

Google Distributed Cloud air-gapped racks

Overview

Google Distributed Cloud air-gapped is a data center scale, full-stack, fully air-gapped, private cloud solution with built-in AI/ML capabilities. It is designed to meet the stringent security, sovereignty and compliance requirements. GDC offers a full suite of managed storage services that come with best in class data security, data protection, and data management capabilities, and can meet varying needs of any enterprise and public-sector customer workloads.



The GDC storage portfolio contains the following managed services:

Block storage service

Highly performant and durable block storage for VM and container workloads.

Object storage service

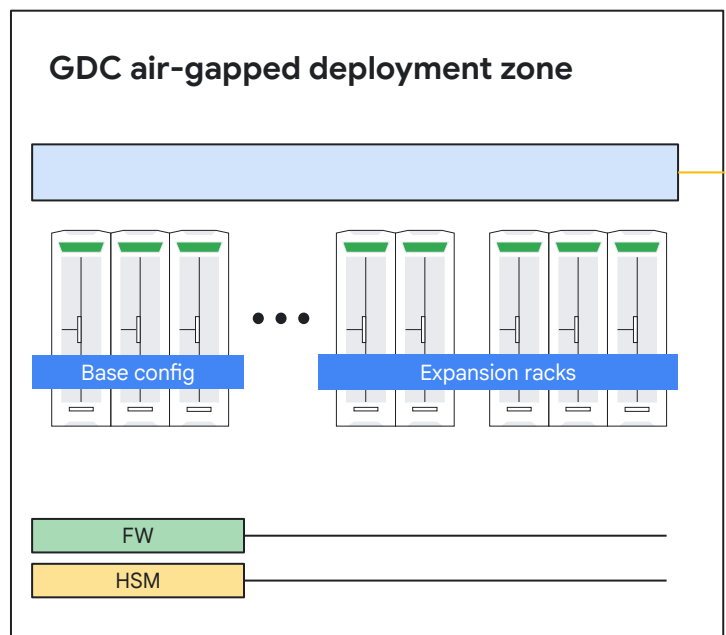
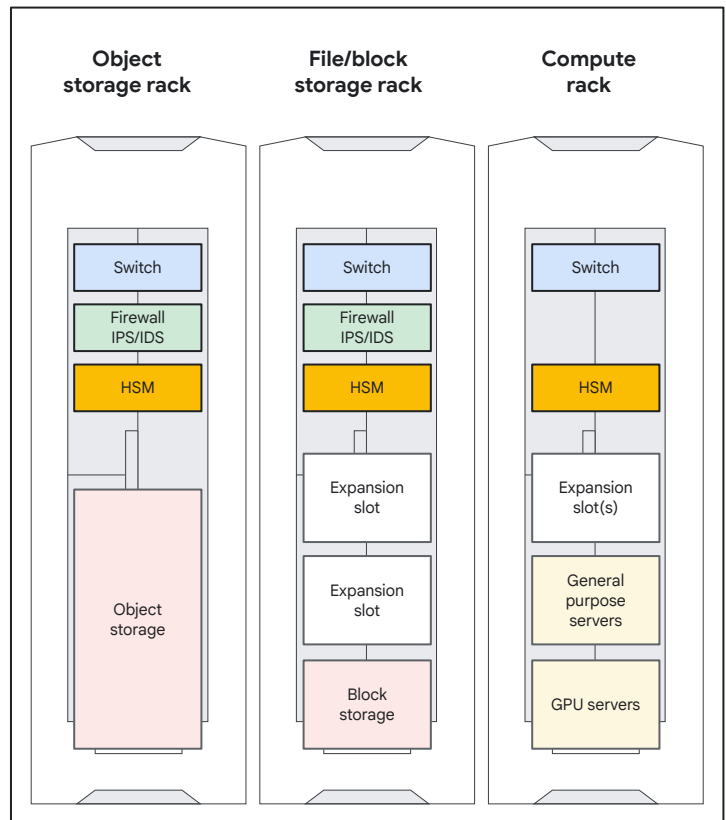
Highly scalable and durable managed Object Storage service.

Data transfer service

Managed online data transfer service to transfer data in and out of a GDC environment.

Data protection services

Enterprise class data protection services, including snapshots, backups and native storage replication capabilities.





Secure

Zero-trust security that meets the U.S. Government's most stringent data security and compliance requirements including those for sensitive, mission-critical, and classified information. Ability to control and manage who has access to data, including the ability to store data locally, manage encryption keys, and to have access to data in a timely fashion.



Scalable

Data center scale solution that can scale from a few storage racks to tens of PiB of data per GDC Zone. Scale-out architecture with base and dedicated storage expansion racks, support for scale out and scale up models.



Benefits



Reliable

Storage services with state-of-the-art durability, availability and data protection capabilities, including backup, snapshots and multi zone/site data replication capabilities.



Performant

Low latency, cost-effective price and performance options for customers to select from and to meet workload profile and use-case requirements.



Easy to use

Fully managed storage services that are easy to deploy and manage, with public cloud like management interface and user-experience.



Low TCO

Secure multi-tenant shared storage infrastructure with secure organization-level data isolation, competitive offerings with low total cost of ownership.

Block storage services

Google 1P managed block storage service

SSD based balanced block storage

Single-writer performant storage

Support for VM and container workloads

Capabilities	Specifications
Primary use cases	Use cases: Boot disks, data disks, PV/PVCs, enterprise apps & DBs
Storage tiers/class	SSD based balanced block storage offering offering 3 IOPS/GiB, with linear performance scale with capacity
Availability	Zonal high-availability and multi-zonal block storage replication capabilities
Scale	Base usable capacity: Up to 786 TiB base (increments of 262 TiB) Expansion capacity: 10+ PiB per zone (increments of 262 TiB)
Operational model	Non-disruptive operations with hot upgrades and zero downtime maintenance
Tenancy model	Shared hardware with organizational multi-tenancy and data separation
Security and compliance	<ul style="list-style-type: none">• Designed ground-up with security in mind, offering robust operational and data security features• Default encryptions at rest and in transit• Client side encryption, secure data deletion with crypto-shed and customer-managed encryption keys with per-volume encryption keys• Self-encrypting-HW drives with FIPS 104-3 compliance
Data protection	Local snapshot, backups (VMs and container workloads), multi-zone block storage replication

Object storage services

Google 1P managed block storage service

Scalable object storage

Highly durable storage

Capabilities	Specifications
Primary use cases	AI/ML workloads, unstructured data videos, images, web pages, sensor data
Storage tiers/class	Standard object storage class
Availability	Zonal HA, EC2+1 erasure coding and multi-zonal replication
Base capacity	Base usable capacity: Up to 879 TiB base Expansion capacity: 10+ PiB per zone (increments of 293 TiB)
Operational model	Non-disruptive operations with hot upgrades without downtime
Tenancy model	Multi-tenant solution with organizational multi-tenancy
Security and compliance	<ul style="list-style-type: none">• Designed ground-up with security in mind, offering robust operational and data security features• Default Encryptions at rest and in transit• Client Side Encryption with Bucket and Object Level Encryption• Secure data deletion with crypto-shed and customer-managed encryption• Self-encrypting HW drives with FIPS 104-3 compliance
Data protection	Object retention with WORM buckets, object versioning, online data transfer service