MySQL (/sql/docs/mysql/instance-settings) | **PostgreSQL** | SQL Server
(/sql/docs/sqlserver/instance-settings)

This page provides information about the settings available for Cloud SQL instances.

Setting	Modifiable after creation?	Possible values
Instance ID (#instance-id-2ndgen)	N	Composed of lowercase letters, numbers, and hyphens; must start with a letter.
Region (#region-2ndgen)	N	**asia-east1** — Taiwan **asia-east2** — Hong Kong **asia-northeast1** — Tokyo **asia-northeast2** — Osaka **asia-northeast3** — Seoul **asia-south1** — Mumbai **asia-southeast1** — Singapore **australia-southeast1** — Sydney **europe-north1** — Finland **europe-west1** — Belgium **europe-west2** — London **europe-west3** — Frankfurt **europe-west4** — Netherlands **europe-west6** - Zürich **northamerica-northeast1** — Montréal **southamerica-east1** — São Paulo **us-central1** — Iowa **us-east1** — South Carolina **us-east4** — Northern Virginia **us-west1** — Oregon **us-west2** — Los Angeles
Zone (#zone-2ndgen)	Y	The possible values depend on the region.
Database version	N	**PostgreSQL 11 (default)** **PostgreSQL 9.6**

(#database-version-2ndgen)		
Private IP (#private-ip)	After it is configured, it cannot be disabled.	Configured or not.
Public IP (#public-ip)	Y	Enabled or disabled.
Authorized networks (#authorized-networks-2ndgen)	Y	If Public IP is enabled, IP addresses authorized to connect to the instance. You can also specify this value as an IP address range, in CIDR notation (http://en.wikipedia.org/wiki/Classless_Inter-Domain_Routing#CIDR_notation) .
Cores (#cpus-postgres)	Y	1 to 64 (must be either 1 or an even number) Partial for shared vCPU
Memory (#memory-postgres)	Y	0.9 to 6.5 GiB per vCPU (must be a multiple of 256 MiB and at least 3.75 GiB)
Storage type (#storage-type-2ndgen)	N	**SSD** (default value) **HDD**
Storage capacity (#storage-capacity-2ndgen)	Y (Increase only)	Instances with at least one (unshared) vCPU can have up to 30,720 GB. Instances with a shared vCPU can have up to 3062 GB.
Automatic storage increase (#automatic-storage-increase-2ndgen)	Y	**On** (default value) **Off**
Automatic storage increase limit (#automatic-storage-increase-limit-2ndgen)	Y	In GiBs. 0 (the default) means there is no limit.
Backups (#backups-postgres)	Y	**On** (default value) **Off**
Maintenance window (#maintenance-window-2ndgen)	Y	Day of the week, and hour.

Maintenance timing (#maintenance-timing-2ndgen)	Y	**Any** (default value) **Later** **Earlier**
Activation policy (#activation-policy-2ndgen)	Y	**ALWAYS** **NEVER**
Database flags (#mysql-flags-2ndgen)	Y	See Configuring Database Flags (/sql/docs/postgres/flags).

Instance ID

The instance ID is the name of the instance. It is used to uniquely identify your instance within the
project. Choose an instance name that is aligned with the purpose of the instance when possible.

The total length of `project-ID:instance-ID` must be 98 characters or less.

You do not need to include the project ID in the instance name. This is done automatically where
appropriate (for example, in the log files).

You cannot reuse an instance name for up to a week after you have deleted the instance.

Region

The Google Cloud Platform region where your instance is located. To improve performance, keep your
data close to the services that need it. For more information, see Instance Locations
(/sql/docs/postgres/instance-locations).

Zone

The Google Cloud Platform zone where your instance is located. If you are connecting from a Compute Engine instance, select the zone where the Compute Engine instance is located. Otherwise, you should accept the default zone. For more information, see Instance Locations (/sql/docs/postgres/instance-locations).

Cores

The number of CPUs for your instance. You can also choose to create an instance with less than one CPU (a shared code instance, or shared vCPU).

For some sample core and memory combinations, see Sample machine types (/sql/docs/postgres/create-instance#machine-types).

Memory

The amount of memory available for your instance. For performance-sensitive workloads such as online transaction processing (OLTP), a general rule of thumb is to make sure that your instance has enough memory to contain the entire working set. However, there are other factors that can impact memory requirements, such as number of active connections. You should perform load testing to avoid performance issues in production.

For some sample core and memory combinations, see Sample machine types (/sql/docs/postgres/create-instance#machine-types).

Database version

Unless you need a capability provided only by a specific version, you should accept the default database version.

Storage type

Choosing **SSD**, the default value, provides your instance with SSD storage. SSDs provide lower latency and higher data throughput. If you do not need high-performance access to your data, for example for long-term storage or rarely accessed data, you can reduce your costs by choosing **HDD**.

