Viewing information about your Cloud SQL instance

MySQL | PostgreSQL (https://cloud.google.com/sql/docs/postgres/instance-info) | SQL Server (https://cloud.google.com/sql/docs/sqlserver/instance-info)

This page discusses how to get information about your Cloud SQL instances, including instance summary information, usage data, operation logs, and database logs.

Viewing instance summary information

You can view summary information about your Cloud SQL instances in the Google Cloud Console (https://console.cloud.google.com/), or by using the `gcloud` command-line tool, or the API.

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1. Go to the Cloud SQL Instances page in the Google Cloud Console.
   GO TO THE CLOUD SQL INSTANCES PAGE (HTTPS://CONSOLE.CLOUD.GOOGLE.COM/SQL/INSTANC
2. Click an instance name to open its **Instance details** page.

To see how the underlying REST API request (https://cloud.google.com/sql/docs/mysql/admin-api/rest/v1beta4/instances/get) is constructed for this task, see the APIs Explorer on the instances:get page (https://cloud.google.com/sql/docs/mysql/admin-api/rest/v1beta4/instances/get).

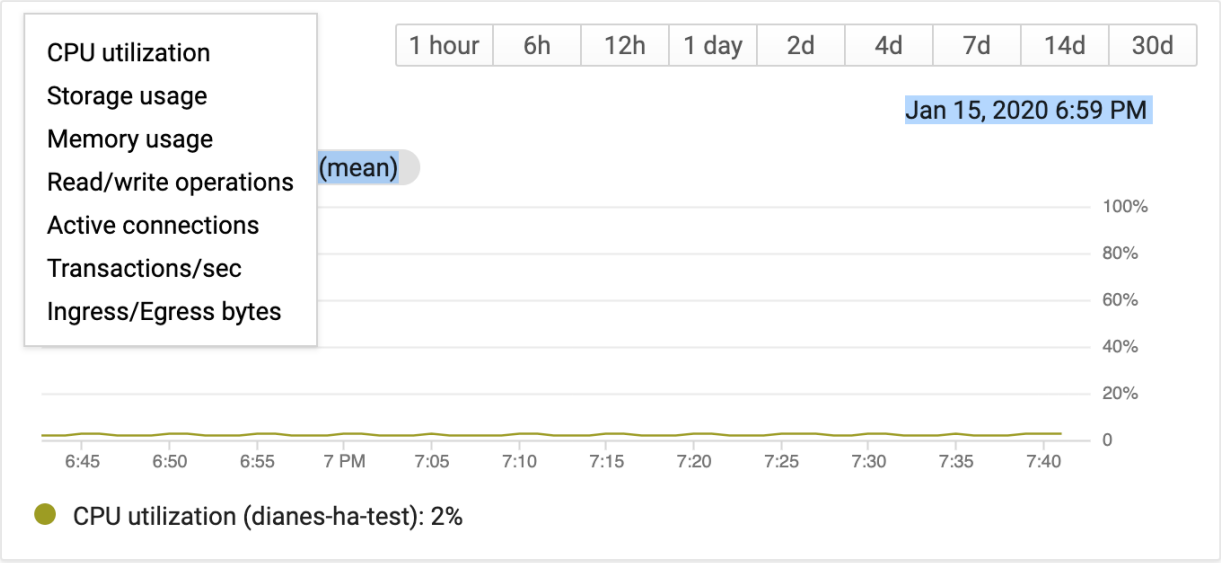
Viewing instance metrics in Cloud SQL

Cloud SQL provides usage charts of key instance metrics that you can use to monitor your instances. When working with metric data, keep the following facts in mind:

- A data point for a metric is an aggregate over all of the databases hosted by the instance.
- Data is reported in Coordinated Universal Time (UTC).
- Rendered charts do not refresh automatically; to see new data, you must refresh the page.
- There is a delay of a few minutes between when metric data is recorded and the time it is displayed in the usage charts.

To view instance usage information:

1. Go to the Cloud SQL Instances page in the Google Cloud Console.
   GO TO THE CLOUD SQL INSTANCES PAGE (HTTPS://CONSOLE.CLOUD.GOOGLE.COM/SQL/INSTANCE
2. Click an instance name to open its **Instance details** page.
3. In the metric selection box, select a metric to view its usage chart.



