> |
| <u>2</u> | <u>12</u> | <u>22</u> | <u>32</u> |
| <u>3</u> * | <u>13</u> | <u>23</u> | <u>33</u> * |
| <u>4</u> | <u>14</u> | <u>24</u> | <u>34</u> * |
| <u>5</u> | <u>15</u> * | <u>25</u> | <u>35</u> |
| <u>6</u> | <u>16</u> | <u>26</u> | <u>36</u> |
| <u>7</u> | <u>17</u> | <u>27</u> | <u>37</u> * |
| <u>8</u> * | <u>18</u> | <u>28</u> * | <u>38</u> |
| <u>9</u> | <u>19</u> | <u>29</u> * | <u>39</u> |
| <u>10</u> | <u>20</u> | <u>30</u> * | <u>40</u> |

Marked questions
have an “*”

Submit

Types of Questions

- Multiple choice questions, single or multiple answer
 - Question will indicate # of answers required if more than one

You are a project owner and need your co-worker to deploy a new version of your application to App Engine. You want to follow Google's recommended practices. Which IAM roles should you grant your co-worker?

- ☐ A. Project Editor
- ☐ B. App Engine Service Admin
- ☐ C. App Engine Deployer
- ☐ D. App Engine Code Viewer

Single
answer
question



Your company has a mission-critical application that serves users globally. You need to select a transactional, relational data storage system for this application. Which two products should you choose?

- ☐ A. BigQuery
- ☐ B. Cloud SQL
- ☐ C. Cloud Spanner
- ☐ D. Cloud Bigtable
- ☐ E. Cloud Datastore

Multiple
answer
question

Post Exam

- A PASS/FAIL confirmation is displayed shortly after clicking the Submit button
- A final confirmation is emailed after the exam within a few days
- Can check exam pass/fail status on <https://www.webassessor.com/>
 - Login to your account and click the “My Assessments” button
 - Scroll down to see your result



Case Studies

Case Studies

- PCA exam underwent a major revision in 2021
 - Prior to that, there were three case studies
 - Now, there are four
 - Two case studies have been updated
 - Mountkirk Games
 - TerramEarth
 - Two case studies are new
 - Helicopter Racing League
 - EHR Healthcare
- Some exam questions will be based on these companies
 - Be familiar with their requirements prior to the exam
 - During the exam, an option is available to review each case study



Professional Cloud Architect

Certification exam guide

A Google Cloud Certified Professional Cloud Architect enables organizations to leverage Google Cloud technologies. Through an understanding of cloud architecture and Google technology, this individual designs, develops, and manages robust, secure, scalable, highly available, and dynamic solutions to drive business objectives. The Cloud Architect should be proficient in all aspects of enterprise cloud strategy, solution design, and architectural best practices. The Cloud Architect should also be experienced in software development methodologies and approaches including multi-tiered distributed applications which span multcloud or hybrid environments.

Case studies

During the exam for the Cloud Architect Certification, some of the questions may refer you to a case study that describes a fictitious business and solution concept. These case studies are intended to provide additional context to help you choose your answers. Review the case studies that may be used in the exam.

[EHR Healthcare](#)

[Helicopter Racing League](#)

[Mountkirk Games](#)

[TerramEarth](#)

Links to case studies are in the Exam Guide

Professional Cloud Architect exam guide

<https://cloud.google.com/certification/guides/professional-cloud-architect>



Practice Questions

Exam Taking Strategy

- **Answer every question**
 - An empty answer is zero points - never leave a question unanswered
- **Prioritize your time**
 - 120 minutes, 50-60 questions means \approx 2 minutes per question including review
 - **Do not get stuck in a single question! Mark for review and move on**
 - You want to be sure to answer all questions before time expires
- **When all questions are answered, review made questions if time allows**
 - Spend time on questions that require more thought
 - Once complete, you can review all the questions if time remains

Evaluating questions & answers during the exam

The first group of questions that follow will review techniques to use while evaluating questions and answers during the exam

After that you get to put your skills to the test!



