

Outline of Fugaku Project Call

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Fugaku Project Call

- Unique opportunity to access one of the world's fastest supercomputer (2nd)
- Amongst the first in the world to be granted regular access to Japan's Fugaku supercomputer
- Regular annual call for projects
- Access to specialized hardware not available in Singapore
- Provided by an MoU with Japan's Research Organization for Information Science and Technology (RIST)



About NSCC

National Supercomputing Centre (NSCC) Singapore

A National Research Infrastructure providing supercomputing solutions for all

Vision

Democratising Access to
Supercomputing



Support Singapore's
R&D Initiatives



Attract Industrial
Research Collaborations



Enhance Singapore's
Research Capabilities

NSCC.SG

National Supercomputing Centre (NSCC) Singapore

NATIONAL
RESEARCH
FOUNDATION
PRIME MINISTER'S OFFICE
SINGAPORE

A **National Research Infrastructure** funded by Singapore's **National Research Foundation (NRF)** providing supercomputing resources as a horizontal enabling platform of Singapore's Research, Innovation and Enterprise (RIE) ecosystem



National-level resource open to **all national research initiatives** at Institutes of Higher Learning, Research Institutes and the industry.



High speed networks for HPC and research - locally and globally.



Singapore's **first national petascale facility**.

Growing the Local HPC Community

Some of Our Partners



eg. Edge supercomputing for Singapore healthcare clusters

SingHealth-NSCC-NVIDIA partnership to support advanced healthcare research (MAR 2022)

To develop a new supercomputer and access to advanced software, training and high-performance computing (HPC)-enabled pre-trained AI models to significantly accelerate large-scale and complex healthcare research.

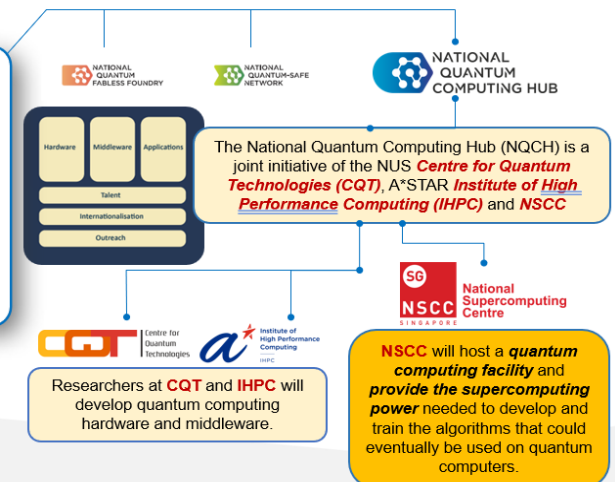
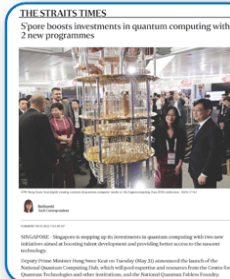


National AI Healthcare Initiatives get boost from new national supercomputer resource at NUHS (DEC 2021)

NSCC and National University Health System (NUHS) will develop a supercomputing infrastructure, named "PRESCIENCE", which will be used to train AI models that predict patient health trajectories and recommends when a patient's condition may deteriorate.

Growing the Local HPC Community

Singapore HPC and quantum computing



Superconnected – Locally and Globally

LOCALLY

Ultra High-speed InfiniBand for Data Transfers

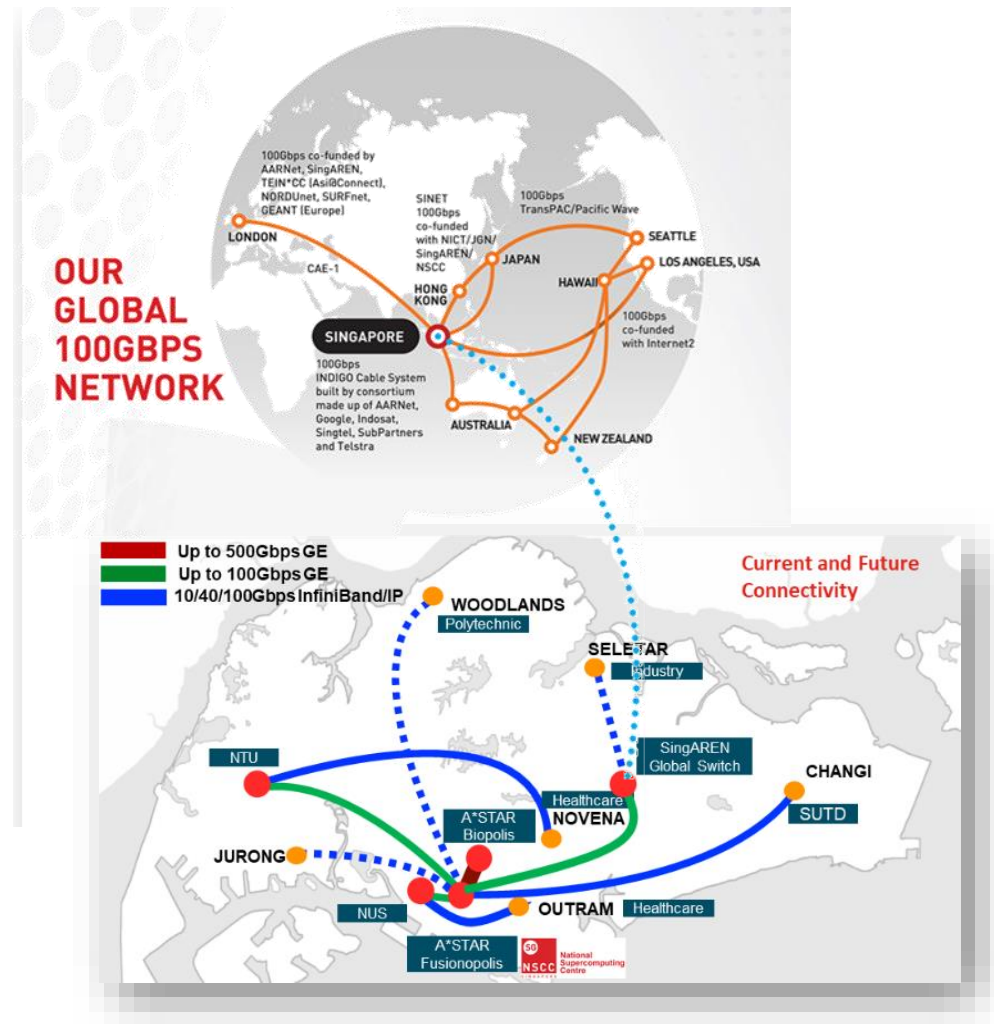
Leveraging long-haul InfiniBand switches, NSCC is able to deliver high-bandwidth and low-latency between different geographic locations in Singapore. Our connections are done in collaboration with the *Singapore Advanced Research and Education Network (SingAREN)* and *SingAREN-Lightwave Internet Exchange (SLIX)*. Researchers using ASPIRE1 at locations islandwide experience the same connectivity and speed as if they were at NSCC itself!