Comparing metrics from multiple instances

1. Go to the Cloud SQL Instances page in the Google Cloud Console.
   GO TO THE CLOUD SQL INSTANCES PAGE (HTTPS://CONSOLE.CLOUD.GOOGLE.COM/SQL/INSTANCE
2. Select up to 5 instances you want to compare by checking the checkbox to the left of the instance name.
3. In the **Info Panel** on the right, select the **Monitoring** tab.
4. Select the metric you want to compare from the metric dropdown.

You can see the exact data for a specific time by hovering over the graph.

Available metrics

The usage charts can help you respond proactively as your application needs change. From these metrics, you can gain insight into issues of throughput and latency as well as instance usage costs. The metrics you can see depend on whether your instance is a Second Generation or First Generation instance.

Note: Second Generation is replacing First Generation; support for First Generation instances ends January 30, 2020. To upgrade a First Generation instance to Second Generation, see Upgrading a First Generation Instance to Second Generation (https://cloud.google.com/sql/docs/mysql/upgrade-2nd-gen).

Metrics for Second Generation instances	Description
Storage usage (GB)	You can use the storage usage metric to help you understand your storage costs. For more information about storage usage charges, see Storage and Networking Pricing (https://cloud.google.com/sql/pricing#2nd-gen-storage-networking-prices) . Binary logs use storage space. Binary logs are automatically deleted with their associated automatic backup, which generally happens after about 7 days. You cannot manually delete binary logs, nor change the 7-day time period. If the size of your binary logs are causing an issue for your instance, you can increase your storage size, but the binary log size increase in binary might be temporary. You can disable and then reenable binary logging, which deletes binary logs. Note, however, that decreasing the storage used does not shrink the size of the storage provisioned for the instance. A newly created database uses several hundred MB for system tables and files.

Metrics for Second Generation instances	Description
CPU usage	You can use this metric to monitor whether your instance has sufficient CPU for your application's needs. If this value is running too high, you can increase the size of your machine type to give your instance more CPU capability.
Memory usage	The amount of memory being used by your instance.
Read/write operations	The Number of Reads metric is the number of read operations served from disk that do not come from cache. You can use this metric to help you understand whether your instance is correctly sized for your environment. If needed, you can move to a larger machine type to serve more requests from cache and reduce latency. The Number of Writes metric is the number of write operations to disk. Write activity is generated even if your application is not active, because Cloud SQL instances write to a system table approximately every second (except for replicas).
Active connections	Number of open connections to the Cloud SQL instance.
Ingress/Egress bytes (bytes/sec)	The amount of network traffic coming into or leaving the instance.
MySQL queries (queries/sec)	The number of statements executed by the server. To see what statements are measured as queries, see Server Status Variables (https://dev.mysql.com/doc/refman/5.7/en/server-status-variables.html#statvar_Queries) in the MySQL Reference Manual.
MySQL questions (questions/sec)	The number of statements executed by the server sent by clients. To see what statements are measured as questions, see Server Status Variables (https://dev.mysql.com/doc/refman/5.7/en/server-status-variables.html#statvar_Questions) in the MySQL Reference Manual.
Read/write InnoDB pages (pages/sec)	The number of InnoDB pages read and written. For more information, see InnoDB Startup Options and System Variables (https://dev.mysql.com/doc/refman/5.7/en/innodb-parameters.html) in the MySQL Reference Manual.

Metrics for Second Generation instances	Description
InnoDB data fsyncs (operations/sec)	The number of InnoDB fsync() calls. For more information, see InnoDB Startup Options and System Variables (https://dev.mysql.com/doc/refman/5.7/en/innodb-parameters.html) in the MySQL Reference Manual.
InnoDB log fsyncs (operations/sec)	The number of InnoDB fsync() calls to the log file. For more information, see InnoDB Startup Options and System Variables (https://dev.mysql.com/doc/refman/5.7/en/innodb-parameters.html) in the MySQL Reference Manual.