Question: You have a large number of files in a directory to copy to Cloud Storage. You want to parallelize it. Which command should you use?

- A. `gcloud -m cp -r dir gs://company-name/bu/project/my-bucket`
- B. `gcloud -p cp -r dir gs://company-name/bu/project/my-bucket`
- C. `gsutil -m cp -r dir gs://company-name/bu/project/my-bucket`
- D. `gsutil -p cp -r dir gs://company-name/bu/project/my-bucket`

Question: You have a large number of files in a directory to copy to Cloud Storage. You want to parallelize it. Which command should you use?

- A. gcloud -m `cp -r dir gs://company-name/bu/project/my-bucket`
- B. gcloud -p `cp -r dir gs://company-name/bu/project/my-bucket`
- C. gsutil -m `cp -r dir gs://company-name/bu/project/my-bucket`
- D. gsutil -p `cp -r dir gs://company-name/bu/project/my-bucket`

Recognize that some answers have duplicate segments.

Question: You have a large number of files in a directory to copy to Cloud Storage. You want to parallelize it. Which command should you use?

- A. `gcloud -m cp -r dir gs://company-name/bu/project/my-bucket`
- B. `gcloud -p cp -r dir gs://company-name/bu/project/my-bucket`
- C. `gsutil -m cp -r dir gs://company-name/bu/project/my-bucket`
- D. `gsutil -p cp -r dir gs://company-name/bu/project/my-bucket`

Ignore those segments entirely.

Question: You have a large number of files in a directory to copy to Cloud Storage. You want to parallelize it. Which command should you use?

- A. **gcloud** -m `cp -r dir gs://company-name/bu/project/my-bucket`
- B. **gcloud** -p `cp -r dir gs://company-name/bu/project/my-bucket`
- C. **gsutil** -m `cp -r dir gs://company-name/bu/project/my-bucket`
- D. **gsutil** -p `cp -r dir gs://company-name/bu/project/my-bucket`

Look for groups of segments.

Question: You have a large number of files in a directory to copy to Cloud Storage. You want to parallelize it. Which command should you use?

- A. `gcloud -m cp -r dir gs://company-name/bu/project/my-bucket`
- B. `gcloud -p cp -r dir gs://company-name/bu/project/my-bucket`
- C. `gsutil -m cp -r dir gs://company-name/bu/project/my-bucket`
- D. `gsutil -p cp -r dir gs://company-name/bu/project/my-bucket`

Eliminate the incorrect group.

Question: You have a large number of files in a directory to copy to Cloud Storage. You want to parallelize it. Which command should you use?

- A. `gcloud -p cp -r dir gs://company-name/bu/project/my-bucket`
- B. `gcloud -p cp -r dir gs://company-name/bu/project/my-bucket`
- C. `gsutil -m cp -r dir gs://company-name/bu/project/my-bucket`**
- D. `gsutil -p cp -r dir gs://company-name/bu/project/my-bucket`

Question: Your company wants to deploy several microservices to help their system handle elastic loads. Each microservice uses a different version of software libraries. You want to enable the developers to keep their development environment in sync with the various production services. Which technology should you choose?

Question: Your company wants to deploy several microservices to help their system handle elastic loads. Each microservice uses a different version of software libraries. You want to enable the developers to keep their development environment in sync with the various production services. Which technology should you choose?

Start visualizing what's going on

What options comes to mind first?

Elastic Loads = autoscaling

Various production services = portability



Question: Your company wants to deploy several microservices to help their system handle elastic loads. Each microservice uses a different version of software libraries. You want to enable their developers to keep their development environment in sync with the various production services. Which technology should you choose?

Think about these before you answer the question:

If you had to pick a compute option for microservices workloads, what would it be?

What comes to mind first?



Question: Your company wants to deploy several microservices to help their system handle elastic loads. Each microservice uses a different version of software libraries. You want to enable their developers to keep their development environment in sync with the various production services. Which technology should you choose?

