Storage options

Compute Engine offers several types of storage options for your instances. Each of the following storage options has unique price and performance characteristics:

- Zonal persistent disk (#zonal-pds): Efficient, reliable block storage.
- Regional persistent disk (#repds): Regional block storage replicated in two zones.
- Local SSD (#localssds): High performance, transient, local block storage.
- Cloud Storage buckets (#gcsbuckets): Affordable object storage.
- Filestore (/filestore/docs/mounting-fileshares): High performance file storage for Google Cloud users.

If you are not sure which option to use, the most common solution is to add a persistent disk (/compute/docs/disks/add-persistent-disk) to your instance.

Introduction

By default, each Compute Engine instance has a single boot persistent disk (PD) that contains the operating system. When your apps require additional storage space, you can add one or more additional storage options to your instance. For cost comparisons, see disk pricing (/compute/disks-image-pricing#disk).

	Zonal extreme PD	**Local SSDs**	**Cloud Storage buckets**
›ck storage ‹plication a region	Highest performance persistent block storage option	High performance local block storage	Affordable object storage
	500 GB	375 GB	n/a

	Zonal extreme PD	Local SSDs	Cloud Storage buckets
	64 TB	375 GB	n/a
	1 GB	Depends on the machine type** (#fn-logical2)	n/a
1)	257 TB* (#fn-logical1)	9 TB	Almost infinite
	Zone	Instance	Global
	Zonal	None	Regional, dual-regional or multi-regional
	Yes	Yes	Yes
	Yes	No	Yes
persistent	Add an extreme persistent disk	Add a local SSD	Connect a bucket
sks/regional-	(/compute/docs/disks/add-persistent-disk#create_disk)	(/compute/docs/disks/add-local-ssd#create_local_ssd)	(/compute/docs/disks#gcsbuckets)

* If you are considering creating a logical volume larger than 64 TB, see logical volume size (/compute/docs/disks/performance#logical_volume_size) to know how a larger volume size impacts performance.

** The capacity increment for local SSDs depends on the number of SSD disks (partitions) allowed per VM, which varies for each machine type. For more information, see Local SSDs and machine types (#local_ssd_machine_type_restrictions).

In addition to the storage options that Google Cloud provides, you can deploy alternative storage solutions on your instances.

- Create a file server or distributed file system (/solutions/filers-on-compute-engine) on Compute Engine to use as a network file system with NFSv3 and SMB3 capabilities.
- Mount a RAM disk (/compute/docs/disks/mount-ram-disks) within instance memory to create a block storage volume with high throughput and low latency.

Block storage resources have different performance characteristics. Consider your storage size and performance requirements to help you determine the correct block storage type for your instances.

- For information about persistent disk performance limits, see Performance limits (/compute/docs/disks/performance#performance_limits).
- For information about local SSD performance limits, see Local SSD performance (#local-ssd-performance).

Persistent disks created in multi-writer mode have specific IOPS and throughput limits. See performance of persistent disks in multi-writer mode (/compute/docs/disks/sharing-disks-between-vms#performance) for details.

Persistent disks

Persistent disks are durable network storage devices that your instances can access like physical disks in a desktop or a server. The data on each persistent disk is distributed across several physical disks. Compute Engine manages the physical disks and the data distribution for you to ensure redundancy and optimal performance.

Persistent disks are located independently from your virtual machine (VM) instances, so you can detach or move persistent disks to keep your data even after you delete your instances. Persistent disk performance scales automatically with size, so you can resize your existing persistent disks or add more persistent disks to an instance to meet your performance and storage space requirements.

Add a persistent disk to your instance (/compute/docs/disks/add-persistent-disk#create_disk) when you need reliable and affordable storage with consistent performance characteristics.

Add a persistent disk to your instance (/compute/docs/disks/add-persistent-disk#create_disk)

Disk types

When you configure a persistent disk, you can select one of the following disk types.