Storage capacity

Choose a capacity to fit your database size. After you have created your instance, you can increase your storage capacity, but you cannot decrease it. The amount of storage capacity allocated for your instance affects the cost of your instance.

Automatic storage increase

If you enable this setting, Cloud SQL checks your available storage every 30 seconds. If the available storage falls below a threshold size, Cloud SQL automatically adds additional storage capacity. If the available storage repeatedly falls below the threshold size, Cloud SQL continues to add storage until it reaches the maximum of 30 TB.

★ **Note:** You can increase storage size, but you cannot decrease it; the storage increases are permanent for the life of the instance. When you enable this setting, a spike in storage requirements can permanently increase storage costs (incrementally) for your instance. If an instance runs out of available space, it can cause the instance to go offline, and the Cloud SQL SLA (/sql/sla) might not cover the outage.

The threshold size depends on the amount of storage currently provisioned for your instance; it cannot be larger than 25 GB.

For instances provisioned with 500 GB of storage (or more), the threshold is always 25 GB.

For instances provisioned with less than 500 GB of storage, this formula is used to calculate the threshold:

The result of the division is rounded down to the nearest whole number.

Threshold calculation for an instance with 66 GB storage capacity:

Threshold calculation for an instance with 1000 GB storage capacity:

The amount of storage added to the instance is equal to the threshold size.

Automatic storage increase limit

If you enable the automatic storage increase setting (#automatic-storage-increase-2ndgen), you can provide a specific limit on how large the storage for your instance can automatically grow. You cannot decrease storage size, so this limit can prevent your instance size from growing unnecessarily large (due to a temporary increase in traffic). Keep in mind that when an instance becomes unable to add storage that it needs, the instance likely will stop accepting incoming connections and could go offline.

Setting this limit to zero, the default value, means that there is no limit (other than the maximum available storage for the instance tier).

Backups

This setting determines whether automated backups are performed.

Maintenance window

The day and hour when disruptive updates (updates that require an instance restart) to this Cloud SQL instance can be made. If the maintenance window is set for an instance, Cloud SQL does not initiate a disruptive update to that instance outside of the window. The update is not guaranteed to complete before the end of the maintenance window, but restarts typically complete within a couple of minutes.

★ **Note:** Disruptive updates can happen at any time, whether you specify a maintenance window or not, although they generally only occur every few months.

Read replicas do not support the maintenance window setting; they can experience a disruptive upgrade at any time.

Failover events do not occur during a maintenance window.

Maintenance timing

This setting lets you provide a preference about the relative timing of instance updates that require a restart. Receiving updates earlier lets you test your application with an update before your instances that get the update later.

The relative timing of updates is not observed between projects; if you have instances with an earlier timing setting in a different project than your instances with a later timing setting, Cloud SQL makes no attempt to update the instances with the earlier timing setting first.

If you do not set the Maintenance timing setting, Cloud SQL chooses the timing of updates to your instance (within its Maintenance window, if applicable).

The Maintenance timing setting does not affect the software version Cloud SQL applies to your instance.

Private IP

Configures your instance to use private IP. Learn more (/sql/docs/postgres/private-ip).

Public IP

If enabled, your instance is allocated a public IPv4 address. When you disable Public IP, that address is released; you can reenable Public IP later, but you will receive a different IPv4 address. By default, the public IP address is blocked for all addresses. Use Authorized networks (#authorized-networks-2ndgen) to enable access.

Authorized networks

You can add specific IP addresses or ranges of addresses to open your instance to those addresses. For information about configuring IP addresses, see Configuring IP connectivity (/sql/docs/postgres/configure-ip).

Activation policy

You change the activation policy by starting and stopping the instance (/sql/docs/postgres/start-stop-restart-instance). Stopping the instance prevents further instance charges.

Database flags

You can set specific database flags on the Cloud SQL instance.

For a complete list of the database flags you can set, see Configuring Database Flags (/sql/docs/postgres/flags).

For most instance settings, Cloud SQL applies the change immediately and connectivity to the instance is unaffected.

Changing the number of CPUs, memory size, or the zone of the instance results in the instance going offline for several minutes. You should plan to make these kind of changes when your application can handle an outage of this length.

- Learn how to edit your instance (/sql/docs/postgres/edit-instance).

- Learn more about database flags (/sql/docs/postgres/flags).

- Learn how to authorize IP access for your instance (/sql/docs/postgres/configure-ip).

- Learn more about <u>replication options</u> (/sql/docs/replication/).

- See <u>pricing</u> (/sql/docs/postgres/pricing) for your instance.

- Learn more about <u>options for connecting to your instance</u> (/sql/docs/postgres/external-connection-methods).

- Learn how to <u>configure an IP address for your instance</u> (/sql/docs/postgres/connect-external-app#appaccessIP).