- A. Bare Metal Machines
- B. Containers
- C. Individual Laptops
- D. Virtual machines

- 1) *Look for your solution*
- 2) *Eliminate obvious wrong options*

Question: Your company wants to deploy several microservices to help their system handle elastic loads. Each microservice uses a different version of software libraries. You want to enable their developers to keep their development environment in sync with the various production services. Which technology should you choose?

- 1) *Look for your solution*
- 2) *Eliminate obvious wrong options*

A. Bare Metal Machines

B. Containers

C. ~~Individual Laptops~~ *Ridiculous option.*

D. Virtual machines



Question: Your company wants to deploy several microservices to help their system handle elastic loads. Each microservice uses a different version of software libraries. You want to enable their developers to keep their development environment in sync with the various production services. Which technology should you choose?

A. Bare Metal Machines *A fringe case*

B. Containers *Best option*

C. Individual Laptops *Ridiculous option.*

D. Virtual machines *An option, but not the best*

- 1) *Look for your solution*
- 2) *Eliminate obvious wrong options*
- 3) *Verify the answer is BEST - Containers are Portable and supported in autoscaling environments*

Question: Your company wants to try out the cloud with low risk. They want to archive approximately 100 TB of their log data to the cloud and test the serverless analytics features available to them there, while also retaining that data as a long-term disaster recovery backup. Which two steps should they take? (choose two)



Question: Your company wants to try out the cloud with **low risk**. They want to archive approximately **100 TB of their log data** to the cloud and test the **serverless analytics** features available to them there, while also retaining that data as a **long-term disaster recovery backup**. Which two steps should they take? (choose two)

Start visualizing what's going on

- 1. Low risk = minimal effort*
- 2. Serverless*
- 3. Analytics*
- 4. 100 TB*
- 5. Long term disaster recovery*

Question: Your company wants to try out the cloud with low risk. They want to archive approximately 100 TB of their log data to the cloud and test the serverless analytics features available to them there, while also retaining that data as a long-term disaster recovery backup. Which two steps should they take? (choose two)

Think about these before you answer the question:

Which database is used for serverless analytics?

Which storage option is used for long term storage?

Which storage option would be good for storing backup files - e.g. zip files?

Which 2 services come to mind immediately?



Question: Your company wants to try out the cloud with low risk. They want to archive approximately 100 TB of their log data to the cloud and test the serverless analytics features available to them there, while also retaining that data as a long-term disaster recovery backup. Which two steps should they take? (choose two)

- A. Load logs into BigQuery.
- B. Load logs into Cloud SQL.
- C. Import logs into Cloud Logging.
- D. Insert logs into Cloud Bigtable.
- E. Upload log files into Cloud Storage.

Recall

- 1. *Low risk = minimal effort*
- 2. *Serverless*
- 3. *Analytics*
- 4. *100 TB*
- 5. *Long term disaster recovery*

- 1) ***Look for your solutions***
- 2) ***Eliminate obvious wrong options***



Question: Your company wants to try out the cloud with low risk. They want to archive approximately 100 TB of their log data to the cloud and test the serverless analytics features available to them there, while also retaining that data as a long-term disaster recovery backup. Which two steps should they take? (choose two)

- A. **Load logs into BigQuery.** *Analytics keyword*
- B. ~~Load logs into Cloud SQL.~~ *Not serverless*
- C. ~~Import logs into Cloud Logging.~~ *Not long term storage*
- D. ~~Insert logs into Cloud Bigtable.~~ *Not best*
- E. **Upload log files into Cloud Storage.** *Long term storage*

Recall

- 1. *Low risk = minimal effort*
- 2. *Serverless*
- 3. *Analytics*
- 4. *100 TB*
- 5. *Long term disaster recovery*

- 1) **Look for your solutions**
- 2) **Eliminate obvious wrong options**
- 3) **Verify your answers are BEST**



Question: You want to set up a real-time analytics platform for a new game. Which combination of Google technologies will be suitable?

