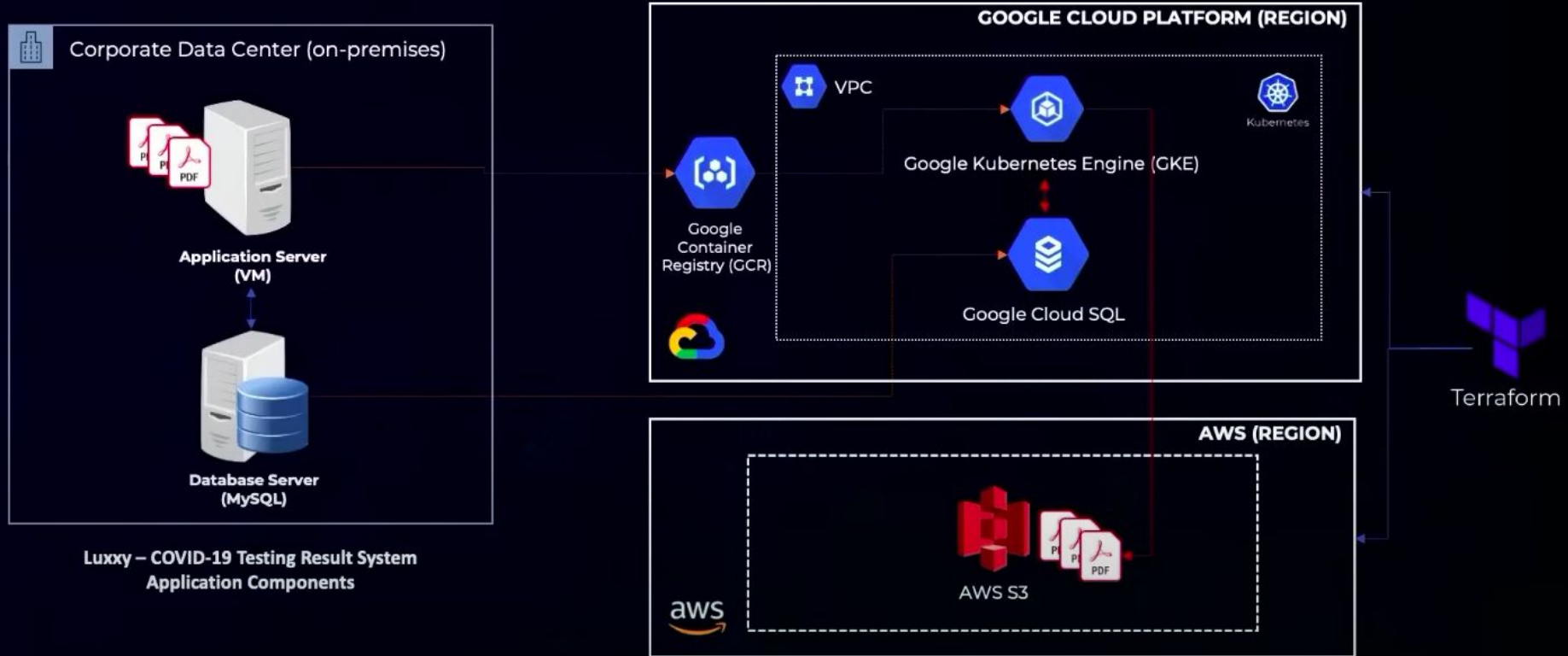




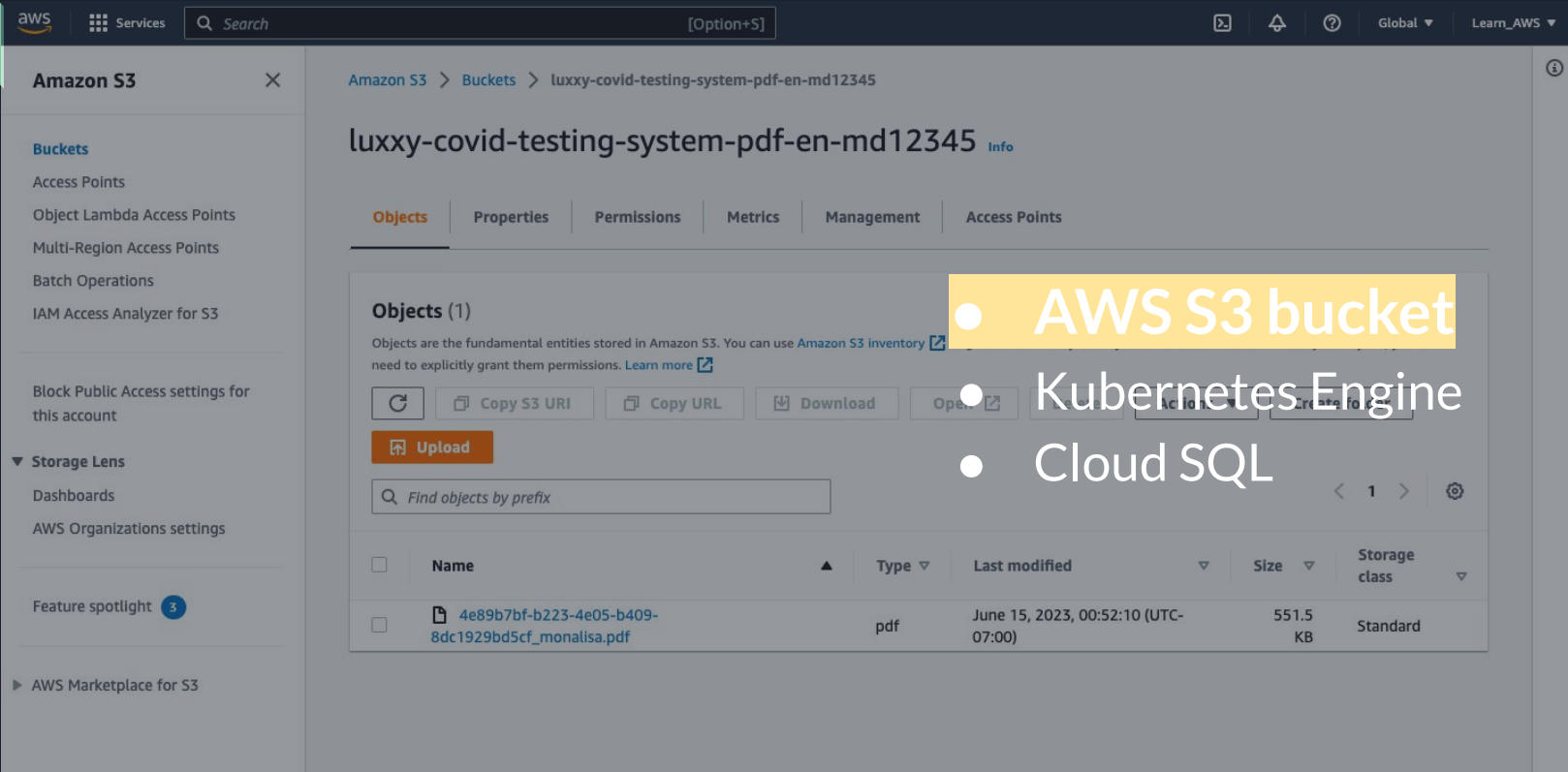
The Cloud Bootcamp: Multi-Cloud Project

Monalisa Dokania • 06.18.2023

SOLUTION ARCHITECTURE



Infrastructure provisioning - Terraform



The screenshot displays the AWS S3 console interface. The left sidebar shows the 'Amazon S3' navigation menu with options like Buckets, Access Points, and IAM Access Analyzer for S3. The main content area shows the details for a bucket named 'luxxy-covid-testing-system-pdf-en-md12345'. The 'Objects' tab is selected, showing a list of objects. A yellow highlight box is placed over the text 'AWS S3 bucket' in the image. Three white bullet points are overlaid on the right side of the image, listing 'AWS S3 bucket', 'Kubernetes Engine', and 'Cloud SQL'.

