

# Private Cloud

## Cloud computing infrastructure for geospatial processing

A service provided by CopernicusLAC Chile for  
the geospatial community in Latin America  
and the Caribbean



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**CMM**  
Center for  
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# Introduction

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The Copernicus Regional Centre for Latin America and the Caribbean, CopernicusLAC Chile, is an initiative implemented by the Center of Mathematical Modeling (CMM) of the Faculty of Physical and Mathematical Sciences (FCFM) at the University of Chile, and funded by the European Union through the Directorate General for International Partnerships (DG INTPA) together with the University of Chile, in the framework of the European Union-Latin America and the Caribbean Digital Alliance.

In this context, CopernicusLAC Chile offers institutions, companies and technical teams in the region its **Private Cloud**, a high-performance service, designed specifically for the processing, analysis, and utilization of satellite and geospatial data.

Our Private Cloud is an Infrastructure as a Service (IaaS) platform, based on cloud computing technology, that provides users with computing power to process satellite imagery using open-source applications, and local access to all imagery from the Sentinel satellites of Copernicus, the Earth Observation component of the European Union's Space Programme.

The service is delivered via state-of-the-art computing infrastructure, which is accessible via the internet and academic networks. It offers a wide range of virtual machines (VMs) specially configured to enable geomatics experts to process satellite imagery and generate the analyses required by their institution or company.

Furthermore, these institutions or companies will be able to develop geomatics applications on this infrastructure, enabling them to provide services to their target audience, whether public or private, at both national and regional levels, throughout Latin America and the Caribbean.

Depending on specific requirements, virtual machines can have access to large amounts of storage, RAM, and processors, including both conventional CPUs and GPUs for processing Artificial Intelligence (AI) algorithms.

Our experts have developed a wide range of different configurations, suitable for both individual work and for automation and the provision of geospatial services to third-party institutions or the general public.

Our offer includes a wide range of Open-Source applications, such as QGIS, SNAP, among others, all of which are pre-installed and ready to use, so that users will have a working environment ready from the moment they log in to the platform.

In addition to the virtual machines available, we offer Linux platforms with open-source databases and development environments, enabling organisations that require them to automate processes and make these available to internal or external users, on a permanent or sporadic basis.

The service is complemented by direct access to the Copernicus Repository, which is a database containing all images captured by the Sentinel satellites since 2014, covering Latin America and the Caribbean, as well as a 200-mile radius around their territory. This database is connected via local links within the same data centre, reducing download times and enabling the centralisation of base images without the need to store them on virtual machines, thereby optimising capacity utilisation without compromising efficiency.

CopernicusLAC Chile's offering is aimed at institutions and companies throughout Latin America and the Caribbean, which can then allocate resources to their employees through a simple and straightforward process.

# Product Description

## Individual Virtual Machines

Individual Virtual Machines (VMs) are designed for professionals, researchers, and technical teams who require a robust environment for developing geomatics projects, processing geospatial data, and training artificial intelligence models.

Each VM is delivered fully configured, with an operating system and specialized software pre-installed, optimized for analysis, modeling, and scientific and technological development.

The contracting institution may request other configurations, which will be evaluated for technical feasibility and pricing by our technical and sales teams.

Default and available hardware configurations:

Product	CPU cores	RAM	Storage	vGPU (vRAM)
Small	12	32 GB	512 GB	0
Medium	16	64 GB	1024 GB	0
Large	32	128 GB	2048 GB	0
Basic AI	16	96 GB	2048 GB	8 GB
Super AI	32	192 GB	2048 GB	24 GB

## Pre-installed Software for Individual Machines

Geomatics project VMs function as high-performance analytical workstations designed for intensive geospatial workflows. They are supported by the stability of **Ubuntu Server 24**, feature a lightweight **XFCE graphical desktop**, and are managed by **Anaconda/Conda-forge**.

This platform is ready to perform complex analyses thanks to its Python-based, powered by **VS Code** and the **GCC compiler**. The geomatics package is top-notch: **TensorFlow/PyTorch**, which drives Deep Learning, **Numpy** and **Scikit-learn**, which handle data analysis, while **Geopandas** and **Rasterio** offer expert manipulation of vector and raster data. In addition, tools such as **QGIS**, **WhiteToolBox**, and **ESA SNAP** for satellite processing ensure that professionals can process and visualize satellite imagery with maximum efficiency.

The result is a powerful, flexible, and reliable platform that maximizes productivity from day one.

List of Pre-installed Software for Geomatics Projects		
SO/Base	Applications	Geomatics Libraries/Tools
Ubuntu Server 24	Python	Tensorflow/Pytorch
Anaconda/Conda forge	QGIS	Numpy
XFCE Graphical Desktop	Scikit-learn	Geopandas
Pueue Task Manager	VS Code	Rasterio
	GCC Compiler	QGIS
	ESA SNAP	WhiteToolBox
		Scikit-learn

## Virtual Machines for Service Deployment

This family of VMs is oriented for institutions and companies that need to publish and operate online geomatic services in stable and scalable form.

