


Google Cloud SQL Instance

Google Developers Console

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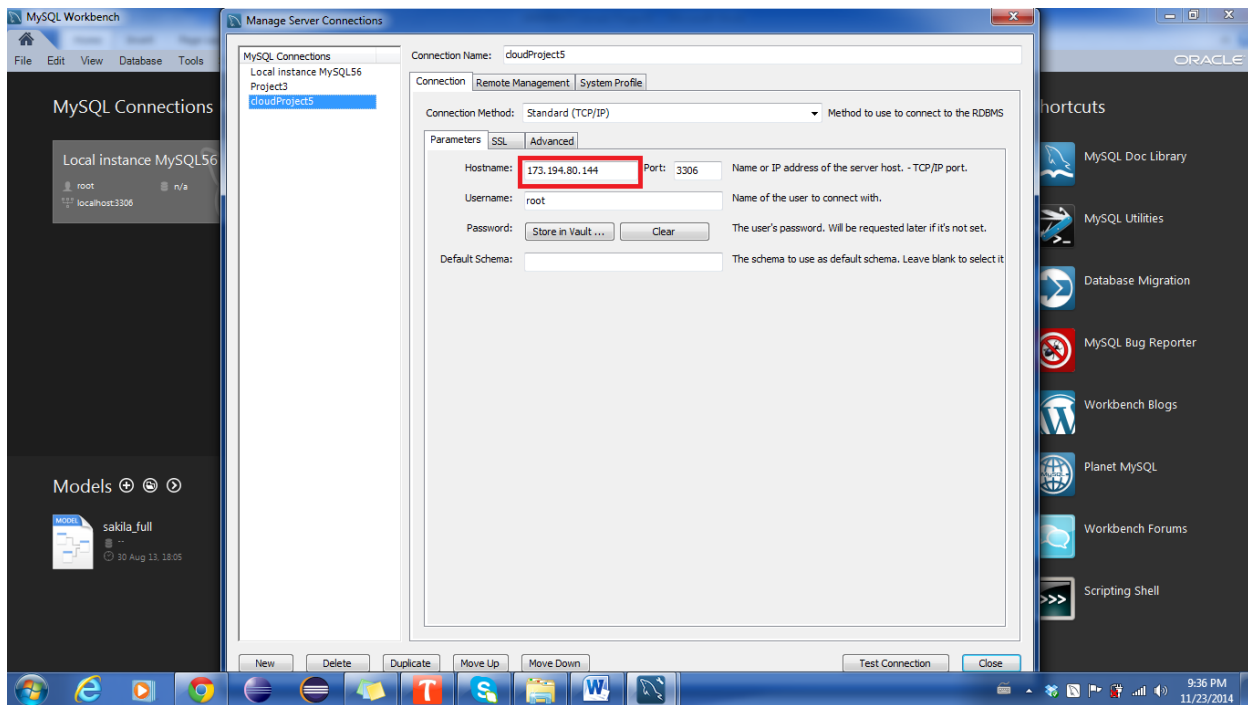
Source Code

Compute

New Instance

INSTANCE ID	TIER	IP ADDRESS	STORAGE USED	REGION	STATUS
gentle-edition-769-cloud-project5	D0 — 128 MB RAM	173.194.80.144	<div></div> 306.3 MB of 250 GB	United States	Runnable

Connection with my sql:



Time to measure upload and download 10K, 25K and 100K files:

```
Go to the following link in your browser: https://accounts.google.com/o/oauth2/auth?scope=https%3A%2F%2Fwww.googleapis.com%3Aauth%3Fdrive&redirect_uri=urn%3Aietf%3Awww.
Enter verification code: 4jHD0BHBkHwK8LrjDASp4-Tl6c25aX3K5ZikaV8HLFPo..upmdBUt0gP3a3hg-8bbjpl0u5hi_kv1
uploading 10K: 6.52584529003
downloading 10K: 1.08174852946
uploading 25K: 14.2396254764
downloading 25K: 1.5119149576
uploading 100K: 62.0730589413
downloading 100K: 4.62127732943
```

Create table queries:

```
CREATE TABLE cloud_project5.`Cloud_100K` (  
  `id` int(11) DEFAULT NULL,  
  `stationId` varchar(45) DEFAULT NULL,  
  `stationName` varchar(45) DEFAULT NULL,s  
  `date` varchar(45) DEFAULT NULL,  
  `AWND` varchar(45) DEFAULT NULL,  
  `TMAX` varchar(45) DEFAULT NULL,  
  `PRCP` varchar(45) DEFAULT NULL,  
  `TOBS` varchar(45) DEFAULT NULL,  
  `TMIN` varchar(45) DEFAULT NULL  
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```

Query for loading csv files into table:

```
LOAD DATA LOCAL INFILE 'D:\\books\\semester4\\Cloud_Computing\\Project5-GWE\\10K.csv'  
INTO TABLE cloud_project5.Cloud_10K FIELDS TERMINATED BY ',';
```