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1) Look for the keyword solution

2) Confirm nothing is better

- A. Cloud Dataflow, Cloud Pub/Sub, and BigQuery
- B. Cloud SQL, Cloud Storage, Cloud Pub/Sub
- C. Cloud Dataproc, Cloud Pub/Sub, Cloud SQL
- D. Cloud Pub/Sub, Compute Engine, Cloud Storage



Question: You want to set up a real-time analytics platform for a new game. Which combination of Google technologies will be suitable?

1) Look for the keyword solution

2) Confirm nothing is better

- A. Cloud Dataflow, Cloud Pub/Sub, and BigQuery *Winner*
- B. Cloud SQL, Cloud Storage, Cloud Pub/Sub *No analytics at all*
- C. Cloud Dataproc, Cloud Pub/Sub, Cloud SQL *No mention of Hadoop (for Dataproc)*
- D. Cloud Pub/Sub, Compute Engine, Cloud Storage *Possible, but not the best choice*

Question: Your company has a mission-critical application that serves users globally. You need to select a transactional, relational data storage system for this application. Which two products should you choose?

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Think about these before you answer the question:

Which database services are transactional and relational?

Which of them are global?



Question: Your company has a mission-critical application that serves users globally. You need to select a transactional, relational data storage system for this application. Which two products should you choose?

- A. BigQuery
- B. Cloud SQL
- C. Cloud Spanner
- D. Cloud Bigtable
- E. Cloud Datastore

Question: Your company has a mission-critical application that serves users globally. You need to select a transactional, relational data storage system for this application. Which two products should you choose?

***Don't need to know the right answer!
Just eliminate the wrong ones!***

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But confirm the leftovers fit the question.



Question: Your company has a mission-critical application that serves users globally. You need to select a transactional, relational data storage system for this application. Which two products should you choose?

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A. BigQuery *Not Transactional*

B. Cloud SQL

C. Cloud Spanner

D. Cloud Bigtable *Not Relational*

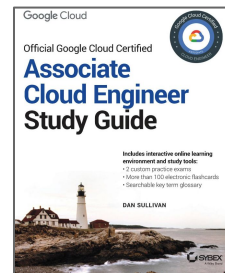
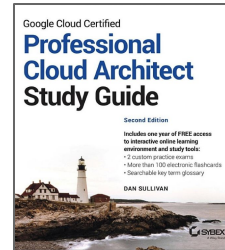
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Google Certification Study Guides

- *Optional* study guides
- Contains technical content plus lots of practice questions
- These are **not free** and must be purchased
- Some of the practice questions shown on the next few slides are from these books



Professional Cloud Architect Study Guide
2nd edition published in 2022

https://www.google.com/books/edition/Google_Cloud_Certified_Professional_Cloud_Architect/3YJIEAAQBAJ

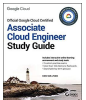
Associate Cloud Engineer Study guide
2nd edition coming out in 2023

https://www.google.com/books/edition/Official_Google_Cloud_Certified_Associate_Cloud_Engineer/2wGQDwAAQBAJ?hl=en&gbpv=0

If purchasing a book, get the most recent edition. A book that more than 2 years old is like 10 years old in cloud years.

Your company's finance department is developing a new account management application that requires transactions and the ability to perform relational database operations using fully compliant SQL. Data storage options include:

- A. Spanner and Cloud SQL
- B. Firestore and Bigtable
- C. Spanner and Cloud Storage
- D. Firestore and Cloud SQL



Your company's finance department is developing a new account management application that requires transactions and the ability to perform relational database operations using fully compliant SQL. Data store options in GCP include:

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- C. Spanner and Cloud Storage
- D. Firestore and Cloud SQL

A. Only Spanner and Cloud SQL databases support transactions and have a SQL interface. Firestore has transactions but does not support fully compliant SQL; it has a SQL-like query language. Cloud Storage does not support transactions or SQL.

