

Table of Contents

PI resources information

Cost Model

Cost Model at a Glance

Annual Billing Units

Billing Period

Resource Accounting Standardization

(Optional) Resource Usage quota

Price per Billing Unit

Free Annual Allocation

Progressive Pricing

Purchasing or Renting Private Compute Nodes

Benefits of Private Compute Nodes

Usage Limits

Rules and Conditions

Ownership and Warranty

Cost of Renting a Compute Node

Rental Conditions

Monthly Usage report for PI

Monitoring Usage

PI resources information

A High Performance Computing (HPC) cluster is a shared scientific infrastructure that provides a large amount of computing resources for research projects.

This page is intended for Principal Investigators (PIs) and explains how **Billing Units** (BU), our unified measure of computing resource usage, are allocated to research groups, how consumption is monitored, the costs associated with HPC usage, and the options available for **purchasing** or **renting** private compute nodes.

Cost Model

The HPC service is free in specific situations:

- **Educational courses** can use the platform free of charge.
- Each Principal Investigator (PI) receives an annual allocation of free **Billing Units (BU)**.

Additional usage can be covered through:

- **Pay-per-use billing** according to the SNSF pricing table.
- **Purchasing or renting compute nodes**, which provides additional annual Billing Units and higher scheduling priority.

Cost Model at a Glance

The HPC accounting model is based on a single resource unit called the **Billing Unit (BU)**.

1. Every PI receives **100,000 BU per year** free of charge.
2. Research groups that own or rent compute nodes receive additional annual BU allocations.
3. CPU, memory, and GPU usage are converted into BU using standardized conversion factors.
4. BU can be consumed on any of our HPC clusters: **Baobab**, **Yggdrasil**, and **Bamboo**.
5. Once all available BU have been consumed, additional usage is billed according to the SNSF pricing table.

Annual Billing Units

Research groups may receive Billing Units from two sources:

- The annual free allocation provided to every PI.
- The hardware owned or rented by the research group.

You can check your available BU using:

[Resources Available for Research Groups](#) (HPC account or group member with HPC access required)

If your research group owns compute nodes but your PI does not appear in the report, please contact the HPC support team.

Billing Period

Billing Units are tracked annually from **December 1 to November 30**.

For example:

Billing Year	Usage Period
2026	2025-12-01 → 2026-11-30
2027	2026-12-01 → 2027-11-30

Monthly reports, annual allocations, remaining balances, and any applicable charges are calculated using this accounting period.

Resource Accounting Standardization



All resources are accounted for using a unified Billing Unit (BU) model. CPU usage, memory consumption, and GPU usage are converted into Billing Units using predefined conversion factors.

For details, please refer to: [Resource Accounting Uniformization](#)

This unified accounting system allows all resources to be compared and billed consistently, regardless

of the underlying hardware.

(Optional) Resource Usage quota

PIs who wish to prevent their research group from exceeding its annual Billing Unit (BU) allocation may request the activation of resource usage limits on their research group account.

When enabled, these limits are enforced by the HPC scheduling system and can help avoid unexpected overconsumption.

Please contact the HPC support team if you would like this option to be enabled for your research group.

Price per Billing Unit

Overview of the SNSF HPC pricing table:

Unit operational costs, CHF	Uptime (h)		67 000 000
U.1 User fee 1 (direct costs) CPU	CHF/h		0,0157
U.2 User fee 2 (direct costs + other direct costs) CPU	CHF/h		0,0284
U.3 User fee 3 (direct costs + other direct costs + indirect costs) CPU	CHF/h		0,0287

You can download the complete table here:

[SNSF Pricing Table](#)

University of Geneva users are billed according to category **U1**.

Categories **U2** and **U3** apply to external organizations such as companies and non-academic institutions.

Free Annual Allocation

Each PI (Principal Investigator) receives **100,000 Billing Units per year** free of charge.

This allocation is granted per PI and not per individual user.

See:

[How to check PI and user resource usage](#) (**HPC account or group member with HPC access required**)

Progressive Pricing

A tiered pricing model is applied to paid resource consumption.

As annual usage increases, additional discounts are automatically applied:

Annual Usage (BU)	Applied Price
0 - 199,999	Base Rate
200,000 - 499,999	Base Rate -10%
500,000 - 999,999	Base Rate -20%
1,000,000+	Base Rate -30%

This model provides reduced costs for large-scale projects.

Purchasing or Renting Private Compute Nodes

Research groups may purchase or rent compute nodes that are integrated into one of the HPC clusters.

