

Handout 2

Current plans of shared use computers and beneficiary pays

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Provisions for services provided Head Office for Information Systems and Cybersecurity of RIKEN

(New regulation)

Provisions for services provided Head Office for Information Systems and Cybersecurity of RIKEN

Basic idea

Handling of usage fees for software licenses managed by the Information System Division (Notice at July 3, 2018)

- Usage support of software license

Target expansion

Handling of usage fees related to services provided by the Information System Division (Notice)

(will be revised)

- Usage support of software license
- Usage support of computers
- Others (Large format printer)

The price of usage fees

Fees for shared use computer will be determined by the Notice.

Resources of shared use computers in FY2020

- HOKUSAI BigWaterfall(BW)(2017/10-2022/9)
 - BW-MPC: 840 nodes
 - CPU: Xeon Gold 6148(40 cores/node)
 - 2.58 PFlops、33,600 core
 - Memory: 96GB
 - Shared disk: 5PB
 - テープ: 8PB
- HOKUSAI SailingShip(SS)(2020/6-2026/5)
 - CPU farm: 440 nodes
 - CPU: Xeon Platinum 8260(48 cores/node)
 - 1.62 PFlops、21,120 core、42,240 v(virtual)CPU
 - Available 46 core/node (2 core for MCP hypervisor)
 - Memory: 384GB
 - Data farm(shared disk): 30PB
 - Private Infrastructure as a Service(PlaaS)
 - Mirantis Cloud Platform(MCP)
 - Commercial distribution of OpenStack that can provide VM, container and bare metal environment

From “handling policy on beneficiary pays of ICT services”

- Settings of user fees
 - Up to 15% of total contract amount (about 100 million JPY)
 - Total contract amount includes hardware lease, maintenance and support, etc.
 - Not includes bills for building and electricity.
 - The upper limit is for use of computers and storage and not individually but as a whole.
 - Expecting to be lower than this because of subsidization and unused resources.
 - A usage fee will be introduced after starting regular operation of SS.
 - SS will be operated as test operation in the first half of FY2020, then regular operation will start after October FY2020.
 - The usage fee will also introduced for BW at the same timing.
 - Eliminate the review process and just check the usage content.
- Subsidization
 - Young scientist and exploratory research and promoting the strategy of RIKEN
 - Cooperation in operation and user support
- Easing measures
 - for existing users using large-scale resources
 - for existing data on the storage of HOKUSAI BW

How to use BW and fees

- In FY2020, the project will be reviewed as before.
 - Usage by batch job
 - Quick Use and General Use
 - In General Use, the allocated resources will be adjusted as if half of the allocated core hour was consumed at the beginning of the second half.
 - Usage fee will be introduced from October 2020 for the part of the use.
 - Usage fee will be set for priority job execution.
 - Charge for core hour
 - 1000 JPY per 1 core per 1 year (40,000 JPY per 1 node per 1 year)
 - A project for priority execution will be created and controlled for each project.
- Usage of BW After FY2021
 - In principle, it is subject to the usage fee (the price will be determined in the future), and no project review will be performed.

How to use SS and fees

- Lend tenants and charge for the amount of used computing resources
 - For pool type, resources are always reserved.
 - For ondemand type, resources are reserved when needed.
 - 4,000 JPY per 2vCPU per year.
 - In SS, a physical core is allocated by 2v(virtual)CPU.
 - Fee for global IP address in the future.

Physical core	vCPU	Memory(GB)	JPY/month	JPY/year
1	2	8	333	4,000
2	4	16	667	8,000
4	8	32	1,333	16,000
8	16	64	2,667	32,000
16	32	128	5,333	64,000
32	64	256	10,667	128,000
46	92	368	15,333	184,000

How to use storage and fees

- Fees for storage

- Fees for allocated disk area is 2,000 JPY per 1TB per year

- For existing data in BW allocated by the end of FY2019
 - From October 2020 to March 2021, 500 JPY per 1TB per half year
 - After FY2021, 2,000 JPY per 1TB per year
 - Fees for /home area is free.
 - Possible treatment of non-payment data
 - pay by center, move to tape, or no access