Amazon S3

Buckets

Access Points

Object Lambda Access Points

Multi-Region Access Points

Batch Operations

IAM Access Analyzer for S3

Block Public Access settings for this account

▼ **Storage Lens**

Dashboards

AWS Organizations settings

Feature spotlight **3**

► AWS Marketplace for S3

Amazon S3 > Buckets > luxxy-covid-testing-system-pdf-en-md12345

luxxy-covid-testing-system-pdf-en-md12345 Info

Objects Properties Permissions Metrics Management Access Points

Objects (1)

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) need to explicitly grant them permissions. [Learn more](#)

Copy S3 URI Copy URL Download Open

Upload

Find objects by prefix

<input type="checkbox"/>	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	4e89b7bf-b223-4e05-b409-8dc1929bd5cf_monalisa.pdf	pdf	June 15, 2023, 00:52:10 (UTC-07:00)	551.5 KB	Standard

- AWS S3 bucket
- Kubernetes Engine
- Cloud SQL

Infrastructure provisioning - Terraform

Google Cloud | My First Project | Search (/) for resources, docs, products, and more | Search

Kubernetes Engine | Services & Ingress | REFRESH | CREATE INGRESS | DELETE | HELP ASSISTANT | LE

Clusters | Workloads | **Services & Ingress** | Applications | Secrets & ConfigMaps | Marketplace | Release Notes

Cluster: [dropdown] | Namespace: [dropdown] | RESET | SAVE

SERVICES | INGRESS

Services are sets of Pods with a network endpoint that can be used for discovery and load balancing. Ingresses are collections of rules for routing external HTTP(S) traffic to Services.

Filter: **Is system object: False** | Filter services and ingresses

<input type="checkbox"/>	Name ↑	Status	Type	Endpoints	Pods	Namespace	Clusters
<input type="checkbox"/>	luxxy-covid-testing-system	OK	External load balancer	34.85.225.243.80	1/1	default	luxxy-kubernetes-cluster-en

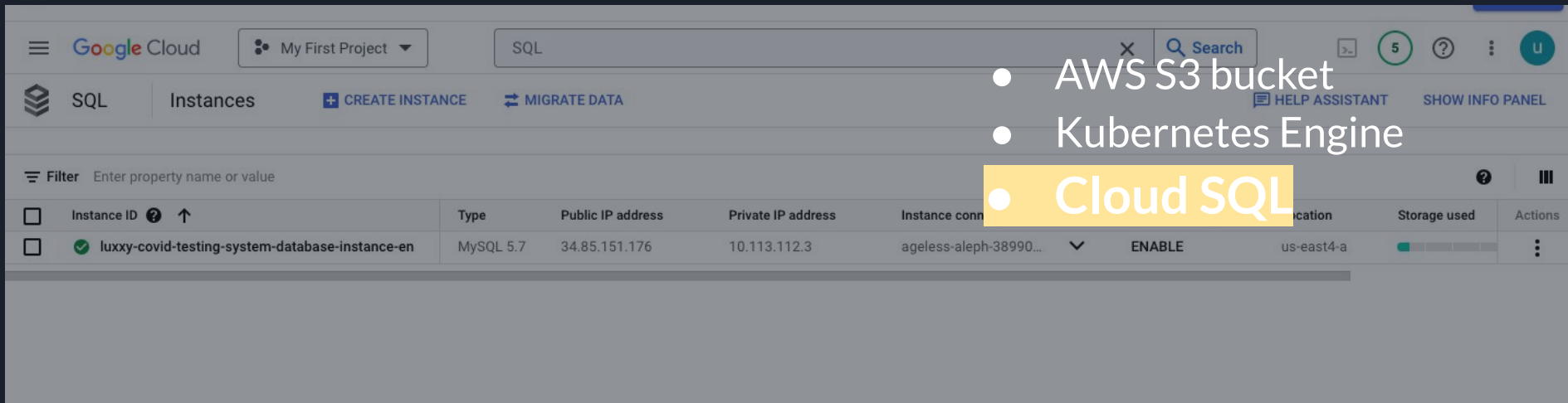
CLOUD SHELL | Terminal | (ageless-aleph-389905) | + | Open Editor