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You have been hired as a consultant to a startup in the Internet of Things (IoT) space. The startup will stream large volumes of data into GC. The data needs to be filtered, transformed, and analyzed before being stored in Firestore. A good option for the stream processing component is:

- A. Cloud Dataproc
- B. Cloud Dataflow
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- A. Dataproc
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B. Cloud Dataflow allows for stream and batch processing of data and is well suited for this kind of ETL work. Dataproc is a managed Hadoop and Spark service that is used for big data analytics. Cloud Endpoints is an API service, and Cloud Interconnect is a network service.

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You have been asked to set up network security in a virtual private cloud. Your company wants to have multiple subnetworks and limit traffic between the subnetworks. Which network security control would you use to control the flow of traffic between subnets?

- A. Identity access management
- B. Router
- C. Firewall rules
- D. IP address table



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- A. Identity access management
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Ans: C. Firewall rules in Google Cloud Platform (GCP) are software-defined network controls that limit the flow of traffic into and out of a network or subnetwork, so option C is the correct answer. Routers are used to move traffic to appropriate destinations on the network. Identity access management is used for authenticating and authorizing users; it is not relevant to network controls between subnetworks. IP address tables are not a security control.

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You have an application that uses a Pub/Sub message queue to maintain a list of tasks that are to be processed by another application. The application that consumes messages from the Pub/Sub queue removes the message only after completing the task. It takes approximately 10 seconds to complete a task. It is not a problem if two or more VMs perform the same task. What is a cost-effective configuration for processing this workload?

- A. Use preemptible/spot VMs
- B. Use standard VMs
- C. Use DataProc
- D. Use Spanner



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Ans: A. This is a good use case for preemptible/spot VMs because they could reduce the cost of running the second application without the risk of losing work. Since tasks are deleted from the queue only after they are completed if a preemptible/spot VM is shut down before completing the task, another VM can perform the task. Also, there is no harm in running a task more than once, so if two VMs do the same task, it will not adversely affect the output of the application. DataProc and Spanner are not appropriate products for this task.

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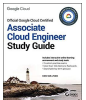
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A software engineer comes to you for a recommendation. She has implemented a machine learning algorithm to identify cancerous cells in medical images. The algorithm is computationally intensive, makes many mathematical calculations, requires immediate access to large amounts of data, and cannot be easily distributed over multiple servers. What kind of Compute Engine configuration would you recommend?

- A. High memory, high CPU
- B. High memory, high CPU, GPU
- C. Mid-level memory, high CPU
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An app for a finance company needs access to a database and a Cloud Storage bucket. There is no predefined role that grants all the needed permissions without granting some permissions that are not needed. You decide to create a custom role. When defining custom roles, you should follow which of the following principles?

- A. Rotation of duties
- B. Separation of duties
- C. Defense in depth
- D. Least privilege



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Ans: D. Users should have only the privileges that are needed to carry out their duties. This is the principle of least privilege. Rotation of duties is another security principle related to having different people perform a task at a different times. Defense in depth is the practice of using multiple security controls to protect the same asset. Option B is not a real security principal.

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Your client needs to store log files for an extended period of time for disaster recovery purposes. At most, the files will be accessed once per year and will all have the same access controls. What storage/access solution would you recommend?

- A. Multi-region Cloud Storage Coldline with bucket level permissions
- B. Regional Cloud Storage Coldline with fine grained permissions
- C. Multi-region Cloud Storage Archive with bucket level permissions
- D. Regional Cloud Storage Archive with bucket level permissions

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To save money, your customer wants to shutdown all developer VMs after hours. What is the best way to do this?

- A. Always deploy preemptible VMs for developers, as they provide the largest discount
- B. Assign labels to developer VMs and use Cloud Scheduler to run a Cloud Function to shut them down.
- C. Use Cloud Monitoring and create an alert to shut down VMs when no metrics are received within a given time frame.
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Your client is going to do a “lift and shift” of several user-facing applications running on VMs. They have several years of experience running the application and know its resource needs. What do you recommend to optimize costs?