- Tapes are not subject to fees for long-term storage

- Removed from user services in the future and operated as cold media
 - Data storage service will move to disk
 - Possibility of cold media procurement when replacing BW

- Preparing online storage (Box) separately

- Assumed to be used for writing papers and general work
 - Assuming non-large data

Usage fee table and estimated amount

	JPY/(core・year)	JPY/(node・year)	Note
SS Tenant(Pool type)	4,000	184,000	for the secured resources
SS Tenant(Ondemand type)	4,000	184,000	for the amount actually used
BW Batch(Priority use)	1,000	40,000	for priority execution
	JPY/(TB・month)	JPY/(TB・year)	
Storage	167	2,000	
Storage(Existing BW data)	167	2,000	half a year 500 yen in FY2020
Tape	0	0	will be cold storage

Fees for BW after FY2021 will be discussed in the future.

	Paid use(node)	JPY/node	Subtotal(JPY)
SS (440 node)	200	184,000	36,800,000
BW (840 node)	400	40,000	16,000,000
	Paid use(PB)	JPY/TB	
SS Disk (30PB)	15	2,000	30,000,000
BW Disk (5PB)	2	2,000	4,000,000
Total			82,800,000

It is assumed that “data for use and application” will not be charged.

Payment method for usage fees (tentative)

- Plan to lower obstacles to start usage
 - The first small amount is free or available without confirmation.
- Unit of use
 - For pool type tenant use and storage, purchase in advance for the usage period.
 - Usage period is basically monthly
 - For ondemand type tenant use and batch use, core time is purchased in advance.
 - Set the minimum unit of core time (about tens of thousands of yen)
- Payment method
 - Purchase resources at any time and transfer the budget about once every three months
 - The end of the quarter is possible, but adjustments are needed at the end of the fiscal year.
 - Shared use computer point (token)
 - First you purchase points, then purchase resources with points.
 - Purchased points are valid until the end of the fiscal year.

APPENDIX

Questions from the Board of Directors regarding resource allocation of computing resources

- What is the optimization of the utilization efficiency of computing and data processing resources for RIKEN as a whole?
 - What about the ongoing introduction of the current supercomputer system?
 - Is it possible to cooperate with K computer, post K computer, and AIP system (RAIDEN)?
 - Once all the options have been raised to the table, please discuss them with experts.
- Should the supercomputer system be used under the proper usage burden, like other laboratory equipment?
 - If there is no appropriate usage burden, is it used in a casual manner?
 - Is there a difference in the research environment that simulation research can be done for free?

Proposal to the ideal way of supercomputer and usage support environment in RIKEN

- An opinion exchange meeting was held by 15 interested persons from 11 centers and a proposal was prepared on August 1, 2018.
 - Attached to handouts for FY2018 2nd IT strategic planning Committee (only Japanese)
- 1. Strategic role of supercomputers and operational system to realize them
 - Research support infrastructure for computation and data processing resources is an important research environment for RIKEN
- 2. Importance of data infrastructure and human resource development to connect calculation and experiment
 - It is important not only to perform processing only for conventional calculations, but also to deal with fields where collaboration with experiments will become important in the future.
- 3. Consideration of effective usage fee
 - Expected to have a certain effect on use optimization, and concerns about the effect of raising the threshold for using supercomputers and increased operation and management costs
- 4. Construction of RIKEN-wide computer-based network
 - Promoting an information sharing system and human exchange will lead to further revitalization of research activities and maximization of research results.

FY2018 2nd IT strategic planning Committee

- Held at October 10th 2018
 - <http://common.riken.jp/icom2/index.html> (only Japanese)
- A new HPC system will be renovated to change the paradigm instead of the existing flow.
- Definition of **RIKEN Data Science Infrastructure**
 - Focuses on data processing and does not follow various performance peaks like supercomputers.
 - Scale-out architecture, maintain the performance and capacity of data processing and data IO for at least each domain, and the environment should be flexible.
- Specifically,
 - The system is a data-oriented (mainly data processing) system with a focus on large-scale data processing.
 - Prepare computing resources required for large-scale data processing.
 - The mainstay of storage resources and data processing resources will be located in RIKEN.
 - Make public clouds available positively.
 - The system is subject to usage fee.