OMICSPACE

Ethical and secure -omics data space

BDIAB

IIS La Fe

Plataforma de Big Data, IA, Bioestadística & Bioinformática

SERVICE CATALOG



Participants:

IIS La Fe · Fundación Pública Andaluza Progreso y Salud · Hospital del Mar Barcelona · Hospital Universitario La Paz · Hospital Universitario Ramón y Cajal · iacs · Medicina Xenómica · HARMONY Alliance Foundation

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INFRASTRUCTURE: STORAGE & COMPUTE



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Infrastructure

Provisioning of resources to store and process data securely, with access control and full activity logging. Selection of the storage level is adjusted to performance, cost and retention time. Compute is offered with and without GPUs to adapt capacity to each project, while maintaining a controlled and scalable environment with full traceability.

Data storage services

Guide to use and storage-level selection

Usage guidance and storage class selection

Operational definitions

- Intensive use: very frequent reads and writes, with consistently low latency during active analysis and modeling phases.
- Daily use: data is consulted or updated on most days.
- Intermittent use: data is used several times per week or in periods, with weeks of higher and lower activity.
- Sporadic use: data is consulted occasionally, monthly or quarterly.
- Very long-term archiving: prolonged retention with infrequent access.

Common storage conditions

- Encryption at rest and in transit.
- Quotas and permissions by project and by user.
- Access control and activity auditing.
- Basic backups according to the project policy.
- Monthly review of usage and capacity, with a brief report on consumption, activity and backup status.
- Storage classes available in IBM Cloud Object Storage: Smart Tier with automatic optimization based on the monthly pattern (hot/cool/cold) and no retrieval charges; Standard for active use with no additional read charge beyond the operation; Vault for access less than once a month with minimum object size and storage duration and read charges; Cold Vault for access every 90 days or less with longer minimums and read charges.

Selection criteria

- Intensive use with continuous access and low latency → PTBG IA ES56 · Smart Hot Storage.

- Daily shared work with cost efficiency → PTBG IA ES59 · Standard Storage.
- Intermittent use with variations within the month → PTBG IA ES57 · Smart Cool Storage.
- Retention with sporadic access → PTBG IA ES58 · Smart Cold Storage.
- Prolonged retention with versioning and preservation traceability → PTBG IA ES60 · Vault Storage.
- Very long-term archiving with occasional access (every 90 days or less) → PTBG IA ES61 · Cold Vault Storage.

Common object versioning conditions

Available across all storage services based on IBM Cloud Object Storage. Versioning is enabled at the bucket level. When enabled, each object version counts as billable storage and operations are billed according to the service policy.

PTBG-IA-ES56 Smart Hot Storage

Service description

Storage oriented to data with daily and intensive read/write usage, suitable for active phases of analysis and modeling, with consistently low access times.

Service scope

- Smart Tier configuration optimized for rapid and frequent access with sustained low latency.
- Establishment of quotas and permissions by project and by user; access control and activity auditing.
- Assurance of high availability and low access times; basic backups according to the project policy.
- Monthly review of usage and capacity with a brief report on consumption, activity and backup status.

Not included

- Data download outside the environment.

PTBG-IA-ES57 Smart Cool Storage

Service description

Storage oriented to data with non-daily use and variable activity throughout the month, prioritizing cost efficiency and regular access times when activity increases.

Service scope

- Smart Tier configuration with automatic optimization aligned to monthly activity in the cool tier.
- Establishment of quotas and permissions; access control and activity auditing.
- Provision of regular access with cost efficiency; basic backups according to the project policy.
- Monthly review of usage and capacity with a brief report on consumption, activity and backup status.

Not included

- Data download outside the environment.

PTBG-IA-ES58 Smart Cold Storage

Service description

Cost-efficient storage for sporadic access, oriented to retaining data for long periods and consulting it occasionally. Recommended when daily consultation is not required, and long-term retention is needed at reduced cost.

Service scope

- Smart Tier configuration with automatic optimization aligned to monthly activity in the cold tier.
- Establishment of quotas and permissions; access control and activity auditing.
- Prioritization of low cost with longer access times than in daily-use levels; basic backups according to the project policy.
- Monthly review of usage and capacity with a brief report on consumption, activity and backup status.

Not included

- Data download outside the environment.