- AWS S3 bucket
- **Kubernetes Engine**
- Cloud SQL

```
p545@cloudshell:~/mission2_en/mission2/en/kubernetes (ageless-aleph-389905)$ kubectl get nodes
NAME                                STATUS    ROLES    AGE   VERSION
xxy-kubernetes-clu-default-pool-ccfdd04b-hjxz Ready    <none>   55m   v1.25.8-gke.500
xxy-kubernetes-cluster-e-pool-1-dec33794-kfzz Ready    <none>   52m   v1.25.8-gke.500
p545@cloudshell:~/mission2_en/mission2/en/kubernetes (ageless-aleph-389905)$
```

Infrastructure provisioning - Terraform

- AWS S3 bucket
- Kubernetes Engine
- Cloud SQL



The screenshot displays the Google Cloud SQL console interface. At the top, the Google Cloud logo and 'My First Project' are visible. The 'SQL' section is active, showing 'Instances' with options to 'CREATE INSTANCE' and 'MIGRATE DATA'. A search bar and a 'HELP ASSISTANT' button are also present. Below the navigation bar, a table lists the instances. The first instance, 'luxy-covid-testing-system-database-instance-en', is highlighted. The table columns include Instance ID, Type, Public IP address, Private IP address, Instance connection name, Location, Storage used, and Actions.

Instance ID	Type	Public IP address	Private IP address	Instance connection name	Location	Storage used	Actions
luxy-covid-testing-system-database-instance-en	MySQL 5.7	34.85.151.176	10.113.112.3	ageless-aleph-38990...	us-east4-a	<div><div></div></div>	<div></div>

Docker image in Google Container registry

Google Cloud

My First Project

Container Registry

Repositories

Container Registry is deprecated. After May 15, 2024, Artifact Registry will host images for the gcr.io domain in projects without previous Container Registry usage.