- **Standard persistent disks** (`pd-standard`) are backed by standard hard disk drives (HDD) (https://en.wikipedia.org/wiki/Hard_disk_drive).
- **Balanced persistent disks** (`pd-balanced`) are backed by solid-state drives (SSD) (https://en.wikipedia.org/wiki/Solid-state_drive). They are an alternative to SSD persistent disks that balance performance and cost.
- **SSD persistent disks** (`pd-ssd`) are backed by solid-state drives (SSD) (https://en.wikipedia.org/wiki/Solid-state_drive).
- **Extreme persistent disks** (`pd-extreme`) are backed by solid-state drives (SSD) (https://en.wikipedia.org/wiki/Solid-state_drive). With consistently high performance for both random access workloads and bulk throughput, extreme persistent disks are designed for high-end database workloads. Unlike other disk types, you can provision your desired IOPS. For more information, see Extreme persistent disks (/compute/docs/disks/extreme-persistent-disk).

If you create a disk in the Google Cloud console, the default disk type is `pd-balanced`. If you create a disk using the gcloud CLI or the Compute Engine API, the default disk type is `pd-standard`.

The following table shows disk type and machine type support for **zonal** persistent disks.

Disk type	Supported machine types
`pd-standard`	All machine types
`pd-balanced`	All machine types
`pd-ssd`	All machine types
`pd-extreme`	n2-standard with 64 or more vCPUs, n2-highmem-64, n2-highmem-80, m1-megamem-96, m2-ultramem-208, m2-ultramem-416

The following table shows disk type and machine type support for **regional** persistent disks:

Disk type	Supported machine types

`pd-standard`	N1, N2, N2D, E2
`pd-balanced`	N1, N2, N2D, E2
`pd-ssd`	N1, N2, N2D, E2

Durability

Disk durability represents the probability of data loss, by design, for a typical disk in a typical year, using a set of assumptions about hardware failures, the likelihood of catastrophic events, isolation practices and engineering processes in Google data centers, and the internal encodings used by each disk type. Persistent disk data loss events are extremely rare and have historically been the result of coordinated hardware failures, software bugs, or a combination of the two. Google also takes many steps to mitigate the industry-wide risk of silent data corruption (https://support.google.com/cloud/answer/10759085). Human error by a Google Cloud customer, such as when a customer accidentally deletes a disk, is outside the scope of persistent disk durability.

There is a very small risk of data loss occurring with a regional persistent disk due to its internal data encodings and replication. Regional persistent disks provide twice as many replicas as zonal persistent disks, with their replicas distributed between two zones in the same region, so they provide high availability (/compute/docs/disks/high-availability-regional-persistent-disk) and can be used for disaster recovery if an entire data center is lost and cannot be recovered (although that has never happened). The additional replicas in a second zone can be accessed immediately if a primary zone becomes unavailable during a long outage.

Note that durability is in the aggregate for each disk type, and does not represent a financially-backed service level agreement (SLA).

The table below shows durability for each disk type's design. 99.999% durability means that with 1,000 disks, you would likely go a hundred years without losing a single one.

Zonal standard persistent disk	Zonal balanced persistent disk	Zonal SSD persistent disk	Zonal extreme persistent disk	Regional standard persistent disk	Regional balanced persistent disk	Regional SSD persistent disk
Better than 99.99%	Better than 99.999%	Better than 99.999%	Better than 99.9999%	Better than 99.999%	Better than 99.9999%	Better than 99.9999%

Zonal persistent disks

Ease of use

Compute Engine handles most disk management tasks for you so that you do not need to deal with partitioning, redundant disk arrays, or subvolume management. Generally, you don't need to create larger logical volumes, but you can extend your secondary attached persistent disk capacity to 257 TB per instance and apply these practices to your persistent disks if you want. You can save time and get the best performance if you format your persistent disks (/compute/docs/disks/add-persistent-disk#formatting) with a single file system and no partition tables.