It allows to deploy two main types of applications:

- \* **Software oriented to visualize geospatial information**, designed for showing maps, model results and thematic layers.
- \* **Software oriented to process geospatial data**, focus on executing algorithms, reload predictions and generate new analytics products

The configurations are designed to guarantee an efficient and stable deployment in scientific and technology environments.

Objectives	Product name	CPU cores	RAM	Storage	vGPU (vRAM)
Productive machines (view only)	V1	4	12 GB	160 GB	0
	V2	8	16 GB	320 GB	0
	V3	16	32 GB	480 GB	0
Productive machines (view only)	V4	4	12 GB	160 GB	8 GB
	V5	8	16 GB	320 GB	12 GB
	V6	16	32 GB	480 GB	24 GB

## Pre-installed Software for Geomatics Projects

Application Deployment VMs are designed for maximum reliability and efficient production, ensuring solutions from development through to critical operations, with full control and guaranteed performance.

Based on the stability of **Ubuntu Server 24**, this lightweight environment focuses on automated workflow and the continuous service execution.

The platform is built on **Podman**, which ensures that your geospatial applications run in secure, isolated, and replicable containers, facilitating large-scale deployment without dependency conflicts. Additionally, **GIT** ensures traceability and version control, and the **GCC Compiler** provides the ability to build and optimize binaries.

**Table of Pre-installed Software for Geomatics Application Development**

SO/Base	Deployment	Geomatics Libraries/Tools
GIT	Podman	-
Ubuntu Server 24	GCC Compiler	

## Virtual Machines for Geomatics Web Application Development

Designed for the development of geomatics software that will be presented via an interactive online platform.

This family is divided into two types:

- \* **VMs for visualizing maps and predictive model results**, oriented to presentation and geospatial information analysis.
- \* **MVs for processing and updating geospatial data**, designed to perform calculations, integrate new data sources, and update model results.

Both types include optimized configurations and specialized software for developing geomatics solutions.

Objectives	Product name	CPU cores	RAM	Storage	vGPU (vRAM)
SW development machines (view only)	P1	4	8 GB	80 GB	0
	P2	8	16 GB	180 GB	0
	P3	12	32 GB	320 GB	0
SW development machines (visualization and computation-intensive (GPU))	P4	4	8 GB	80 GB	4 GB
	P5	8	16 GB	180 GB	8 GB
	P6	12	32 GB	320 GB	12 GB

## Pre-installed Software for Geomatics Application Development

The Geomatics Application Development MVs are the definitive engineering workstation, combining the latest development technology and geospatial analysis.

Based on **Ubuntu Server 24** with a lightweight **XFCE Desktop**, and using **Anaconda/Conda-forge** and **Pyenv** for flexible environment management, this platform is ready to build full-stack solutions.

The development is centered in **Python** and **JavaScript**, with **VS Code** as primary IDE and **GCC Compiler** for optimization. The integration of **GIT**, **Podman** (for containers) and **Postgre SQL** (for data) guarantee a modern and scalable workflow.

In the field of geomatics, it leverages the power of **TensorFlow/PyTorch**, **NumPy**, and **Scikit-learn** for data science, along with **Geopandas** and **Rasterio** for expert data handling, ensuring that developers can bring the next generation of geospatial applications to market.

List of Pre-installed Software for Geomatics Application Development		
SO/Base	Applications Development (App Dev)	Geomatics Libraries/Tools
Ubuntu Server 24	Python	Geopandas
Postgre SQL	VS Code	QGIS
Chromium Web Browser	Tensorflow/Pytorch	Numpy
DB eaver	QGIS	Scikit-learn
XFCE Desktop	Scikit-learn	Rasterio
Anaconda/Conda forge	JavaScript	WhiteToolBox
Podman	Rasterio	
Pyenv	Jupyter LAB	
	GIT	
	GCC Compiler	
	React, Vue.js and Angular	

# Prices List

Our Private Cloud offers a transparent and competitive pricing model designed to maximize the return on investment for institutions and businesses.

Rates are based on monthly hours of use or continuous availability, depending on the type of machine. Special configurations or customized usage plans can be quoted separately.

The CopernicusLAC Chile Private Cloud does not just provide infrastructure. It delivers speed, reliability, and a real competitive advantage in the use of satellite and geospatial data.

Product	Monthly hours of use	Monthly neto price
Small	80 hrs per month	€ 23
Medium	80 hrs per month	€ 35
Large	80 hrs per month	€ 71
Basic AI	80 hrs per month	€ 66
Super AI	120 hrs per month	€ 336
P1	200 hrs per month	€ 18
P2	200 hrs per month	€ 35
P3	200 hrs per month	€ 57
P4	Unlimited	€ 126
P5	Unlimited	€ 251
P6	Unlimited	€ 389
V1	Unlimited	€ 54
V2	Unlimited	€ 95
V3	Unlimited	€ 190
V4	Unlimited	€ 210
V5	Unlimited	€ 329
V6	Unlimited	€ 1.128