My First Project

Filter Enter property name or value

Name ↑	Hostname ?	Visibility ?
luxxy-covid-testing-system-app-en	gcr.io	Private

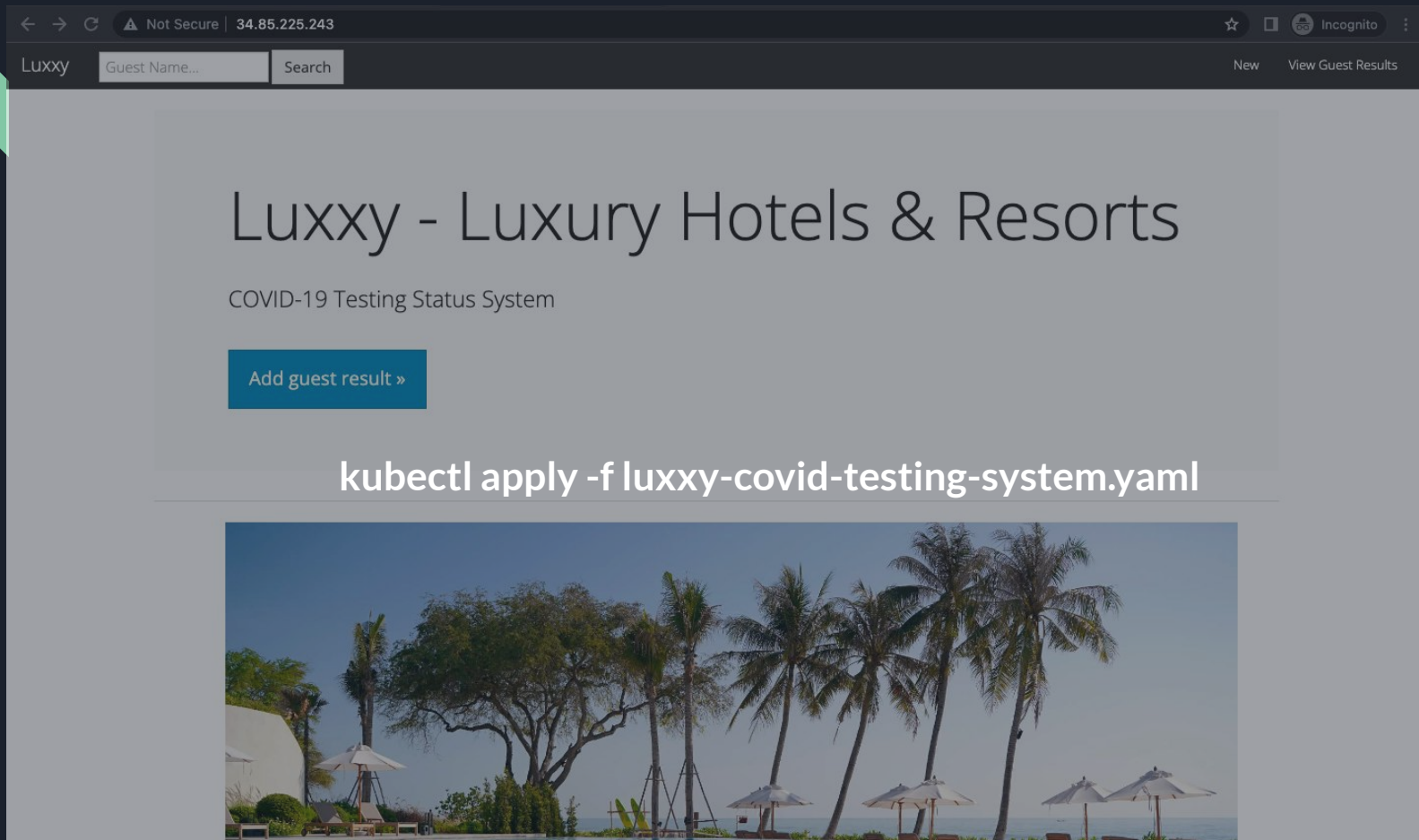
Cloud Shell

Terminal (ageless-aleph-389905) × + ▾


Open Editor


```
Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is set to ageless-aleph-389905.
Use "gcloud config set project [PROJECT_ID]" to change to a different project.
usetemp545@cloudshell:~ (ageless-aleph-389905)$ gcloud builds submit --tag gcr.io/ageless-aleph-389905/luxxy-covid-testing-system-app-en
```

Application Deployment



Data Migration - Records to Cloud SQL

 My First Project SQL

 CLOUD SHELL
Terminal (ageless-aleph-389905) X +

```
usertemp545@cloudshell:~/mission3_en (ageless-aleph-389905)$ mysql --host=34.85.151.176 --port=3306 -u app -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 65846
Server version: 5.7.42-google (Google)
```

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

```
mysql> use dbcovidtesting;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A
```

```
Database changed
mysql> source ~/mission3_en/mission3/en/db/db_dump.sql
Query OK, 0 rows affected (0.06 sec)
```

```
Query OK, 0 rows affected (0.05 sec)
```

```
Query OK, 0 rows affected (0.06 sec)
```

```
Query OK, 0 rows affected (0.06 sec)
```

```
Query OK, 0 rows affected (0.05 sec)
```

```
Query OK, 0 rows affected (0.06 sec)
```

```
Query OK, 0 rows affected (0.06 sec)
```


```
Query OK, 0 rows affected (0.06 sec)
```


```
Query OK, 0 rows affected, 1 warning (0.05 sec)
```

```
Query OK, 0 rows affected (0.05 sec)
```

```
Query OK, 0 rows affected (0.14 sec)
```

```
Query OK, 0 rows affected (0.06 sec)
```

 My First Project SQL

 CLOUD SHELL
Terminal (ageless-aleph-389905) X +

```
mysql> select * from records;
```