If you need to separate your data into multiple unique volumes, create additional disks (/compute/docs/disks/add-persistent-disk#create_disk) rather than dividing your existing disks into multiple partitions.

When you require additional space on your persistent disks, resize your disks (/compute/docs/disks/resize-persistent-disk) rather than repartitioning and formatting.

Performance

Persistent disk performance is predictable and scales linearly with provisioned capacity until the limits for an instance's provisioned vCPUs are reached. For more information about performance scaling limits and optimization, see Configure disks to meet performance requirements (/compute/docs/disks/performance).

Standard persistent disks are efficient and economical for handling sequential read/write operations, but they aren't optimized to handle high rates of random input/output operations per second (IOPS). If your apps require high rates of random IOPS, use SSD or extreme persistent disks. SSD persistent disks are designed for single-digit millisecond latencies. Observed latency is application specific.

Compute Engine optimizes performance and scaling on persistent disks automatically. You don't need to stripe multiple disks together or pre-warm disks to get the best performance. When you need more disk space or better performance, resize your disks (/compute/docs/disks/resize-persistent-disk) and possibly add more vCPUs to add more storage space, throughput, and IOPS. Persistent disk performance is based on the total persistent disk capacity attached to an instance and the number of vCPUs that the instance has.

For boot devices, you can reduce costs by using a standard persistent disk. Small, 10 GB persistent disks can work for basic boot and package management use cases. However, to ensure consistent performance for more general use of the boot device, use a balanced persistent disk as your boot disk.

Each persistent disk write operation contributes to the cumulative network egress traffic for your instance. This means that persistent disk write operations are capped by the network egress cap (/compute/docs/disks/performance#performance_factors) for your instance.

Reliability

Persistent disks have built-in redundancy to protect your data against equipment failure and to ensure data availability through datacenter maintenance events. Checksums are calculated for all persistent disk operations, so we can ensure that what you read is what you wrote.

Additionally, you can create snapshots of persistent disks (/compute/docs/disks/create-snapshots) to protect against data loss due to user error. Snapshots are incremental, and take only minutes to create even if you snapshot disks that are attached to running instances.

Multi-writer mode

Preview

This feature is covered by the Pre-GA Offerings Terms (/terms/service-terms#1) of the Google Cloud Terms of Service. Pre-GA features might have limited support, and changes to pre-GA features might not be compatible with other pre-GA versions. For more information, see the launch stage descriptions (/products#product-launch-stages).

You can attach an SSD persistent disk in multi-writer mode to up to two N2 VMs simultaneously so that both VMs can read and write to the disk. Persistent disks in multi-writer mode provide a shared block storage capability and present an infrastructural foundation for building distributed Network File System (NFS) and similar highly available services. However, persistent disks with multi-writer mode require specialized file systems such as GlusterFS or GFS2. Many file systems such as EXT4, XFS, and NTFS are not designed to be used with shared block storage. For more information about the best practices when sharing persistent disks between VMs, see Best practices (/compute/docs/disks/sharing-disks-between-vms#best-practices-pd). If you require a fully managed

file storage, you can mount a Filestore file share on your Compute Engine VMs (/filestore/docs/mounting-fileshares).

To enable multi-writer mode for new persistent disks, create a new persistent disk and specify the `--multi-writer` flag in the gcloud CLI or the `multiWriter` property in the Compute Engine API. For more information, see Share persistent disks between VMs (/compute/docs/disks/sharing-disks-between-vms).

Persistent disk encryption

Compute Engine automatically encrypts your data before it travels outside of your instance to persistent disk storage space. Each persistent disk remains encrypted either with system-defined keys or with customer-supplied keys (/compute/docs/disks/customer-supplied-encryption). Google distributes persistent disk data across multiple physical disks in a manner that users do not control.

When you delete a persistent disk, Google discards the cipher keys, rendering the data irretrievable. This process is irreversible.