```
LOAD DATA LOCAL INFILE 'D:\\books\\semester4\\Cloud_Computing\\Project5-GWE\\25K.csv'  
INTO TABLE cloud_project5.Cloud_25K FIELDS TERMINATED BY ',';
```

```
LOAD DATA LOCAL INFILE 'D:\\books\\semester4\\Cloud_Computing\\Project5-GWE\\100K.csv'  
INTO TABLE cloud_project5.Cloud_100K FIELDS TERMINATED BY ',';
```

Inserting different size files into google cloud sql:

The screenshot shows the SQL Developer interface. The 'Query 1' window contains the following SQL statements:

```

1 LOAD DATA LOCAL INFILE 'D:\books\semester4\Cloud_Computing\Project5-GWE\10K.csv'
2 INTO TABLE cloud_project5.Cloud_10K FIELDS TERMINATED BY ',';
3
4 LOAD DATA LOCAL INFILE 'D:\books\semester4\Cloud_Computing\Project5-GWE\25K.csv'
5 INTO TABLE cloud_project5.Cloud_25K FIELDS TERMINATED BY ',';
6
7 LOAD DATA LOCAL INFILE 'D:\books\semester4\Cloud_Computing\Project5-GWE\100K.csv'
8 INTO TABLE cloud_project5.Cloud_100K FIELDS TERMINATED BY ',';
9

```

The 'Output' window shows the execution results:

Time	Action	Message	Duration / Fetch
20:37:15	LOAD DATA LOCAL INFILE 'D:\books\semester4\Cloud_Computing\Project5-GWE\10...	10000 row(s) affected Records: 10000 Deleted: 0 Skipped: 0 Warnings: 0	5.366 sec
20:37:21	LOAD DATA LOCAL INFILE 'D:\books\semester4\Cloud_Computing\Project5-GWE\25...	25000 row(s) affected Records: 25000 Deleted: 0 Skipped: 0 Warnings: 0	14.368 sec
20:37:35	LOAD DATA LOCAL INFILE 'D:\books\semester4\Cloud_Computing\Project5-GWE\10...	100000 row(s) affected Records: 100000 Deleted: 0 Skipped: 0 Warnings: 0	61.106 sec

Querying from different tables:

```
select stationId, count(stationId)
```

```
from cloud_project5.Cloud_10K C where TMAX > 161 group by stationId;
```

```
select stationId, count(stationId)
```

```
from cloud_project5.Cloud_25K C where TMAX > 161 group by stationId;
```

```
select stationId, count(stationId)
```

```
from cloud_project5.Cloud_100K C where TMAX > 161 group by stationId;
```

The screenshot shows the SQL Developer interface. The 'Query 1' window contains the following SQL statements:

```

1 select stationId, count(stationId)
2 from cloud_project5.Cloud_10K C where TMAX > 161 group by stationId;
3
4 select stationId, count(stationId)
5 from cloud_project5.Cloud_25K C where TMAX > 161 group by stationId;
6
7 select stationId, count(stationId)
8 from cloud_project5.Cloud_100K C where TMAX > 161 group by stationId;

```

The 'Output' window shows the results of the queries:

stationId	count(stationId)
AVALON CATALINA AIRPORT CA US	896
BEAUMONT CALIFORNIA CA US	733
BURBANK GLENDALE PASADENA AIRPORT CA US	1276

The 'Output' window also shows the execution results:

Time	Action	Message	Duration / Fetch
20:23:38	select stationId, count(stationId) from cloud_project5.Cloud_10K C where TMAX > 161 group...	2 row(s) returned	0.141 sec / 0.000 s
20:23:38	select stationId, count(stationId) from cloud_project5.Cloud_25K C where TMAX > 161 group...	8 row(s) returned	0.234 sec / 0.000 s
20:23:38	select stationId, count(stationId) from cloud_project5.Cloud_100K C where TMAX > 161 group...	32 row(s) returned	0.874 sec / 0.000 s

Operation	Time (seconds)		
	10K (0.75 MB)	25K (1.9 MB)	100K (8.1 MB)
Upload (Google Drive)	6.53	14.94	62.07
Download (Google Drive)	1.08	1.51	4.62
Insert into google cloud sql table	5.36	14.37	61.11
Querying from google cloud sql table	0.14	0.23	0.87

As you can see time increases for different options as file size increases.

Time is symmetric for uploading files into google drive and uploading it into google cloud sql because files that are being uploaded are of the same size and both the applications google drive and google sql are on same google server with same access speed. So if one is accessing that functionality from same network, uploading time to both the options will be nearly same.

Of course one can vary this time by changing the configuration of instance. If instead of 512 MB ram, one use 1 GB ram, then the time to upload will decrease but time will still be symmetric if configurations are same for google cloud sql and google cloud storage

References:

<https://developers.google.com/drive/web/quickstart/quickstart-python>

<https://developers.google.com/drive/web/manage-downloads>