Google Cloud SQL

Google Cloud Platform

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Agenda

1. Cloud SQL Overview
2. Cloud SQL Integration with GCE and GAE
3. Comparing Google Cloud Platform Storage Options
4. Lab

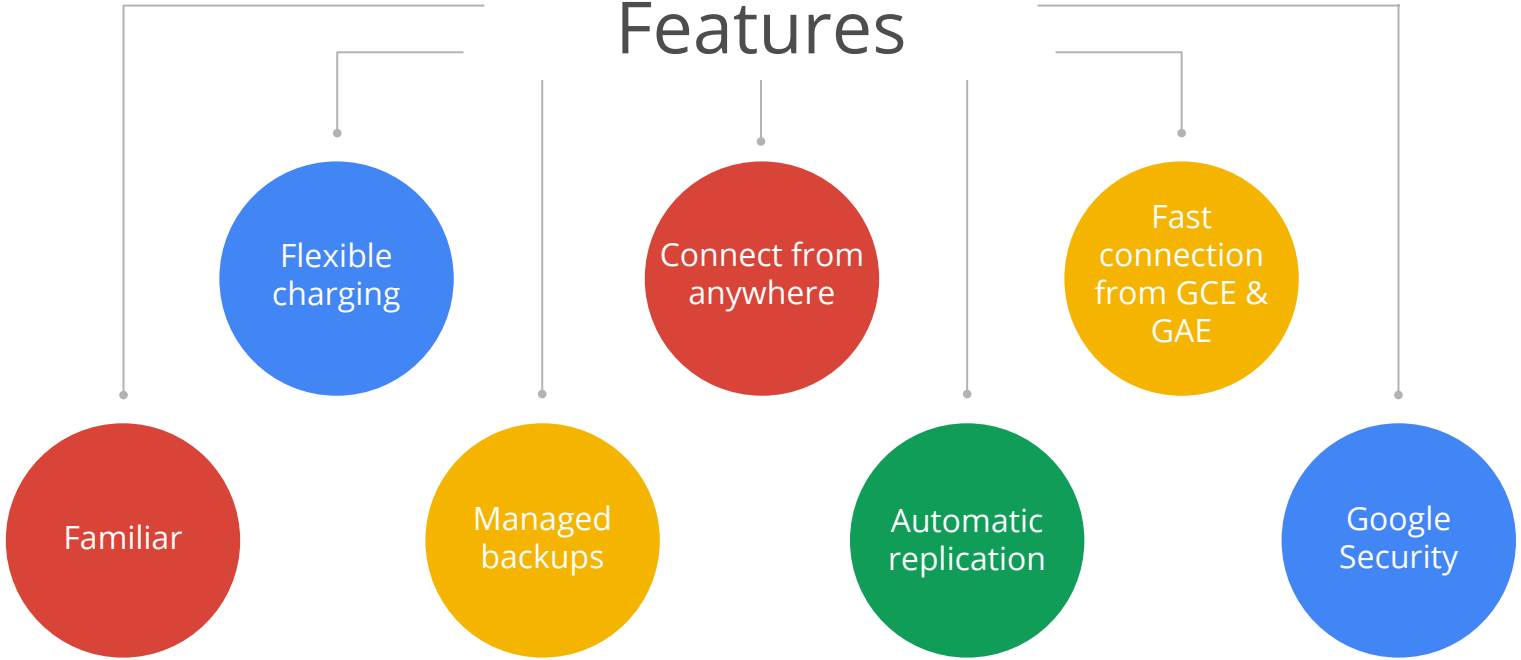
Cloud SQL

- Google-managed **MySQL**
- **Pay-per-use model**
- REST **API** for management
- Affordability and performance
- Google **Security**
- Vertical scaling (read and write)
- Horizontal scaling (read)
- Seamless **integration** with Google App Engine and Compute Engine

“The Google solution is the only one that gives you the ability to have independent databases, and to provision them affordably.”

- Mani Doraisamy, KISSFLOW

Cloud SQL Features



MySQL Support

Cloud SQL supports most MySQL statements and functions

- Stored Procedures
- Triggers
- Views

Not supported

- User-defined functions
- MySQL-esque replication
- Statements and functions related to files and plugins

Interacting with Cloud SQL

Use standard tools to interact with Cloud SQL databases, such as the MySQL client:

```
$ mysql --host=instance-IP --user=user-name --password
```

Use `gcloud sql` to **administer** instances:

```
$ gcloud sql instances create <instance_name>
```

Other command groups:

```
backups          # work with backups
flags            # list flags
operations       # view instance operations
ssl-certs        # work with ssl certificates
tiers            # list available tiers
```

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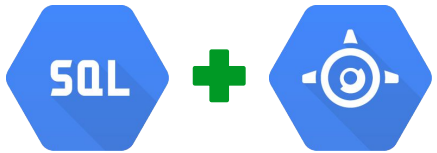
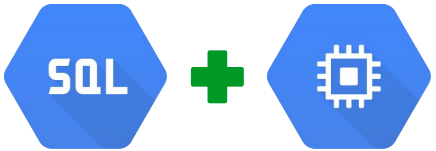
Cloud SQL Integration



Cloud SQL can be used with App Engine using standard drivers like Connector/J or MySQLdb for Java and Python respectively.