These nodes provide:

- A private partition with higher scheduling priority.
- Reduced queue waiting times.
- Maximum job runtimes of up to **7 days** instead of **4 days** on public resources.
- Additional annual Billing Units associated with the hardware contribution.

Benefits of Private Compute Nodes

Owning or renting compute nodes offers two major advantages:

- **Higher** scheduling priority on **your private resources**.
- **Additional Billing Units** that can be consumed on any HPC cluster.

Although the hardware is physically attached to a specific cluster, the associated Billing Units can be used across **Baobab**, **Yggdrasil**, and **Bamboo**, including GPU resources.

Usage Limits

To preserve the shared nature of the infrastructure, research groups may consume up to **60% of the theoretical annual resource contribution of the hardware they own or rent**.

Example for a compute node with:

- 128 CPU cores
- 512 GB RAM
- 1 year contribution period

Calculation:

- **CPU contribution:** 128×1.0
- **Memory contribution:** 512×0.25
- **Time period:** 24×365

- **Usage factor:** 0.6

Result:

$$(128 \times 1.0 + 512 \times 0.25) \times 24 \times 365 \times 0.6 \\ = 1,342,848 \text{ BU}$$

The resulting allocation (**1,342,848 BU**) can be consumed on any cluster.

The purpose of this model is to ensure fair sharing of the infrastructure while rewarding groups that contribute hardware resources.

Rules and Conditions

- **Shared Integration:** The node is integrated into the cluster and remains available to other users when not used by the owning group. See [Partitions](#).
- **Usage Policy:** Usage is governed by the 60% allocation rule described above.
- **Administrative Access:** Research groups do not receive administrative access to compute nodes.
- **Maintenance:** Installation and operational maintenance are handled by the HPC team.
- **Decommissioning:** Nodes may be retired when they become obsolete but will remain in service for at least five years.

Ownership and Warranty

- Compute nodes remain associated with the research group for **5 years**.
- After this period, the hardware may continue to operate within the cluster but will only be accessible through public or shared partitions.
- Nodes include a **3-year manufacturer warranty**.
- After the warranty period, repair costs are the responsibility of the research group.
- Diagnostic costs charged by the vendor are capped at **420 CHF**, even if the hardware cannot be repaired.

Cost of Renting a Compute Node

The monthly rental cost is calculated from:

1. The vendor purchase price.
2. A 15% infrastructure surcharge covering racks, cabling, networking, storage, and operational costs.
3. A 5-year amortization period.

Example:

- Vendor price: 14,361 CHF
- Infrastructure surcharge (15%): 2,154.15 CHF
- Total cost: 16,515.15 CHF
- Amortization period: 60 months

Monthly rental cost:

16,515.15 CHF / 60
= 275.25 CHF per month

Currently, standard rental nodes consist of:

- 128 AMD CPU cores
- 512 GB RAM

Such a node provides approximately **1.34 million Billing Units per year**.

Rental Conditions

- Minimum rental duration: **6 months**
- Unused Billing Units are not carried over and expire at the end of the calendar year.
- Custom hardware configurations may be available upon request.

For quotations or additional information, please contact the HPC support team.

Monthly Usage report for PI

Every PI receives a monthly usage report summarizing the group's resource consumption.

The report includes:

- Annual Billing Units allocated to the research group.
- Billing Units consumed since the beginning of the year.
- Remaining Billing Units.
- Current balance status.

A color indicator helps quickly identify the situation:

- Green: the group remains within its allocated Billing Units.
- Red: the group has exceeded its allocation and additional usage may be billed.

Example:

Dear [redacted]

This monthly report provides an overview of your usage of the **Baobab HPC service** in your role as **Primary Investigator (PI)** for the period:

 **2025-12-01 – 2026-11-30**

Usage Summary

Below is a summary of your current allocation and consumption.

Billing synthesis for PI: [redacted]

Item	Billing Units
Private partition billing (annual)	1,964,112
└ private_astro	1,964,112
└ private_burgi	0
Free tier (annual)	100,000
Total available (annual)	2,064,112
Billing consumed to date	105,221
Remaining Balance	✓ 1,958,891

The values under *Private partition billing* correspond to the detailed consumption per private partition.

Monitoring Usage

To monitor your group's current resource consumption, consult:

[Report and Statistics with sreport](#) (**HPC account or group member with HPC access required**)

From:
<https://doc.eresearch.unige.ch/> - **eResearch Doc**

Permanent link:
https://doc.eresearch.unige.ch/hpc/pi_resources

Last update: **2026/07/16 15:09**