PTBG-IA-ES59 Standard Storage

Service description

General-purpose storage tier designed to support the project team's routine operational workloads. It provides a shared project space to collaborate on documents and keep information regularly updated. The solution delivers an optimal balance between low-latency data access and cost-efficient capacity provisioning.

Service scope

- Standard class configuration with encryption at rest and in transit; active use with read access not incurring additional charges beyond the operation.
- Establishment of quotas and permissions; access control and activity auditing.
- Fast and predictable access suitable for daily editing and consultation; basic backups according to the project policy.
- Monthly review of usage and capacity with a brief report on consumption, activity and backup status.

Not included

- Data download outside the environment.

PTBG-IA-ES60 Vault Storage

Service description

Storage with prolonged retention and archiving oriented to preserving project results and datasets. Recommended when expected access is less than once per month and traceability and preservation with retention policies are required.

Service scope

- Vault class configuration with encryption and prolonged retention, minimum object size and storage duration, and read charges aligned to sporadic access.
- Execution of restoration tests at the defined frequency.
- Activity auditing and issuance of a preservation report.

Not included

- Data download outside the environment.

PTBG-IA-ES61 Cold Vault Storage

Service description

Archive storage for very long-term retention at minimal cost, intended for data with occasional access. Recommended when expected access is every 90 days or less and very long-term retention with contained costs is required. Cold Vault is online storage with minimum storage periods and read charges.

Service scope

- Cold Vault class configuration with encryption and extended retention.
- Planning of restoration procedures aligned to occasional access and to minimum storage and read requirements.
- Activity auditing and issuance of a preservation report.

Not included

- Data download outside the environment.

Data Compute Services

Common conditions

- Deployment of secure, isolated environments on a private network with no public exposure.
- Continuous monitoring and auditing.
- Assurance of a closed environment with no data egress during execution.

PTBG-IA-ES62 Non-GPU machine — Standard 32 vCPU 128 GiB

Service description

Secure, isolated compute environment on IBM Cloud, oriented to projects requiring high processing and memory capacity without data extraction outside the environment; suitable for simulations, analysis of large data volumes and intensive scientific processing.

Service scope

- Provision of 32 vCPUs for parallel tasks and intensive computing.
- Allocation of 128 GiB RAM for large datasets and demanding applications.
- 64 Gbps network capacity for fast internal communication between systems.

Not included

- Data download outside the environment.

PTBG-IA-ES63 Non-GPU machine — Standard 32 vCPU 128 GiB

Service description

Secure, isolated compute environment on IBM Cloud, oriented to projects requiring very high processing and memory capacity without data extraction outside the environment; suitable for advanced simulations, massive data analysis and intensive scientific processing.

Service scope

- Provision of 64 vCPUs for parallel tasks and high-performance computing.
- Allocation of 256 GiB RAM for very large datasets and demanding applications.
- 80 Gbps network capacity for fast internal communication between systems.

Not included

- Data download outside the environment.

PTBG-IA-ES66 GPU machine — 1×GPU · 24 vCPU · 120 GiB

Description

A secure and isolated compute environment in IBM Cloud, deployed on a private network with no public exposure. It is intended for projects that require high processing capacity, memory, and GPU acceleration, with no data extraction to the outside; suitable for simulations, machine learning, three-dimensional modelling, and analysis of large volumes of data, with continuous monitoring and auditing.

What is included

- vCPU: 24 processing cores for parallel tasks and intensive computing.
- Memory (RAM): 120 GiB to handle large datasets and demanding applications.
- Bandwidth: 48 Gbps, ensuring fast internal communication between systems.
- GPU: 1 × NVIDIA L40S with 48 GB, to accelerate AI, graphics, or scientific computing workloads.
- Security: closed, monitored environment with no data egress to the outside.

PTBG-IA-ES67 Data Download

Service description

Faithful copy of a dataset already stored in the platform's secure environments, with delivery through a secure channel, integrity verification and operation logging, preserving the original set's structure, formats and metadata.

Service scope

- Dataset location in the authorized repository and preparation of a full copy without modifications.
- Encryption in transit during download and access control for the operation.
- Integrity verification via checksums and issuance of the corresponding receipt.
- Availability of a secure delivery mechanism with a bounded availability window and logging of download traceability.

Not included

- Transformation, cleaning, anonymization, format change, analysis or any additional processing of downloaded files.
- Reconstruction of missing data or aggregation of external sources.