If you want to control the encryption keys that are used to encrypt your data, create your disks with your own encryption keys (/compute/docs/disks/customer-supplied-encryption).

Restrictions

- You cannot attach a persistent disk to an instance in another project.
- You can attach a balanced persistent disk to at most 10 VM instances in read-only mode.
- For custom machine types (/compute/docs/general-purpose-machines#custom_machine_types) or predefined machine types with a minimum of 1 vCPU, you can attach up to 128 persistent disks.
- Each persistent disk can be up to 64 TB in size, so there is no need to manage arrays of disks to create large logical volumes. Each instance can attach only a limited amount of total persistent disk space and a limited number of individual persistent disks. Predefined machine types and custom machine types have the same persistent disk limits.
- Most instances can have up to 128 persistent disks and up to 257 TB of total persistent disk space attached. Total persistent disk space for an instance includes the size of the

boot persistent disk.

- Shared-core machine types (/compute/docs/general-purpose-machines#sharedcore) are limited to 16 persistent disks and 3 TB of total persistent disk space.
- Creating logical volumes larger than 64 TB might require special consideration. For more information about larger logical volume performance see logical volume size (/compute/docs/disks/performance#logical_volume_size).

Note: If you created an instance before March 30, 2016, it might retain an earlier 10 TB limit for total persistent disk space. Recreate those instances to enable the current limits.

Regional persistent disks

Regional persistent disks have storage qualities that are similar to zonal persistent disks. However, regional persistent disks provide durable storage and replication of data between two zones in the same region.

If you are designing robust systems (/compute/docs/tutorials/robustsystems) or high availability services (/compute/docs/disks/high-availability-regional-persistent-disk) on Compute Engine, use regional persistent disks combined with other best practices such as backing up your data using snapshots (/compute/docs/disks/create-snapshots). Regional persistent disks are also designed to work with regional managed instance groups (/compute/docs/instance-groups/distributing-instances-with-regional-instance-groups).

In the unlikely event of a zonal outage, you can usually failover your workload running on regional persistent disks to another zone by using the `--force-attach` (/sdk/gcloud/reference/compute/instances/attach-disk#--force-attach) flag. The `--force-attach` flag lets you attach the regional persistent disk to a standby VM instance even if the disk can't be detached from the original VM due to its unavailability. To learn more, see Regional persistent disk failover (/compute/docs/disks/repd-failover). You cannot force attach a zonal persistent disk to an instance.

Performance

Regional persistent disks are designed for workloads that require a lower Recovery Point Objective (RPO) (https://wikipedia.org/wiki/Disaster_recovery#Recovery_Point_Objective) and Recovery Time Objective (RTO)

(https://wikipedia.org/wiki/Disaster_recovery#Recovery_Time_Objective) compared to using persistent disk snapshots.

Regional persistent disks are an option when write performance is less critical than data redundancy across multiple zones.

Like zonal persistent disks, regional persistent disks can achieve greater IOPS and throughput performance on instances with a greater number of vCPUs. For more information about this and other limitations, see Configure disks to meet performance requirements (/compute/docs/disks/performance).

When you need more disk space or better performance, you can resize your regional disks (/compute/docs/disks/regional-persistent-disk#resize_repd) to add more storage space, throughput, and IOPS.

Reliability

Compute Engine replicates data of your regional persistent disk to the zones you selected when you created your disks. The data of each replica is spread across multiple physical machines within the zone to ensure redundancy.

Similar to zonal persistent disks, you can create snapshots of persistent disks (/compute/docs/disks/create-snapshots) to protect against data loss due to user error. Snapshots are incremental, and take only minutes to create even if you snapshot disks that are attached to running instances.