App Engine applications are authorized to access Cloud SQL, and the instance can be configured to follow one application.



Compute Engine instances can be authorized to access Cloud SQL instances using their external IP address.

Cloud SQL instances can be configured with a preferred zone to stay close to the Compute Engine infrastructure.

Cloud SQL can also be used with external applications and clients by authorizing IP addresses or networks using CIDR notation.

Standard tools like MySQL Workbench can be used to administer databases, or external read replicas can be configured.

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Comparing Storage Options

	Cloud Datastore	**Cloud Storage**	**Cloud SQL**
Overall capacity	Terabytes +	Petabytes +	up to 500 GB
Unit size	1 megabyte / entity	5 TB / object	Standard MySQL limits
Storage type	NoSQL	Object store	Relational SQL
Primary use case	Use with App Engine	General unstructured data	Managed MySQL

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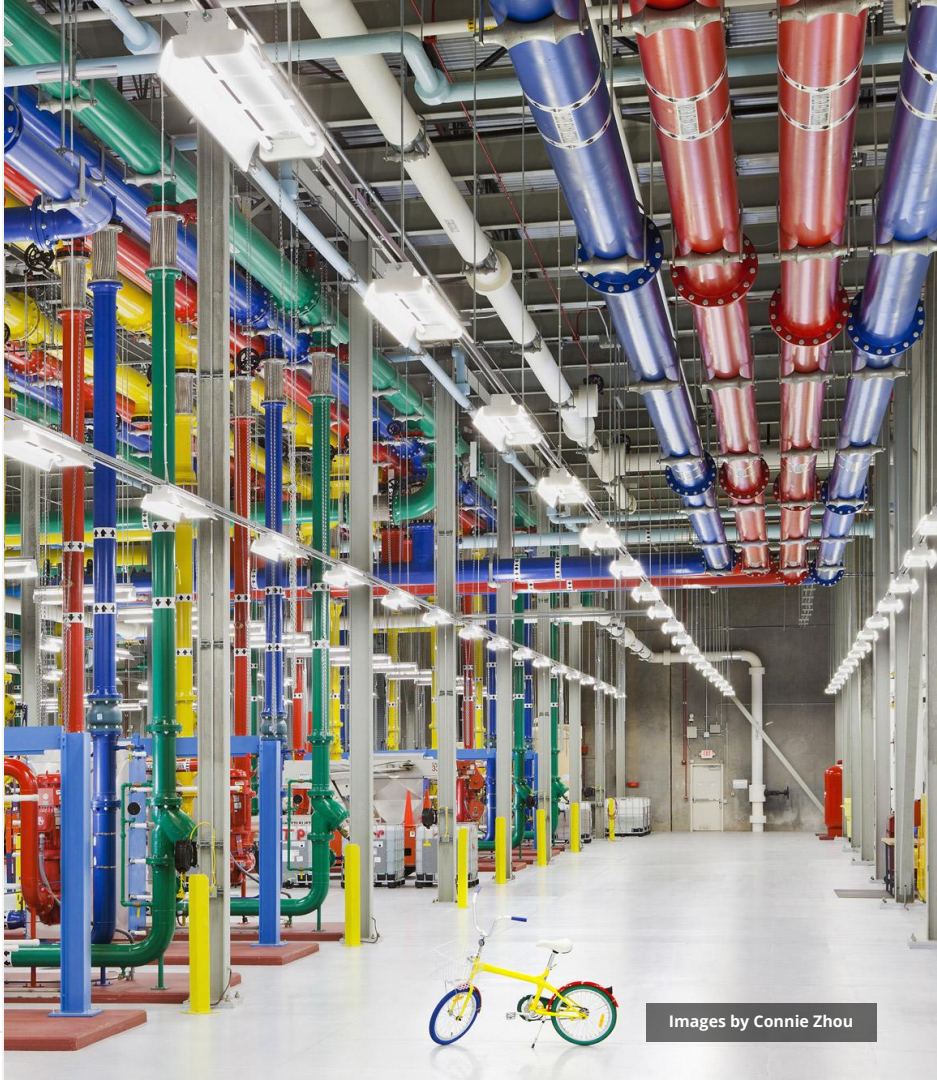
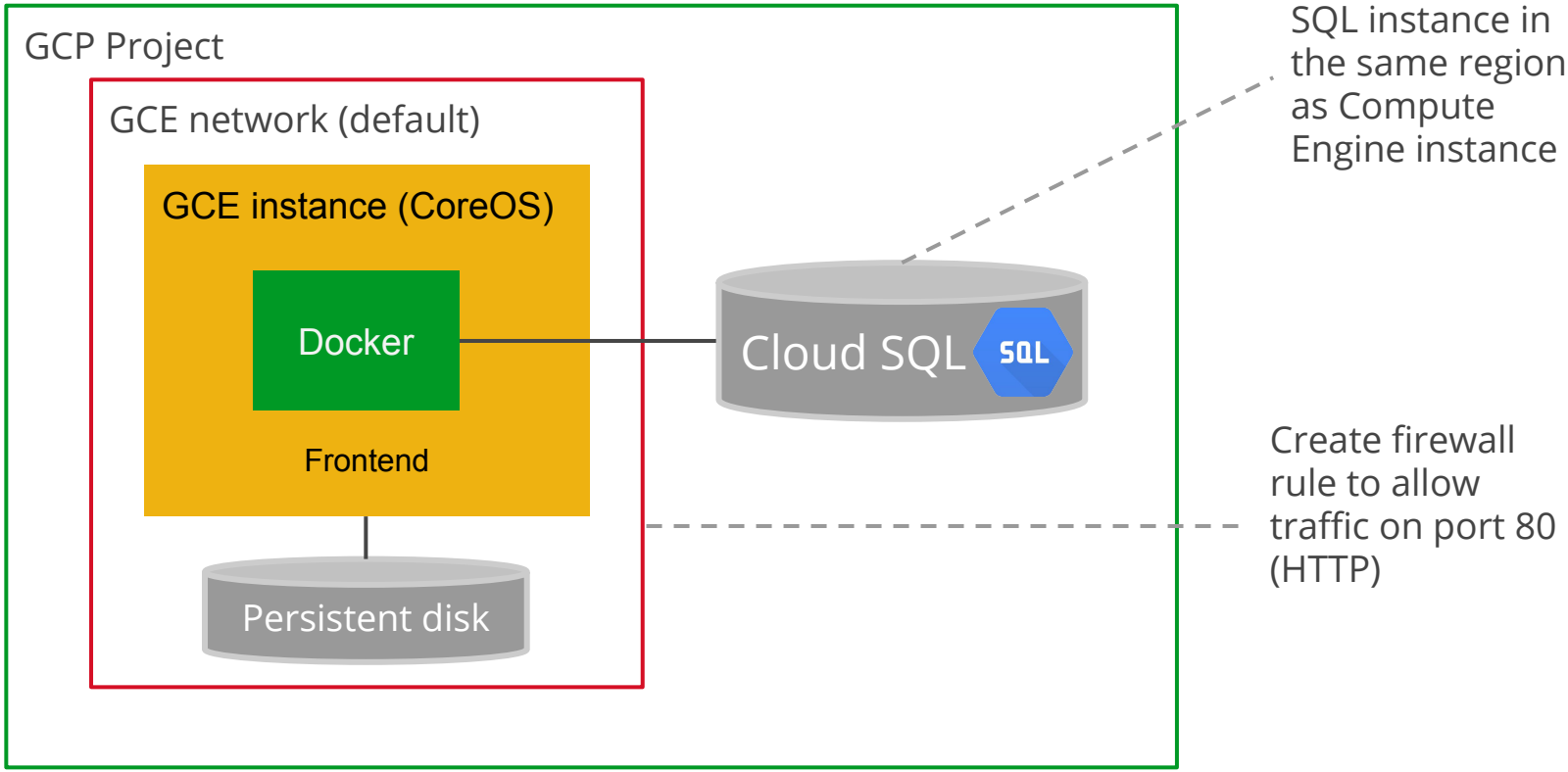
Lab (1 of 2)

Deploy the Guestbook application on Compute Engine and Cloud SQL.

1. Create a single Compute Engine instance
2. Create a Cloud SQL instance
3. Deploy a Python frontend that connects to your Cloud SQL instance
4. Finish by deleting both instances



Lab (2 of 2)



Resources

- Cloud SQL: features, case studies, pricing, & documentation
  https://cloud.google.com/sql/
- FAQ
  https://cloud.google.com/sql/faq
- Getting Started with Google Cloud SQL
  https://www.youtube.com/watch?v=_kQXgjIfLgo
- Getting Started
  https://cloud.google.com/sql/docs/getting-started


cloud.google.com
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