Metrics for First Generation instances	Description
Storage usage (GB)	You can use the storage usage metric to help you manage your storage costs. For example, for a package billing plan, Cloud SQL provides some storage for free for each tier after which storage usage incurs a charge. For both the per use plan and package billing plans, the maximum allowed storage for an instance is 500GB. For more information about storage usage charges, see Pricing (https://cloud.google.com/sql/pricing). A newly created database uses about 270 MB for system tables and InnoDB logs.
Read/write operations	The Number of Reads metrics is the number of read operations served from disk that do not come from cache. You can use this metric to help manage your instance costs. Cloud SQL caches data in memory to serve your queries efficiently and to minimize the number of I/O requests. For the package billing plan, each tier has a quota of free I/O operations. Use over the quota is charged. For the per use billing plan, Cloud SQL charges a flat rate for I/O operations. For both plans, you can increase the size (tier) of your instance to serve more requests from cache and reduce costs associated with I/O operations. The Number of Writes is the number of write operations to disk, also included as charged I/O operations.
Egress bytes (multiple of bytes/sec)	Use the Egress Bytes metric to help manage your instance costs due to external, outbound traffic. Different chart lines show egress bytes destination, for example, "Compute Engine", "App Engine", or "External".

Metrics for First Generation instances	Description
Active connections	Number of open connections to the Cloud SQL instance.
MySQL queries (queries/sec)	The number of statements executed by the server. To see what statements are measured as queries, see Server Status Variables (https://dev.mysql.com/doc/refman/5.7/en/server-status-variables.html#statvar_Queries) in the MySQL Reference Manual.
MySQL questions (questions/sec)	The number of statements executed by the server sent by clients. To see what statements are measured as questions, see Server Status Variables (https://dev.mysql.com/doc/refman/5.7/en/server-status-variables.html#statvar_Questions) in the MySQL Reference Manual.
Read/write InnoDB pages (pages/sec)	The number of InnoDB pages read and written. For more information, see InnoDB Startup Options and System Variables (https://dev.mysql.com/doc/refman/5.7/en/innodb-parameters.html) in the MySQL Reference Manual.
InnoDB data fsyncs (operations/sec)	The number of InnoDB fsync() calls. For more information, see InnoDB Startup Options and System Variables (https://dev.mysql.com/doc/refman/5.7/en/innodb-parameters.html) in the MySQL Reference Manual.
InnoDB log fsyncs (operations/sec)	The number of InnoDB fsync() calls to the log file. For more information, see InnoDB Startup Options and System Variables (https://dev.mysql.com/doc/refman/5.7/en/innodb-parameters.html) in the MySQL Reference Manual.

Figure 1 points out the different parts of a usage chart.