id	guest_name	home_country	testing_type	testing_result	pdf
1	Ervin Miles	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-ervin.pdf
2	Jackie Stone	UK	Antigen	Negative	s029s02-as0202o9s-s29312-as-jackie.pdf
3	Joseph Vargas	Germany	Antigen	Negative	s029s02-as0202o9s-s29312-as-joseph.pdf
4	Velma Allison	Finland	Antigen	Negative	s029s02-as0202o9s-s29312-as-velma.pdf
5	Darryl Gregor	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-darryl.pdf
6	Jeannie Newto	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-jeanni.pdf
7	Kumar Moore	India	Antigen	Negative	s029s02-as0202o9s-s29312-as-lydia.pdf
8	Troy Gross	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-troyg.pdf
9	Sally Mcguire	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-sally.pdf
10	João Silva	Brazil	Antigen	Negative	s029s02-as0202o9s-s29312-as-johnni.pdf
11	Otis Pearson	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-otis.pdf
12	Rosemary Mory	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-rosema.pdf
13	Tony Barnes	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-tonyb.pdf
14	Theresa Mcgee	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-theres.pdf
15	Dora Phillips	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-dorap.pdf
16	Irving Harvey	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-irving.pdf
17	Isaac Cobb	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-isaac.pdf
18	Shaun Alexand	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-shaun.pdf
19	Jana Cruz	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-janac.pdf
20	Tricia Berry	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-tricia.pdf
21	Annie Meyer	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-annie.pdf
22	Peter Patrick	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-peter.pdf
23	Laurence Wade	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-lauren.pdf
24	Roger Summers	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-roger.pdf
25	Yvonne Stevonn	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-yvonne.pdf
26	Lisa Lloyd	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-lisal.pdf
27	Terry McCormi	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-terry.pdf
28	Javier Reid	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-javier.pdf
29	Jamie George	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-jamie.pdf
30	Judith Miller	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-judith.pdf
31	Dallas Maxwell	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-dallas.pdf
32	Kristin Agull	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-kristi.pdf
33	Marilyn Colli	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-marily.pdf
34	Clifford Gray	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-cliffo.pdf
35	Beverly Cohen	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-beverl.pdf
36	Mandy Caldwell	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-mandy.pdf
37	Charlene Brya	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-charle.pdf
38	Phil Lawrence	USA	Antigen	Negative	s029s02-as0202o9s-s29312-as-phill.pdf

Data Migration - Files to AWS Bucket

aws

Services

Search

[Option+S]

Amazon S3

Buckets

Access Points

Object Lambda Access Points

Multi-Region Access Points

Batch Operations

IAM Access Analyzer for S3

Block Public Access settings for this account

Amazon S3 > Buckets > luxxy-covid-testing-system-pdf-en-md12345

luxxy-covid-testing-system-pdf-en-md12345

Objects Properties Permissions Metrics Management Access Points

Objects (1)

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in need to explicitly grant them permissions. [Learn more](#)

Copy S3 URI

Copy URL

Download

Open

Delete

Upload

AWS CloudShell

us-east-1

```
[cloudshell-user@ip-10-4-55-54 pdf_files]$ aws s3 sync s3://luxxy-covid-testing-system-pdf-en-md12345 upload: ./s029s02-as0202o9s-s29312-as-annsh.pdf to s3://luxxy-covid-testing-system-pdf-en-md12345/s029s02-as0202o9s-s29312-as-annsh.pdf upload: ./s029s02-as0202o9s-s29312-as-charlie.pdf to s3://luxxy-covid-testing-system-pdf-en-md12345/s029s02-as0202o9s-s29312-as-charlie.pdf upload: ./s029s02-as0202o9s-s29312-as-amanda.pdf to s3://luxxy-covid-testing-system-pdf-en-md12345/s029s02-as0202o9s-s29312-as-amanda.pdf upload: ./s029s02-as0202o9s-s29312-as-cliffo.pdf to s3://luxxy-covid-testing-system-pdf-en-md12345/s029s02-as0202o9s-s29312-as-cliffo.pdf upload: ./s029s02-as0202o9s-s29312-as-annie.pdf to s3://luxxy-covid-testing-system-pdf-en-md12345/s029s02-as0202o9s-s29312-as-annie.pdf upload: ./s029s02-as0202o9s-s29312-as-dorap.pdf to s3://luxxy-covid-testing-system-pdf-en-md12345/s029s02-as0202o9s-s29312-as-dorap.pdf upload: ./s029s02-as0202o9s-s29312-as-brandi.pdf to s3://luxxy-covid-testing-system-pdf-en-md12345/s029s02-as0202o9s-s29312-as-brandi.pdf upload: ./_DS_Store to s3://luxxy-covid-testing-system-pdf-en-md12345/_DS_Store upload: ./s029s02-as0202o9s-s29312-as-isaac.pdf to s3://luxxy-covid-testing-system-pdf-en-md12345/s029s02-as0202o9s-s29312-as-isaac.pdf upload: ./s029s02-as0202o9s-s29312-as-darryl.pdf to s3://luxxy-covid-testing-system-pdf-en-md12345/s029s02-as0202o9s-s29312-as-darryl.pdf upload: ./s029s02-as0202o9s-s29312-as-jackie.pdf to s3://luxxy-covid-testing-system-pdf-en-md12345/s029s02-as0202o9s-s29312-as-jackie.pdf upload: ./s029s02-as0202o9s-s29312-as-jamie.pdf to s3://luxxy-covid-testing-system-pdf-en-md12345/s029s02-as0202o9s-s29312-as-jamie.pdf upload: ./s029s02-as0202o9s-s29312-as-janac.pdf to s3://luxxy-covid-testing-system-pdf-en-md12345/s029s02-as0202o9s-s29312-as-janac.pdf upload: ./s029s02-as0202o9s-s29312-as-dallas.pdf to s3://luxxy-covid-testing-system-pdf-en-md12345/s029s02-as0202o9s-s29312-as-dallas.pdf upload: ./s029s02-as0202o9s-s29312-as-irvina.pdf to s3://luxxy-covid-testing-system-pdf-en-md12345/s029s02-as0202o9s-s29312-as-irvina.pdf
```

