

Assignment and Exam Content

Cloud Spanner

Always Delete your Cloud Resources to Avoid \$\$ Charges.

Cloud Spanner Lab

Cloud Spanner Lab Contains – Three major areas below to say complete Lab 😊

A

Launch Cloud Spanner Instance

Understand basic concepts – Locations, Performance Read/ Write IOPS etc

B

Exam Tips

Always Delete your Cloud Resources to Avoid \$\$ Charges.

A

Create Cloud SQL Instance

1

Go To -> STORAGE -> Spanner -> Click on Create Instance

You will need to provide different parameter

2

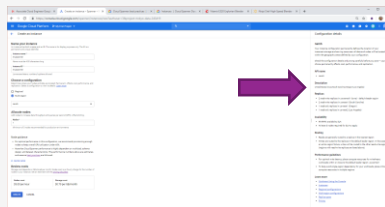
1. Name : Obviously your instance name

2. Instance ID : if you want to change

3. Choose Config-> Regional vs Multi regional

- Select Regional for this demo

4. Select region of your choice (if its multi regional choose area – Watch for configuration details on right side



5. Select 1 node.

Google Cloud Platform My First Project

Create an instance

Name your instance
An instance has both a name and an ID. The name is for display purposes only. The ID is a permanent and unique identifier.

Instance name *
mysoanner
Name must be 4-30 characters long

Instance ID *
mysoanner
Lowercase letters, numbers, hyphens allowed

Choose a configuration
Determines where your nodes and data are located. Permanent. Affects cost, performance, and replication. Select a configuration to view its details. [Learn more](#)

☒ Regional
☐ Multi-region

us-west1

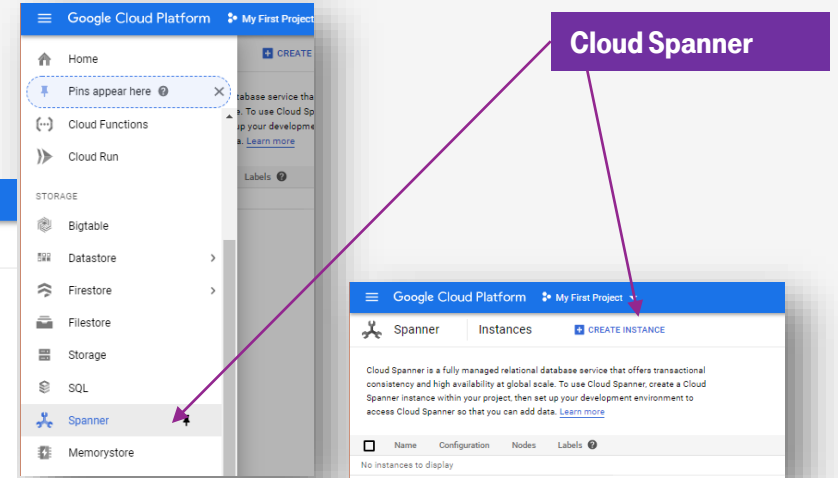
Allocate nodes
Add nodes to increase data throughput and queries per second (QPS). Affects billing.

Nodes *
1
Minimum of 3 nodes recommended for production environments

Review costs
Storage cost depends on GB stored per month. Nodes cost is an hourly charge for the number of nodes in your instance. Get an estimate with the [pricing calculator](#).

Nodes cost \$0.90 per hour	Storage cost \$0.30 per GB/month
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CREATE CANCEL



Cloud Spanner

Cloud Spanner is a fully managed relational database service that offers **transactional consistency and high availability at global scale**.

To use Cloud Spanner, create a Cloud Spanner instance within your project, then set up your development environment to access Cloud Spanner so that you can add data. [Learn more](#)

1

Create Cloud SQL Instance

3

Review Cost – (important for exam)

Cloud Spanner cost is dependent on cost per node + Storage cost per GB.

While Choosing Nodes – Please check Node Guidance for

Node Guidance

Node guidance

- Each Cloud Spanner node in this configuration can provide up to 10,000 QPS of reads or 2,000 QPS of writes (writing single rows at 1KB data per row), and 2 TiB storage.
- For optimal performance in this configuration, we recommend provisioning enough nodes to keep overall CPU utilization under 75%.
- Note that Cloud Spanner performance is highly dependent on workload, schema design, and dataset characteristics. The performance numbers above are estimates, and assume [best practices](#) are followed.

Cloud Spanner Performance

- Performance is dependent on number of Nodes
- Cost also dependent on nodes.
- Please go through Best Practices docs in following link.

<https://cloud.google.com/spanner/docs/best-practice-list>

Configuration Details

On right side of panel gives you details of configuration you selected.

Go through details and differences when you choose Regional vs multi regional.

Configuration details

us-west1

Your instance configuration permanently defines the location of your instance's storage and serving resources: all data and nodes will be located within the geographic areas defined by your configuration.

Check the configuration details and pricing carefully before you save — your choice permanently affects cost, performance, and replication.

API name

regional-us-west1

Replicas

- 3 read-write replicas in 3 separate zones within the region us-west1

Availability

- 99.99% availability SLA
- At least 3 nodes required for SLA to apply

Routing

- Reads/writes are routed to Cloud Spanner replicas in this region

Performance guidelines

- For optimal performance with this configuration, we recommend you place your critical compute resources (writes and latency-sensitive reads) within the region: us-west1.

Learn more

- [Quickstart Using the Console](#)
- [Instances](#)
- [Regional configurations](#)
- [Multi-region configurations](#)
- [Replica types](#)
- [Pricing](#)

Configuration details

nam3

Your instance configuration permanently defines the location of your instance's storage and serving resources: all data and nodes will be located within the geographic areas defined by your configuration.