- A. Use sustained use discounts
- B. Use committed use discounts
- C. Use preemptible machines
- D. Use the free-tier of Compute Engine

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You customer has deployed a web application using managed instance groups and load balancing. The web app uses several microservices on the backend. The best option for measuring reliability SLIs is:

- A. Use Cloud Monitoring for Compute Engine instance failures
- B. Use Cloud Monitoring for external HTTP(S) load balancer
- C. Use Cloud Logging and export the appropriate log information daily to BigQuery to analyze performance measures on an ongoing basis
- D. Use Cloud Monitoring/Logging and add observability into your services so that you can better understand your service performance and quickly identify issues

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Your client wants a connection between the on-premise data center and a Google Cloud VPC. The estimated bandwidth needed is 100 Mbps. What do you recommend?

- A. Carrier Peering
- B. Direct Peering
- C. Direct Interconnect
- D. Partner Interconnect

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A music streaming service has outgrown its current implementation and needs to scale in order to handle an estimated 700,000 events per second. Events include a user creating a playlist, stating a song, ending a song, etc. They would like to do advanced analytics and use machine learning to analyze user behavior and increase market share. They use Apache Beam on-premise and would like something similar in the cloud. Developers would like to query ML models using SQL.

- A. Pub/Sub, Dataflow, BigQuery ML
- B. Pub/Sub, Datastore, Dataproc
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What would you do to achieve high availability for a company's internal website running in Google Cloud, keeping costs in mind?

- A. Nothing special. Google ensure high availability for all services.
- B. Deploy the application to multiple zones in a region
- C. Deploy the application to one zone in two regions
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What would you do to achieve high availability for a company's internal website running in Google Cloud?

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For auditing purposes, your client want to analyze certain log records on a daily basis. They want to automatically delete log files over 7 days old. What's the best storage class to use, how do you get the log records into Cloud Storage and how do you setup the auto-deletion?

- A. Standard storage. Transfer the log records directly to Cloud Storage via a log sink. Setup a retention policy to delete files >7 days old.
- B. Standard storage. Export the log records to a csv file, then use gsutil to upload them into Cloud Storage. Setup a retention policy to delete files >7 days old.
- C. Nearline storage. Export the log records to a csv file, then use gsutil to upload them into Cloud Storage. Setup a lifecycle policy to delete files >7 days old.
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A client wants to create a group of web servers fronted by a load balancer for use by employees around the world. They are not concerned about network latency. They want high availability at the lowest cost possible.

- A. Create the web servers in multiple zones in a region closest to where most employees are located. Have the load balancer use the Premium service tier.
- B. Create the web servers in multiple regions, close to where employees are located. Have the load balancer use the Standard service tier.
- C. Create the web servers in a single zone in a region closest to where most employees are located. Have the load balancer use the Standard service tier.
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- A. Ok, but should use Standard tier.
- B. Deploying to multi regions increases costs, plus Standard tier is only for regional deployments
- C. No HA
- D. Correct

Your client needs to create several Compute Engine VMs which will house various MySQL instances currently being used on-prem. Your customer will be making database backups nightly and will use these to restore if a failure occurs. They want to do the move for the lowest possible cost. You know you need to add a data disk to each VM. What else do you need to do?

- A. Look at the size of the disks being used on-prem and make it 1.5 times bigger in order to store the backups on the VM. Use regional disks for redundancy.
- B. Look at the size of the databases being used on-prem and create a disk of the appropriate size. Use regional disks for redundancy. Copy database backups to a Cloud Storage bucket.
- C. Look at the size of the disks being used on-prem and create a zonal disk of the same size. Copy database backups to a Cloud Storage bucket.
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- A. No - using regional disk
- B. No - using regional disk
- C. No - should look at size of database, not the disk. Who knows why the disk is the current size?
- D. Correct

Your client is going to implement a web based application using Managed Instance Groups that will consist of 3 tiers: the frontend tier, a middle tier and a backend tier. Your client is very security conscious and wants to be sure that nothing has access to the backend tier except for the middle tier. What do you recommend?

