Access to the supercomputers of the JU Industrial usage

Information collected by CASTIEL-2 for the benefit of the NCCs and CoEs members

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Summary of the available information about the EuroHPC-JU Supercomputers (focus on Industry access)

Supercomputer name	Country	Contact people for the industry access	Possible usages	Details on the possible usages	Opportunities for "Test before use" & Proof of Concept	Availabilities for the industry users
LEONARDO	Italy	• Claudio Arlandini (c.arlandini@cineca.it) • Eric Pascolo (e.pascolo@cineca.it)	**Pay per use model**	Company signs a contract with CINECA and pays for the resources according to the pricelist. The results of projects are owned by the company and they don´t need to be public.	"Test" stand-alone projects or within funded projects (for info: see contacts above)	Industrial usage is possible according to rules and access options mentioned above. If interested contact Claudio Arlandini (c.arlandini@cineca.it) and/or Eric Pascolo (e.pascolo@cineca.it).
			ICSC (National HPC Competence Centre)	Resources up to 10% of Leonardo computing capabilities reserved for industrial usage (Italian companies only) through innovation grants and open calls managed by ICSC		
			Industrial Access via EuroHPC calls	Industry Access Track in EuroHPC calls (e.g. extreme access). Proposals will be considered for allocation up to a certain fraction of the total resources available for the cut-off. Meant for open R&D research purposes: the PI commits to publishing the results obtained thanks to the awarded resources.		
LUMI	Finland	• Pekka Uusitalo Director tel. +358 50 042 7720 pekka.uusitalo@csc.fi • Dan Still Partnerships manager tel. +358 50 381 9037 dan.still@csc.fi • Juhani Huttunen Customer solution manager tel. +358 40 581 1138 juhani.huttunen@csc.fi • Mikko Kerttula Account manager puh. +358 50 381 2766 mikko.kerttula@csc.fi • Morthen Mathisen Senior Coordinator puh. +358 50 3812935 morthen.mathisen@csc.fi	**Private–Public collaboration project**	• Project in cooperation with Finnish university or research institution (academic partner) • Project manager (PM) is assigned from academic partner. • Free of charge if results are open and published. If the results are owned by the company, the use will be charged according to the pricelist of LUMI computing services	A company can get familiar with and test the suitability of LUMI computing services for the intended purpose free-of-charge through a "**Try&Buy**" -project. • The company project is created with two user accounts. • Project will have CPU-, GPU, and data storage resources for testing purposes. • Expertise support will be available to get started with the LUMI usage. • The testing project is available for a limited time. After the testing period the company can continue LUMI usage by making a contract with CSC for the LUMI computing services, and by buying the computing resources	Up to 20% of the LUMI supercomputer's computing capacity has been reserved for industrial R&D use. The primary objective is to promote collaboration with higher education institutions or research institutes.
			Pay per use model *intended for companies with a presence in Finland*	Company signs a contract with CSC and pays for the resources according to the pricelist. The results of projects are owned by the company and they don´t need to be public.		
			Business Finland funding	• Start-up and SME companies can request computing capacity grant at a value of 20,000-80,000€. This can also be added to an already running Business Finland funded project.		

			• Large and mid-cap companies can include computing capacity into their R&D project budget, 40% of costs are covered by Business Finland. • Capacity is valued according to the pricelist of LUMI computing services.	for the already existing project (see the Pricelist of LUMI computing services). The company can also stop to use LUMI-services after the testing period free-of-charge. **If interested to take LUMI in use, please contact their experts or** servicedesk@csc.fi	
MARENOSTRUM 5	Spain	Contact for assistance about the application procedure: applications@bsc.es	***Industrial usage not possible on the national share of MareNostrum5***	BSC resources are meant for non-for-profit R&D purposes, and are open to researchers from academia and public research centres. Supercomputing resources are granted by means of RES competitive calls. These are continuously open and proposals are evaluated every four months. To participate in these calls, you need to create an account in the RES Intranet and complete an application form on-line. For further information, please visit the RES website and read the RES Access Protocol.	-	BSC offers ca. 80% of the capacity of MareNostrum through competitive calls (RES and EuroHPC), where technical support and training for users is also offered.
			Industrial Access via EuroHPC calls	Industry Access Track in EuroHPC calls (e.g. extreme access). Proposals will be considered for allocation up to a certain fraction of the total resources available for the cut-off. Meant for open R&D research purposes: the PI commits to publishing the results obtained thanks to the awarded resources.		
VEGA	Slovenia	General Technical and User Support: support@sling.si Contact Person for Commercial Access: Dejan Valh Head of HPC Department IZUM, Institute of Information Science, Maribor +386 51 676 405 dejan.valh@izum.si • Ref.: https://doc.vega.izum.si/industry/	**Pay-per-use model on the national Share: Commercial Access, EDIH DIGI-SI Access**	Price list: https://www.izum.si/en/price-list/ Simple application: https://www.sling.si/forms/prijava/eng.php	Try before buy possibility: • Explore and test HPC infrastructure • Possible Proof of Concept • Free of charge for a limited number of resources (negotiable) • The trial period of max. 6 months Possible funding for hands-on-experience via EDIH DIGI-SI Access (https://digi-si.eu/product/hands-on-experience-using-hpc-rivr-system-and-hpc-arctur-2/)	Available for Commercial Access: 20% of 65% of National Share (13% of HPC Vega overall resources, https://doc.vega.izum.si/shares/)
			EuroHPC JU Open Research and	• Continuously open EuroHPC JU Calls for Benchmark/Development Access	-	EuroHPC JU Regular Access: Industry Access track, prioritized share 20%