Restrictions

- You can't use a regional persistent disk with a memory-optimized (https://cloud.google.com/compute/docs/memory-optimized-machines), compute-optimized (https://cloud.google.com/compute/docs/compute-optimized-machines), or accelerator-optimized (https://cloud.google.com/compute/docs/accelerator-optimized-machines) machine type VM.
- You cannot use regional persistent disks as boot disks.
- You can attach a regional balanced persistent disk to at most 10 VM instances in read-only mode.
- You can create a regional persistent disk from a snapshot but not an image.

- The minimum size of a regional standard persistent disk is 200 GB.
- When resizing a regional persistent disk, you can only increase its size.
- Regional persistent disks perform differently from zonal persistent disks. For more information, see Block storage performance (https://cloud.google.com/compute/docs/disks/performance).

Local SSDs

Local SSDs are physically attached to the server that hosts your VM instance. Local SSDs have higher throughput and lower latency than standard persistent disks or SSD persistent disks. The data that you store on a local SSD persists only until the instance is stopped or deleted. Each local SSD is 375 GB in size, but you can attach a maximum of 24 local SSD partitions for a total of 9 TB per instance.

Warning: The performance gains from local SSDs require certain trade-offs in availability, durability, and flexibility. Because of these trade-offs, Local SSD storage isn't automatically replicated and **all data on the local SSD might be lost** if the instance terminates for any reason. For more information, see Local SSD data persistence (/compute/docs/disks/local-ssd#data_persistence).

Create an instance with Local SSDs (/compute/docs/disks/add-local-ssd#create_local_ssd) when you need a fast scratch disk or cache and don't want to use instance memory.

Create an instance with Local SSDs (/compute/docs/disks/add-local-ssd#create_local_ssd)

Performance

Local SSDs are designed to offer very high IOPS and low latency. Unlike persistent disks, you must manage the striping on local SSDs yourself. Combine multiple local SSD partitions into a single logical volume (/compute/docs/disks/add-local-ssd#formatmultiple) to achieve the best local SSD performance per instance, or format local SSD partitions individually (/compute/docs/disks/add-local-ssd#formatindividual).

Local SSD performance depends on which interface you select. Local SSDs are available through both SCSI (http://wikipedia.org/wiki/SCSI) and NVMe (http://wikipedia.org/wiki/NVM_Express) interfaces.

Note: You must use a NVMe-enabled image with the NVMe interface to achieve the best performance. For more information see Selecting the NVMe or SCSI interfaces (/compute/docs/disks/local-ssd#choose_an_interface).

The following table provides an overview of local SSD capacity and estimated performance using NVMe. To reach maximum performance limits with an N1 machine type, use 32 or more vCPUs. To reach maximum performance limits on an N2 and N2D machine type, use 24 or more vCPUs.

Storage space	Partitions	IOPS		Throughput (MB/s)	
		Read	Write	Read	Write
3 TB	8	680,000	360,000	2,650	1,400
6 TB	16	1,600,000	800,000	6,240	3,120
9 TB	24	2,400,000	1,200,000	9,360	4,680

For more information, see Local SSD performance (/compute/docs/disks/local-ssd#performance) and Optimizing Local SSD performance (/compute/docs/disks/optimizing-local-ssd-performance).

Local SSD encryption

Compute Engine automatically encrypts your data when it is written to local SSD storage space. You can't use customer-supplied encryption keys (/compute/docs/disks/customer-supplied-encryption) with local SSDs.

Data persistence on Local SSDs

Please read Local SSD data persistence (/compute/docs/disks/local-ssd#data_persistence) to learn what events preserve your Local SSD data and what events can cause your Local SSD data to be unrecoverable.

General limitations

- You can create an instance with 16 or 24 local SSD partitions for 6 TB or 9 TB of local SSD space, respectively. This is available on instances with N1, N2, N2D, and custom machine types. To reach the maximum IOPS limits, use a VM instance with 32 or more vCPUs.
- Instances with shared-core (/compute/docs/machine-types#sharedcore) machine types can't attach any local SSD partitions.
- You can't attach Local SSDs to E2, Tau T2D, Tau T2A (Preview (/products#product-launch-stages)), and M2 machine types.