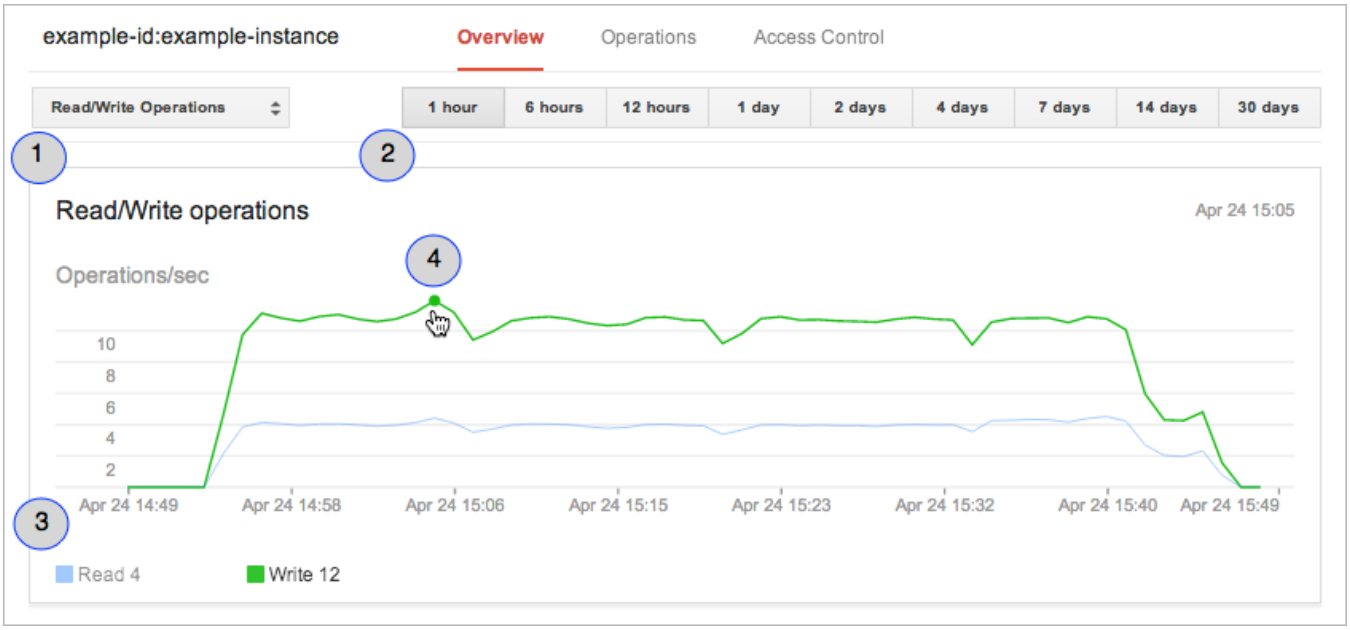


Figure 1: Example instance usage data

where

- **Callout 1:** The metric data displayed in the chart.
- **Callout 2:** The time range for which to view the metric data.
- **Callout 3:** The value of the metric at the cursor.
- **Callout 4:** The data cursor. Use the cursor to find the value of a metric at a specific time.

Viewing instance usage data using Stackdriver

If you need a metric not shown in the Instance details page, or more flexibility with your data format or display options, you can use Stackdriver to get information about your Cloud SQL instance.

For a complete list of Cloud SQL metrics provided by Stackdriver, see the Cloud SQL metrics list (https://cloud.google.com/monitoring/api/metrics_gcp#gcp-cloudsql). For more information about using Stackdriver with Google Cloud, see the Stackdriver Monitoring documentation (https://cloud.google.com/monitoring/docs).

Viewing instance operations log

You can view the logs for an instance in the **Operations** pane. The **Operations** pane logs every operation performed on the instance with the following information:

- The time the operation completed, reported in your local time zone.
- The type of operation.
- The status of the operation.
- A message describing the outcome the operation.

If the operation fails, you can use the message to troubleshoot the problem.

To view an instance operations log:

1. Go to the Cloud SQL Instances page in the Google Cloud Console.
   GO TO THE CLOUD SQL INSTANCES PAGE (HTTPS://CONSOLE.CLOUD.GOOGLE.COM/SQL/INSTANCE
2. Click an instance name to open its **Instance details** page.
3. Click **Operations** to change to the pane showing the operation log.

Note: The operations log does not include operations performed using external management tools, such as the mysql client. Only user management and password change operations performed using the Google Cloud Console, `gcloud` command-line tool, or the Cloud SQL API appear in the operations log.

Viewing log files

You can use the Logs Viewer in the Google Cloud Console to view error and log files.

1. Go to the Logs Viewer in the Google Cloud Console.
   GO TO THE LOGS VIEWER (HTTPS://CONSOLE.CLOUD.GOOGLE.COM/LOGS?RESOURCE=CLOUDSQL
2. Select the logs you want to see.
   You can filter based on:
   - Instance
   - Log file
   - Log level
   - Date

For more information about selecting and filtering logs, see Viewing Logs (https://cloud.google.com/logging/docs/view/logs_viewer). For information about exporting logs, see Exporting Logs (https://cloud.google.com/logging/docs/export/configure_export).

What's next

- Learn more about Stackdriver metrics for Cloud SQL (https://cloud.google.com/monitoring/api/metrics_gcp#gcp-cloudsql).
- Learn more about instance settings (https://cloud.google.com/sql/docs/mysql/instance-settings).
- See how to edit an instance (https://cloud.google.com/sql/docs/mysql/edit-instance).
- Learn about IAM for Cloud SQL (https://cloud.google.com/sql/docs/project-access-control).
- Learn more about the machine types available for Second Generation instances (https://cloud.google.com/sql/pricing#2nd-gen-instance-pricing).
- Learn more about the tiers available for First Generation instances (https://cloud.google.com/sql/pricing#packages).

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