- A. Use VPC Service Controls. Put the backend tier on one project, and the other two tiers in another project. Set up a perimeter around both projects
- B. Use Firewall Rules based on service accounts. Attach one service account to the middle tier systems and attach another one to the backend tier systems. Create an ingress firewall rule that allows communications among systems using these service accounts.
- C. Use Private Google Access to allow communication between the middle tier and the backend tier, and nothing else.
- D. Use Firewall Rules based on tags. Give the middle tier systems a tag of "mt" and the backend tier systems a tag of "be". Create an ingress firewall rule that allows access to systems with the "be" tag from systems with the "mt" tag.



Your client is going to implement a web based application using Managed Instance Groups that will consist of 3 tiers: the frontend tier, a middle tier and a backend tier. Your client is very security conscious and wants to be sure that nothing has access to the backend tier except for the middle tier. What do you recommend?

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- B. Use Firewall Rules based on service accounts. Attach one service account to the middle tier systems and attach another one to the backend tier systems. Create an ingress firewall rule that allows communications among systems using these service accounts.**
- C. Use Private Google Access to allow communication between the middle tier and the backend tier, and nothing else.
- D. Use Firewall Rules based on tags. Give the middle tier systems a tag of “mt” and the backend tier systems a tag of “be”. Create an ingress firewall rule that allows access to systems with the “be” tag from systems with the “mt” tag.



D would work, but it is not as secure as B.

Only certain people can assign service accounts to systems. Anyone who has permission to create a VM can assign a tag to the VM.

Your client wants a way to create repeatable deployments where configuration files could be supplied for different environments, e.g., development, ops and production. They would like to store the deployment files in a code repository, and have the deployment file automatically applied when pushed to a certain branch in the repository. They want the deployment files to work for both on-premise and GC deployments. What do you recommend?

- A. Terraform, Cloud Build, Git repository
- B. Deployment Manager, Cloud Build, Git repository
- C. Terraform, Cloud Workflow, Google Source Code Repository
- D. Deployment Manager, Cloud Workflow, Google Source Code Repository

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Your customer is converting an on-premises application to Google App Engine. They are willing to make minor changes to the app. You will use Cloud Identity to synchronize users and groups from their Active Directory. Users are required to login to the app. What authentication strategy should they use?

- A. Use Identity Aware Proxy
- B. Use Private Google Access
- C. Use VPC Service Controls
- D. Use Binary Authorization

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Your client is required to have a yearly audit of all the IAM changes that occurred over the past year. What is the easiest (and least expensive) way to manage this process?

- A. Create a alert on Log records that contain “setIamPolicy” and send an email to a mailbox that is monitored by the auditing company.
- B. Export Log records that contain “setIamPolicy” to BigQuery, and run a nightly job that processes the information and appends the results to a BigQuery dataset. Give auditors “view” access to this data.
- C. Filter the log results that contain “setIamPolicy and send them to Cloud Storage via a sink. Create a signed URL that auditors can used to access this data for a limited time.
- D. Export Log records that contain “setIamPolicy” to Bigtable. Use Dataproc jobs to process the data and store the result into Cloud Storage. Give auditors “view” access to this data.



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Your customer is creating a database application. The database will be hosted in Cloud SQL and will be protected by a password. The application that will use the database is located in Compute Engine. How do you store the password securely, while also allowing access to it by the application?

- A. Use Cloud Secret Manager
- B. Use Cloud Key Management Service
- C. Use Customer Supplied Encryption keys to access the Cloud Storage bucket which contains the password
- D. Use Customer Managed Encryption keys to access the Cloud Storage bucket which contains the password

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A customer has a monolithic application which has not been designed to allow incremental rollout of new code. They have made updates to some of the code. They need to keep the production environment on-line while updates are tested. What deployment strategy should they use?