Local SSDs and machine types

You can attach Local SSDs to most machine types available on Compute Engine, unless otherwise noted (/compute/docs/machine-types#machine_type_comparison). However, there are constraints around how many local SSDs you can attach based on each machine type:

N1 machine types	**Number of local SSD partitions allowed per VM instance**
All N1 machine types	1 to 8, 16, or 24
N2 machine types	
Machine types with 2 to 10 vCPUs, inclusive	1, 2, 4, 8, 16, or 24
Machine types with 12 to 20 vCPUs, inclusive	2, 4, 8, 16, or 24
Machine types with 22 to 40 vCPUs, inclusive	4, 8, 16, or 24
Machine types with 42 to 80 vCPUs, inclusive	8, 16, or 24
Machine types with 82 to 128 vCPUs, inclusive	16 or 24
N2D machine types	
Machine types with 2 to 16 vCPUs, inclusive	1, 2, 4, 8, 16, or 24
Machine types with 32 or 48 vCPUs	2, 4, 8, 16, or 24
Machine types with 64 or 80 vCPUs	4, 8, 16, or 24
Machine types with 96 to 224 vCPUs, inclusive	8, 16, or 24

C2 machine types	
Machine types with 4 or 8 vCPUs	1, 2, 4, or 8
Machine types with 16 vCPUs	2, 4, or 8
Machine types with 30 vCPUs	4 or 8
Machine types with 60 vCPUs	8
C2D machine types	
Machine types with 2 to 16 vCPUs, inclusive	1, 2, 4, 8
Machine types with 32 vCPUs	2, 4, 8
Machine types with 56 vCPUs	4, 8
Machine types with 112 vCPUs	8
A2 machine types	
`a2-highgpu-1g`	1, 2, 4, or 8
`a2-highgpu-2g`	2, 4, or 8
`a2-highgpu-4g`	4 or 8
`a2-highgpu-8g` or `a2-megagpu-16g`	8
M1 machine types	
`m1-ultramem-40`	Not available
`m1-ultramem-80`	Not available
`m1-megamem-96`	1 to 8
`m1-ultramem-160`	Not available
E2, Tau T2D, Tau T2A (Preview (/products#product-launch-stages)), and M2 machine types	**These machine types don't support local SSD drives.**

Local SSDs and preemptible VM instances

You can start a preemptible VM instance with a local SSD (/compute/docs/disks#localssds) and Compute Engine charges you discounted spot prices (/compute/disks-image-pricing#localssdpricing) for the local SSD usage . Local SSDs attached to preemptible instances work like normal local SSDs, retain the same data persistence characteristics (/compute/docs/disks/local-ssd#data_persistence), and remain attached for the life of the instance.

Compute Engine doesn't charge you for local SSDs if their instances are preempted in the first minute after they start running.

For more information about local SSDs, see Adding local SSDs (/compute/docs/disks/local-ssd).

Reserving Local SSDs with committed use discounts

To reserve Local SSD resources in a specific zone, see Reserving zonal resources (/compute/docs/instances/reserving-zonal-resources). Reservations are required for committed-use pricing for Local SSDs.

Cloud Storage buckets

Cloud Storage buckets are the most flexible, scalable, and durable storage option for your VM instances. If your apps don't require the lower latency of Persistent Disks (#pdspecs) and local SSDs (#localssds), you can store your data in a Cloud Storage bucket.

Connect your instance to a Cloud Storage bucket (#writetobucket) when latency and throughput aren't a priority and when you must share data easily between multiple instances or zones.

Performance

The performance of Cloud Storage buckets depends on the storage class (/storage/docs/storage-classes) that you select and the location of the bucket relative to your instance.