			Innovation Access available to Industry	• Regular Access: continuously open call for applications associated with three (3) cut-off dates per year • All access modes are open to users from industry for publicly funded research and innovation activities, which involves publication of the outcome of the use of the resources. Ref.: https://eurohpc-ju.europa.eu/system/files/2022-03/Decision%2018.2021%20-%20Access%20policy.pdf How to Apply: https://prace-ri.eu/hpc-access/eurohpc-access/eurohpc-ju-calls-how-to-apply/		
			Development, Benchmark or Proof of Concept Access through National Competence Centre or Centres of Excellence	IZUM as Hosting Entity of the HPC Vega supports SLING EuroCC (Slovenian national CC) and some CoEs (MultiXscale, MaX3) and other projects, where Industry can cooperate Ref.: https://www.sling.si/en/competence-centre/national-competence-centre/, http://www.max-centre.eu/services/services-industry	-	-
MELUXINA	Luxembourg	• sales [at] lxp.lu • Filipe Pais Chief Customer Success Officer Filipe.pais@lxp.lu +352 691 396 426	**Commercial access**	Commercial access is open to industry, public administration, public research and academia. To request access to MeluXina for a new project, please contact us at **sales [at] lxp.lu**.	LuxProvide delivers tailor-made solutions. Depending on the maturity of the customers, the project, there might be opportunities for initial proof of concepts	The full share of LuxProvide (around 65% of the total capacity) is open to industry users. A company can get familiar with and test the suitability of MeluXina computing services for the intended purpose through a "Proof-of-Concept", subject to discussion and approval from LuxProvide.
			EuroHPC access	Access to the EuroHPC share of MeluXina is governed by the EuroHPC JU Access Policy. Please see the prace-ri.eu/hpc-access/eurohpc-access/ page for information about the running Access Calls, timeline, resource allocations and eligibility conditions.		
KAROLINA	Czech Republic	• industry@iti.cz • Tomáš Stejskal, Commercial User Support Specialist, tomas.stejskal@vsb.cz	**Private-public collaboration project**	Project in cooperation with (mainly) Czech research organisation financed mainly by Czech public funding authorities and fulfilling the requirements within open access model.	"Testing Before Use" & Proof of Concept can currently be supported primarily through the EDIH mechanism, which provides access to SMEs at a discounted price.	Up to 20% of the Karolina supercomputer's computing capacity can be used for commercial (industry) use.
			Pay per use	RENTAL OF COMPUTATIONAL RESOURCES : A) Standard allocation arranged for a specific period with a pre-agreed quota. B) Customised allocation This includes, for		