- A. Blue/Green deployment
- B. Canary deployment
- C. Multivariate deployment
- D. A/B deployment

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Correct answer is A

Blue/Green deployment is the kind of deployment that allows developers to deploy new code to an entire environment before switching traffic to it. Option D and Option B are incorrect because they are incremental deployment strategies. Option C is not an actual deployment strategy.

A developer made a few changes to several microservices-based applications. After the change, the department head received reports of longer response times and asked you to look into the cause. You know that one API request can call other APIs. What is the best tool for troubleshooting this?

- A. Cloud Monitoring
- B. Cloud Debugger
- C. Cloud Profiler
- D. Cloud Trace

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Edward has created a Managed Instance Group in the region closest to his headquarters. He is using the Standard network tier to reduce costs. Edward has just been told that he needs to implement a hot standby for disaster recovery. What do you recommend?

- A. Create another Managed Instance Group in another region using the same instance template as the current one. Modify the backend of the current load balancer and add the new instance group to it.
- B. Create another Managed Instance Group in another region using the same instance template as the current one. Delete the existing load balancer and create a new one with both MIGs in the backend and specify the Premium tier.
- C. Create scripts to deploy a new Managed Instance Group in another region, along with a new load balancer should the need arise.
- D. Edward needs to explain to management that no additional action is required, as the existing Managed Instance Group is already deployed in multiple zones in a Region. If something were to happen in one zone, the others would not be impacted.

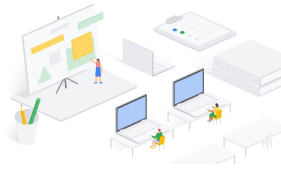
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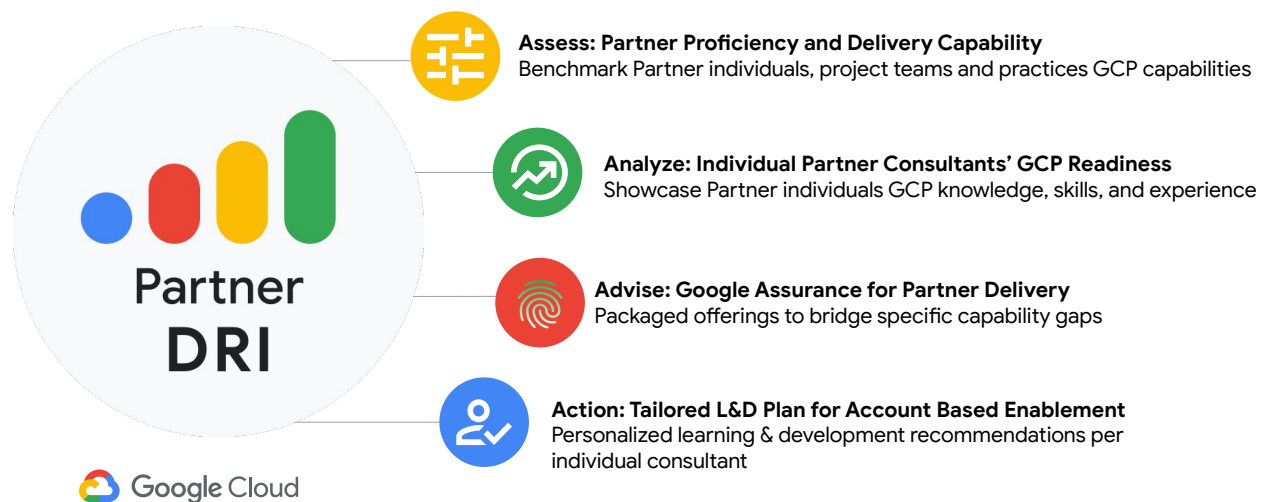


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DRI assesses and analyzes Partner Consultant GCP proficiency by creating a DRI Profile inclusive of their GCP knowledge, skills, and experience.

With the DRI insights, we can prescriptively advise the partner project team on the ground and bridge niche capability gaps.

DRI also takes action. For partner consultants, DRI generates a tailored L&D plan that prescribes personalized learning, training, and skill development to build GCP proficiency.