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[Option+S]

Global

Amazon S3 > Buckets > luxxy-covid-testing-system-pdf-en-md12345

luxxy-covid-testing-system-pdf-en-md12345

Objects Properties Permissions Metrics Management Access Points

Objects (52)

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

Copy S3 URI

Copy URL

Download

Open

Delete

Actions

Create folder

Upload

Find objects by prefix

<input type="checkbox"/>	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	._DS_Store	DS_Store	June 18, 2023, 11:37:31 (UTC-07:00)	6.0 KB	Standard
<input type="checkbox"/>	4e89b7bf-b223-4e05-b409-8dc1929bd5cf_monalisa.pdf	pdf	June 15, 2023, 00:52:10 (UTC-07:00)	551.5 KB	Standard
<input type="checkbox"/>	s029s02-as0202o9s-s29312-as-amanda.pdf	pdf	June 18, 2023, 11:37:31 (UTC-07:00)	175.2 KB	Standard
<input type="checkbox"/>	s029s02-as0202o9s-s29312-as-annie.pdf	pdf	June 18, 2023, 11:37:31 (UTC-07:00)	175.2 KB	Standard
<input type="checkbox"/>	s029s02-as0202o9s-s29312-as-annsh.pdf	pdf	June 18, 2023, 11:37:31 (UTC-07:00)	175.2 KB	Standard

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Test Application

Not Secure | 34.85.225.243/search?name=

est Name... Search New View

Records

Guest Name	Home Country	Testing Type	Testing Result	Scanned Result (PDF)		
Amanda Colema	USA	Antigen	Negative	Link	Edit	Delete
Ann Sharp	USA	Antigen	Negative	Link	Edit	Delete
Annie Meyer	USA	Antigen	Negative	Link	Edit	Delete
Beverly Cohen	USA	Antigen	Negative	Link	Edit	Delete
Billie Baldwi	USA	Antigen	Negative	Link	Edit	Delete
Brandi Mathis	USA	Antigen	Negative	Link	Edit	Delete
Charlene Brya	USA	Antigen	Negative	Link	Edit	Delete
Clifford Gray	USA	Antigen	Negative	Link	Edit	Delete
Dallas Maxwell	USA	Antigen	Negative	Link	Edit	Delete
Darryl Gregor	USA	Antigen	Negative	Link	Edit	Delete
Dora Phillips	USA	Antigen	Negative	Link	Edit	Delete
Erin Miles	USA	Antigen	Negative	Link	Edit	Delete

n-md12345.s3.amazonaws.com/s029s02-as02020s-s29312-as-amanda.pdf?AWSAccessKeyId=AKIAWG56EJRLB3SI... ☆ Incogni