			example, the exclusive ability to use a pre-agreed number of compute nodes in a pre-determined period of time renting of HPC capacities. CONTRACT RESEARCH : Commercial provision of computational resources for contract research commissioned by an external partner.		
		EuroHPC access	Access allocated to European industrial users, matching their demanding application requirements, according to the principles stated in the EuroHPC JU Council Regulation and the JU's Access Policy. prace-ri.eu/hpc-access/eurohpc-access/		
DISCOVERER	Bulgaria	• Simeon Stoyanov Director Business Development tel. +359 877 080 047 s.stoyanov@sofiatech.bg • Kiril Kirilov Director Operations tel. +359 887 251 709 k.kirilov@sofiatech.bg	**Private–Public collaboration project**	• Project in cooperation with Bulgarian university or research institution (academic partner) • Project manager (PM) is assigned from academic partner.	Free of charge if results are open and published. If the results are owned by the company, the use will be charged according to the pricelist of Discoverer computing services	Up to 20% of the Discoverer supercomputer's computing capacity is open to industry users. A company can get familiar with and test the suitability of Discoverer computing services for the intended purpose through a "Proof-of-Concept", subject to discussion and approval from PetaSC consortium. If interested Simeon Stoyanov (s.stoyanov@sofiatech.bgt) and/or Kiril Kirilov (k.kirilov@sofiatech.bg). NB: Discoverer uses the highest standards of enterprise grade cyber security which will be made available to all our industrial customers.
			Pay per use (upto 20% of Discoverer resource)	RENTAL OF COMPUTATIONAL RESOURCES : A) **Standard (production run) allocation** arranged for a specific period with a pre-agreed quota. B) **Customised allocation** This includes, for example, the exclusive ability to use a pre-agreed number of compute nodes in a pre-determined period of time renting of HPC capacities with various access options, including development of customized clouds solutions. C) **Federated HPC as a services access** is also available via Nimbix Platform D) **Contracted HPC Research**: Commercial provision of computational resources for contract research commissioned by an external partner.	A company can get familiar with and benchmark the suitability of Discoverer computing services for the intended purpose free-of-charge benchmark project. • The company project is created with limited user accounts. • Project will have CPU and data storage resources for testing purposes. • Expertise support will be available to get started with the Discoverer usage. • The benchmark project is available for a limited time and the results should be publicly available (thus the project should not generate or use proprietary data) After the testing period the company can continue Discoverer usage by making a contract with PetaSC, Bulgaria for the Discover.	

			EuroHPC access	Access to the EuroHPC share (35% of the total resource) of Discoverer is governed by the EuroHPC JU Access Policy. European calls available at https://eurohpc-ju.europa.eu/access-our-supercomputers/eurohpc-access-calls_en	Benchmarking, Development, Regular access calls available for all R&I projects. Fast-track industrial access available.	Industrial users are eligible to apply to EuroHPC calls under certain conditions. Please check calls details and EuroHPC JU Access Policy.
DEUCALION	Portugal	They offer three levels of common (national) technical support for users: • **First level support** (info, access, login, etc.). • **Second level support** (e.g., missing software on cluster, problems with compiling, scalability). • **Third level support** is intended for specific research domain, industrial sector or HPC software. Organized with experts within the National Competence Center. Users can email industry@macc.fccn.pt	**Open Research and Innovation (R&I) calls**	Regular calls organized by FCT via the Portuguese Advanced Computing Network (RNCA) are promoted to support technologically advanced computing projects in all scientific domains.	Calls offer 3 different access types: A0 – Experimental Access, for 1st time users and "test before use". A1 – Development Access, for benchmarking, re-factoring, "proof of concept"; A2 – Regular Access, for experienced users.	Industrial users with open access R&I projects may apply to regular calls.
			Commercial and non-commercial access	Potential users can request access filling the form available in the RNCA site. Costs may apply.	Experimental access to industry can be granted through one of the Portuguese HPC Centres that are part of the EuroCC project. Additionally, the Attract-DIH (https://attract.inesctec.pt/) offers several possibilities for supporting the design, development and validation of new products and services that benefit from AI or HPC.	Industrial users may request access filling the form available at the RNCA site. As FCT controls access to the national share of Deucalion, each company signs a protocol with FCT that may include payment for the resources. Calls limitations do not apply, and project results are owned by the company.
			EuroHPC access	Access to the EuroHPC share of Deucalion governed by the EuroHPC JU Access Policy. European calls available at https://eurohpc-ju.europa.eu/access-our-supercomputers/eurohpc-access-calls_en	Benchmarking, Development, Regular and Extreme access calls available for all R&I projects. Fast-track industrial access available.	Industrial users are eligible to apply to EuroHPC calls under certain conditions. Please check calls details and EuroHPC JU Access Policy.

Table: summary of the industry access information for the JU supercomputers

Price list for commercial use of HPC resources (at date June 2023)

- ## LEONARDO

Prices not available publicly, contact the Leonardo reference people for specific discussions.