The standard storage class used in the same location as your instance gives performance that is comparable to persistent disks (#pdspecs) but with higher latency and less consistent throughput characteristics. The standard storage class used in a multiregional location stores your data redundantly across at least two regions within a larger multiregional location.

Nearline and coldline storage classes are primarily for long-term data archival. Unlike the standard storage class, these archival classes have minimum storage durations and read charges. Consequently, they are best for long-term storage of data that is accessed infrequently.

Reliability

All Cloud Storage buckets have built-in redundancy to protect your data against equipment failure and to ensure data availability through datacenter maintenance events. Checksums are calculated for all Cloud Storage operations to help ensure that what you read is what you wrote.

Flexibility

Unlike persistent disks (#pdspecs), Cloud Storage buckets aren't restricted to the zone where your instance is located. Additionally, you can read and write data to a bucket from multiple instances simultaneously. For example, you can configure instances in multiple zones to read and write data in the same bucket rather than replicate the data to persistent disks in multiple zones.

Cloud Storage encryption

Compute Engine automatically encrypts your data before it travels outside of your instance to Cloud Storage buckets. You don't need to encrypt files on your instances before you write them to a bucket.

Just like persistent disks, you can encrypt buckets with your own encryption keys (/storage/docs/encryption/customer-supplied-keys).

Writing and reading data from Cloud Storage buckets

Write and read files from Cloud Storage buckets by using the `gsutil` command-line tool (/storage/docs/quickstart-gsutil) or the Cloud Storage API (/storage/docs/apis).

gsutil (#gsutil)	API (#api)

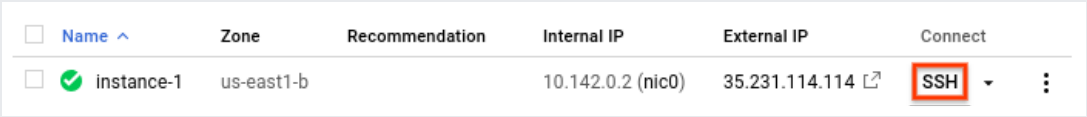
By default, the `gsutil` command-line tool is installed on most VMs that use public images (/compute/docs/images/os-details). If your VM doesn't have the `gsutil` command-line tool, you can install `gsutil` as part of the Google Cloud CLI (/storage/docs/gsutil_install).

1. Connect to an instance (/compute/docs/instances/connecting-to-instance).

   a. In the Google Cloud console, go to the **VM instances** page.

   Go to VM instances (https://console.cloud.google.com/compute/instances)

   b. In the list of virtual machine instances, click **SSH** in the row of the instance that you want to connect to.



2. If you have never used `gsutil` on this instance before, use the gcloud CLI to set up credentials.

   ```
   gcloud init
   ```

   Alternatively, if your instance is configured to use a service account (/compute/docs/access/service-accounts) with a Cloud Storage scope, you can skip this step.

3. Use the `gsutil` tool to create buckets, write data to buckets, and read data from those buckets (/storage/docs/quickstart-gsutil#create). To write or read data from a specific bucket, you must have access to the bucket. You can read data from any bucket that is publicly accessible.

   Optionally, you can also stream data (/storage/docs/streaming) to Cloud Storage.

What's next

- Add a persistent disk to your instance (/compute/docs/disks/add-persistent-disk#create_disk).

- Add a regional persistent disk to your instance (/compute/docs/disks/regional-persistent-disk).
- Create an instance with Local SSDs (/compute/docs/disks/add-local-ssd#create_local_ssd).
- Create a file server or distributed file system (/solutions/filers-on-compute-engine).
- Review the quotas for disks (/compute/quotas#disk_quota).
- Mount a RAM disk on your instance (/compute/docs/disks/mount-ram-disks).

Try it for yourself

If you're new to Google Cloud, create an account to evaluate how Compute Engine performs in real-world scenarios. New customers also get $300 in free credits to run, test, and deploy workloads.

Try Compute Engine free (https://console.cloud.google.com/freetrial)

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