1 / 1 100% +

SUMMIT MEDICAL GROUP

1 Diamond Hill Road
Berkeley Heights, NJ 07922
LABORATORY DEPARTMENT

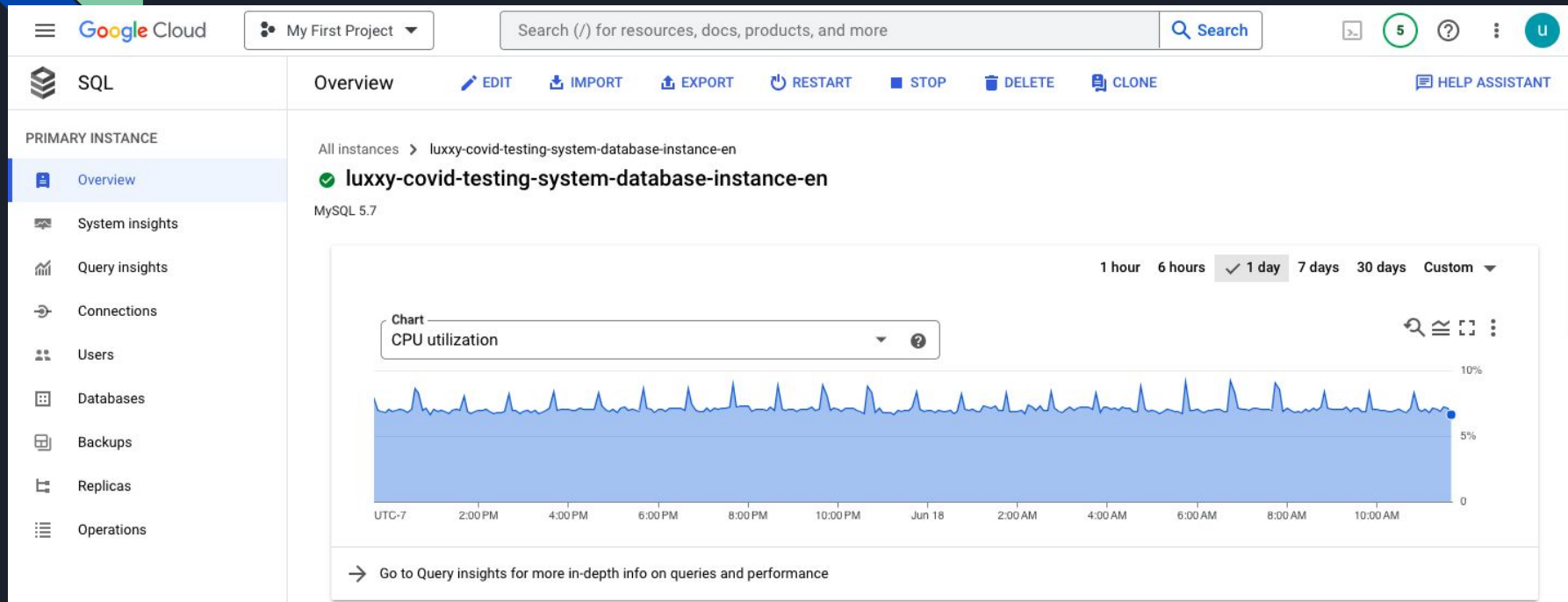
31D0116144
Gordana Katava, DO

Name/DOB: **TESTPATIENT, MARGUERITE (6/14/1995)** Provider: Provider Test
Patient ID: EH3 Sex: F Fasting: Draw Location: BH_IDiamond_LAB
Phone number: (908) 273-4344 Age: 24 Case Number: 2016202006
Procedure Date: 6/10/2020 4:23 PM Home Chart Location: Technician: Kahul Patel
Approval date: 6/10/2020 4:26 PM Encounter ID: Entered by: Kahul Patel

TEST NAME	RESULT	UNITS	REFERENCE RANGE
	IN RANGE	OUT OF RANGE	
COVID-19 Antigen			KP
COVID-19 Antigen 06/10/20 4:25 PM	NEGATIVE		
A negative test result does not rule out the possibility of an infection with SARS-CoV-2. Serum or plasma samples from the early (pre-seroconversion) phase of illness can yield negative findings. Therefore, this test cannot be used to diagnose an acute infection. Testing with molecular diagnostic should be performed to evaluate for active infection in symptomatic individuals. It is not known at this time if the presence of antibodies to SARS-CoV-2 confers immunity to reinfection. False positive results for the test may occur due to cross-reactivity. The Siemens Covid-19 Total Antibody test was developed, and its performance characteristics determined by Siemens for the Vista 1500. The FDA has authorized this test for EUA.			

Educational purposes only

CPU Utilisation





Thank You!