

TECHNICAL SHEET

Call for Advanced Computing Projects (5th edition)

Ref: FCT/CPCA/2024/01


Under the terms of the Regulations for Advanced Computing Projects, the “Call Notice” document for the Call for Advanced Computing Projects is presented together with a technical sheet that includes the configuration of the available Hardware and Software within this call.

Preliminary note: the information presented in the technical sheet relates to the characteristics of each Advanced Computing Platform in its entirety, although only a part of the capacity will be made available in this call.

Computational models and available platforms:

High Performance Computing (HPC)	Deucalion, MareNostrum 5, Cirrus
Computing for Artificial Intelligence (AI)	Deucalion, MareNostrum 5
Scientific Cloud Computing (Cloud)	Stratus

Platform: Deucalion | HPC and AI | Typologies A0, A1, A2, A3


Platform	Deucalion – partições ARM, x86 & GPU ¹
Peak performance	10 PFLOP
Total Cores	78.336 (ARM partition) and 68.224 (X86 partition)
Total Nodes	1632 (ARM partition) 500 (X86 partition) 33 (GPU partition)
Type of CPU (compute nodes)	Fujitsu ARM A64FX processors (48-core) @2.0 GHz (ARM partition) 2x AMD EPYC 7742 processors (64-core) @2.25 GHz (X86 partition)
Memory (GB RAM/core)	32 GB HBM2 (ARM partition) 256 GB DDR4 (X86 partition) 512 GB DDR4 (GPU partition)
Disk storage	430 TB NVMe + 10 PB HDD
Storage Limit	Variable
GPU	33 x 4
GPU Type	4x NVIDIA Ampere A100 40GB on 17 nodes 4x NVIDIA Ampere A100 80GB on 16 nodes
Infiniband	HDR 100 Gb/s
File System	LUSTRE
Job Queue Manager	SLURM
Software stack	https://docs.macc.fccn.pt/deucalion/#software
URL for more details	https://docs.macc.fccn.pt/deucalion/
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Additional note on Deucalion 1: When filling in the application form, while sorting by platform preference, all approved projects that put the option "Deucalion - any partition" first will be primarily allocated to the ARM partition.

Additional note on Deucalion 2: For energy efficiency reasons and to balance the computational load between partitions on Deucalion, **all users who choose to use the ARM partition on Deucalion will be rewarded with double the node.hours** allocated to the respective projects.



Platform: MareNostrum 5 | HPC and IA | Type A3 access

Platform	MareNostrum 5 – partições GPP e ACC ²
Peak performance	314 PFLOP
Total Cores	717 696 General Purpose partition (GPP partition) 71 680 Accelerated Partition (ACC partition)
Total Nodes	6408 (GPP partition) 1120 (ACC partition)
Type of CPU (compute nodes)	GPP - 2x Intel Sapphire Rapids 8480+ @2Ghz (112 cores node) + 72HBM nodes ACC - 2x Intel Sapphire Rapids 8460Y+ @2.3Ghz (64 cores node) with 4x Nvidia Hopper GPUs per node Next Generation Partition based on Nvidia GRACE CPU Accelerated Next Generation (NGT ACC) - installing
Memory (GB RAM/core)	256 GB using DDR5 (General Purpose Partition) 512 GB using DDR5 (ACC partition)
Disk storage	248 PB SSD/Flash and hard disks, 402 PB tapes GPP - 960GB on NVMe storage ACC - 460GB on NVMe storage
Storage Limit	Variável
GPU	NVIDIA Hopper NGT ACC com Intel Rialto Bridge - em desenvolvimento
GPU Type	ACC - Nvidia Hopper
Infiniband	NDR200
File System	IBM General Parallel File System (GPFS)
Job Queue Manager	SLURM
Software stack & url for more detail	https://www.bsc.es/marenostrum/marenostrum-5 https://www.bsc.es/supportkc/docs/MareNostrum5/intro
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Additional notes on MareNostrum 5: When filling in the application form, while sorting by platform preference, the options "MareNostrum 5 - GPP", "MareNostrum 5 - ACC", "MareNostrum 5 - any partition" will be available; for benchmarking purposes, free prior access may be required via EuroHPC calls; resources will be allocated in CPU core. hours with conversion to node.hours; approved projects will have 12 consecutive months, without extensions.

Platforms: Cirrus & Stratus | HPC & Cloud | A0, A1, A2 Access

Center & Platform	INCD - Cirrus-A e Cirrus-D ³ (HPC)
Peak performance	---
Total Cores	1920 + 4032
Total Nodes	20 + 42
CPU type (compute nodes)	2x AMD EPYC 7643 (48-core) @2.3GHz
Memory (GB RAM/core)	5 GB/core (512GB per server) 10 GB in 2 nodes of Cirrus-D (1TB per server)
Disk storage	1,6 PB Cirrus-A + 1 PB Cirrus-D
Storage limit	Variable
GPU	8
GPU type	Nvidia Tesla T4, V100S and 100
Infiniband	FDR 56 Gb/s Cirrus-A HDR 200 Gb/s Cirrus-D
File system	LUSTRE
Job Queue Manager	SLURM
Software stack	https://wiki.incd.pt/books/software/page/software-list
URL for more details	Wiki INCD

Center & Platform	INCD - Stratus (Cloud)
Type of distribution	openStack
Total Cores	1352 vCPUs
Total Memory	4500 GB
File System	Ceph
Total Storage	100 TB
Max Cores per VM	64 vCPUs
Max Memory per VM	128 GB
Max Disk per VM	Variable
Max Capacity available for 12 months	10 million vCPU.hours
URL for details	https://www.incd.pt/?p=servicos/cloud and https://wiki.incd.pt/shelves/cloud-user-documentation

Platforms with GPUs (Graphic Processing Units)

Center & Platform	Deucalion
Model	Nvidia Ampere A100 40GB and 80GB
Number of installed cards	33 (x4)
Maximum capacity available for 12 months	289 080 GPU.hours (~25% of national quota)

Center & Platform	BSC – MareNostrum 5
Model	Nvidia Hopper
Number of available cards	1120 x 4
Maximum capacity available in 12 months	1 570 000 GPU.hours (5%)

Center & Platform	INCD – Cirrus & Stratus
Model	Nvidia Tesla T4 16GB (4) Nvidia Tesla V100S 32GB (2) Nvidia Tesla A100 80GB (2)
Number of available cards	8
Maximum capacity available in 12 months	70 000 GPU.hours

Available Software

Platform & Center	Deucalion
Software/Installed Modules	https://docs.macc.fccn.pt/deucalion/#software

Platform & Center	MareNostrum 5 - BSC
Software/Installed Modules	https://www.bsc.es/supportkc/docs/MareNostrum5/environment

Platform & Center	Cirrus - INCD
Software/Installed Modules	https://wiki.incd.pt/books/software/page/software-list

Access policies and other useful documents

Access Policies or Acceptable Use Policies (AUP)

RNCA: [Access policy \(pt\)](#)

Deucalion: <https://docs.macc.fcn.pt/>

INCD: <https://www.incd.pt/?p=acceptable-use-policy> & <https://wiki.incd.pt/>

MN5 user responsibilities: <https://www.bsc.es/supportkc/docs/ur>

Contacts for further details:

	Deucalion	MareNostrum 5 BSC	Cirrus / Stratus INCD
E-mail	deucalion@support.macc.fcn.pt	rnca@fccn.pt	helpdesk@incd.pt

Resources allocated to the call:



Supported by:



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