Check the configuration details and pricing carefully before you save — your choice permanently affects cost, performance, and replication.

API name

- nam3

Description

United States (Northern Virginia/South Carolina)

Replicas

- 2 read-write replicas in us-east4 (Northern Virginia) - default leader region
- 2 read-write replicas in us-east1 (South Carolina)

Availability

- 99.999% availability SLA
- At least 3 nodes required for SLA to apply

Routing

- Reads are generally routed to replicas in the instance's default leader region.
- Writes are routed to the replicas in the default leader region. In the case of an entire region failure, writes are routed to other read-write regions.

Performance

- For optimal performance, place your critical compute resources for write-heavy workloads within or close to the default leader region: us-east4.
- To help achieve high availability, place your critical compute resources in multiple regions.

Learn more

- [Quickstart Using the Console](#)
- [Instances](#)
- [Regional configurations](#)
- [Multi-region configurations](#)
- [Replica types](#)
- [Pricing](#)

1

Create Cloud Spanner

4

Click Create at the bottom to create instance

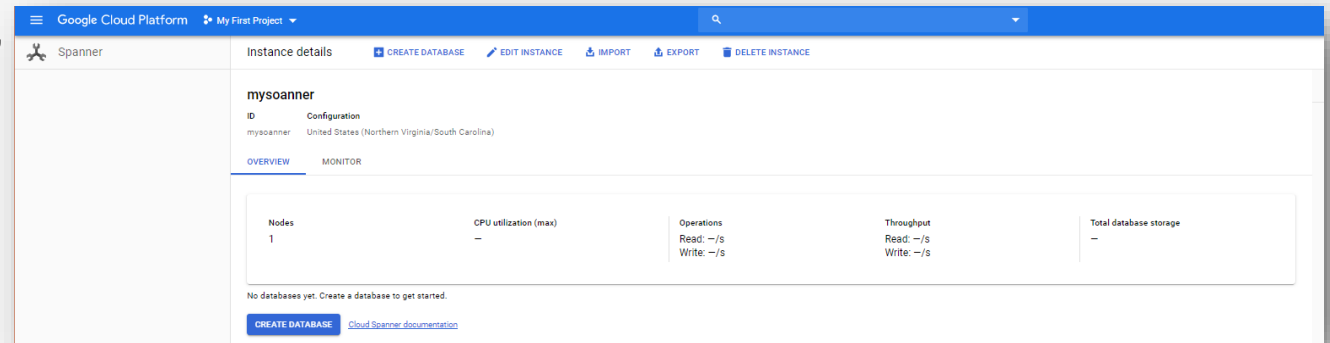
- Your instance is now created, and you can database , add tables , Interleaved tables etc

You can modify instance – using EDIT INSTANCE

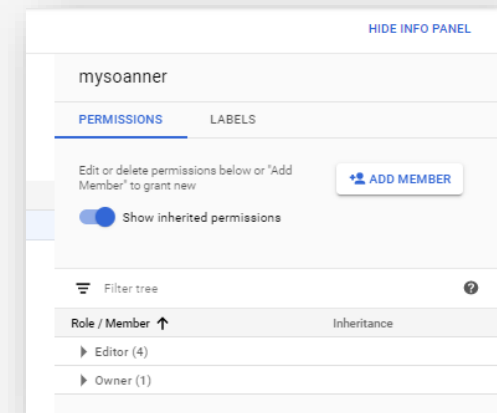
You can import and export data using link given on spanner page.

To create Tables and add data – please follow google docs link below

<https://cloud.google.com/spanner/docs/quickstart-console>



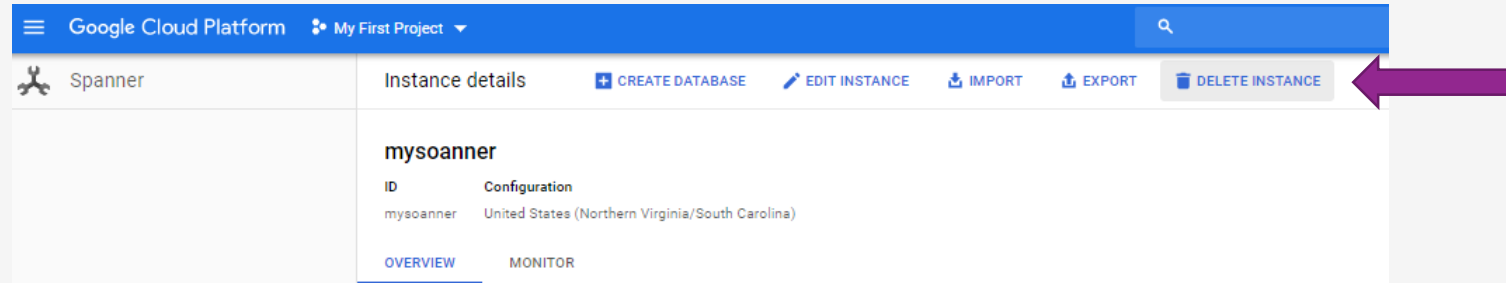
You can manage permissions in right side of panel at Spanner home page.



2

Create Cloud Spanner Instance

1



Before Creating next Instance

- Delete Old Instance and Proceed further

Always Delete your Cloud Resources to Avoid \$\$ Charges.

Cloud Spanner : Try Yourself

1

Edit Instance and see what you can edit and what you can not.

2

Exam Tips

Important concepts are

1. Global Relational database with high consistency
2. Performance is dependent on number of nodes
3. Cost is dependent on number of nodes.
4. Interleaved tables exists in Spanner.
5. If you need Global scale database – You can use spanner.

End of Cloud Spanner Assignment