- ## LUMI Computing Services

Tableau 1: Service price list - LUMI Calculation capacity

Service	Euroa, VAT 0%
LUMI computing project base package	1.000,00 €
LUMI-C - computing nodes with CPU-processors (AMD Milan) - 1 CPU-node hour (node-h) equals to 128 CPU-core hours (core-h)	0,57 € / CPU-node-hour
LUMI-G - GPU (AMD MI250) graphics processing units	0,535 € / GPU-hour
LUMI-P - Lustre parallel file system	0,005 € / TiB/h
LUMI-F - Flash memory storage	0,05 € / TiB/h
LUMI-O - LUMI-O – CEPH object storage (Service not available yet)	0,0025 € / TiB/h

- ## MARENOSTRUM 5
Industrial usage not possible on the national share of MareNostrum5

- ## MELUXINA
Prices not available publicly, contact the MELUXINA reference people for specific discussions.

- ## HPC Vega resources

Tableau 2: Price list for commercial use of HPC Vega resources

Service	Price with VAT	Price without VAT
Administration, preparation of the working environment, one hour of assistance from development engineer, use of the capacity of the login node	1000 EUR per project annual flat rate, other work according to the price list	819,67 €
Default is 100 GB on LCST system and 20GB on HPST system up to three users on one project	Free, all downstream users according to the price list	0
CPU partition	1,00 EUR/node hour	0,82 €
LM partition	1,50 EUR/node hour	1,23 €
GPU partition	5,00 EUR/node hour	4,10 €
LCST system, additionally allocated 100 GB (at least 10 GB)	0,5 EUR per month for 100 GB	0,41 €
HPST system, additionally allocated 100 GB (at least 10 GB)	10 EUR per month for 100 GB	8,20 €
Additional user of the system	5 EUR/month	4,10 €
Work of a development engineer, technical assistance	75 EUR/hour	61,48 €

- ## KAROLINA

Price for the rental of computing nodes

Table 3: Price list for commercial use of - Karolina

System of the Provider	Price in CZK without VAT for 1 node-hour
Karolina – CPU	54,85
Karolina - GPU	455,99
Karolina - Data Analytics	2907,05

- ## DEUCALION

Table 4: Price list for commercial use of - Deucalion

Industrial User	Units	Price
Support companies in exploiting HPC infrastructures	Person/day	305€
Mentoring and coaching	Person/day	305€
Consulting services to validate implementation of projects to run in HPC infrastructures	Person/day	305€
Consulting services for optimization of tasks to run in HPC infrastructures	Person/day	305€
Consulting services in the development of projects to run in HPC infrastructures	Person/day	305€
HPC processing	Core.hour	0,0123€
GPU processing	Card_GPU.hour	0,18€
HPC Storage	Tera.Bytes.month	6,5€

- ## DISCOVERER

Table 5: Price list for commercial use of Discoverer

Industrial User	Units	Price
Support companies in exploiting HPC infrastructures, Mentoring and coaching,	Person/day	50€
Consulting services to validate implementation of projects to run in HPC infrastructures, optimization of tasks to run in HPC infrastructures and/or for the development of projects to run in HPC infrastructures	Person/hour	80€
HPC CPU processing (price depends on usage profile and task priority)	core hour	0,012-0,04€
HPC Storage	TB/month	6 €

Technical specifications of the JU supercomputers

To see all details regarding the ranking, the technical specifications of each supercomputer, have a look at: https://eurohpc-ju.europa.eu/supercomputers/our-supercomputers_en

References

- JU website :https://eurohpc-ju.europa.eu/supercomputers/our-supercomputers_en
- LUMI website : https://www.csc.fi/en/solutions-for-business-use-of-computing-services-and-pricing
- Marenostrum website : https://www.bsc.es/marenostrum/access-to-supercomputing-resources
- LEONARDO website : https://leonardo-supercomputer.cineca.eu/
- Meluxina documentation website : https://docs.lxp.lu/
- VEGA documentation website : https://doc.vega.izum.si/gtu/, https://www.sling.si/en/competence-centre/national-competence-centre/, http://www.max-centre.eu/services/services-industry
- KAROLINA documentation website : https://docs.it4i.cz/general/applying-for-resources/
- DISCOVERER access policy documentation : https://sofiatech.bg/wp-content/uploads/2021/09/discoverer-access-policy.pdf
- DEUCALION/MACC website : https://macc.fccn.pt/use