GLOBALLY

Linking Singapore and the region with the rest of the world

Singapore as
Strategic HPC and Advanced Networking Hub
for the region.

To connect Singapore to **Global Research** and
Top HPC Centres worldwide.



Key connections:

- Agency for Science, Technology and Research (A*STAR)
- National University of Singapore (NUS)
- Nanyang Technological University (NTU)
- Singapore University of Technology and Design (SUTD)

Enhances Available Compute Resources

CURRENT



1 PFLOPS System

- 1,288 nodes (dual socket, 12 cores/CPU ES-2690v3)
- 128GB DDR4 RAM/node
- 10 large memory nodes (1x6TB, 4x2TB, 5x1TB)

Accelerator Nodes

- 128 nodes with Tesla K40 GPUs

13PB Storage

- GPFS & Lustre File Systems
- I/O bandwidth up to 500GB/s

Infiniband Interconnection

- EDR (100Gbps) Fat Tree with full bisectional bandwidth within cluster

Add-on Systems (ASPIRE 1+)

- AI.Platform (6 x DGX-1)
- 1,000 cores HTC System
- *Koppen* - 160 TFLOPS Cray XC-50, Climate System

Fugaku Supercomputer in Kobe Riken

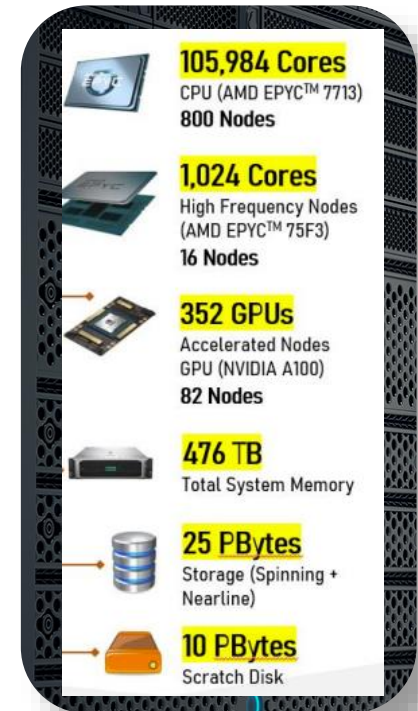
- 1M Node Hours



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UPCOMING



ASPIRE 2A

- Aggregate ~10PFLOPS raw compute power
- 8x more powerful than current ASPIRE1

Overview of Fugaku Project Call

The National Supercomputing Centre Singapore (NSCC) has opened a call for proposals to access Japan's flagship supercomputer, Fugaku, to Singapore's researchers with **Singapore residency status** under an agreement between NSCC and the Research Organization for Information Science and Technology of Japan (RIST).

Eligibility

- The Principal Investigator and members of the project must belong to a Singapore entity with **Singapore residency status**.
- Persons belonging to private companies cannot be the Project Representative or members of the project, since this call targets projects for **academic purposes**

Details of the Call

Available Resources:

RIKEN R-CCS Supercomputer Fugaku.

Computational Resources:

1M Node-Hours[^] in total (or up to ~400,000 Node-Hours per project), whichever is achieved first.

Storage Resources:

Fugaku local storage will be allocated by default, without being input in the system. Information is located in the resource information page. The storage area can be increased gradually per request after the project starts. The data will be retained for one month after the project ends. The projects can also request to use the HPCI Shared Storage after they are awarded.

Number of Projects:

Approval of up to a maximum of **5 projects** (or 1M Node-Hours in total), whichever is achieved first.

Application Period:

One call per year.

Validity of Project Period:

Up to one year.

Usage Fee:

None.

Submissions:

The same proposal cannot be submitted by the same researcher more than once.

Announcement of Awards:

The results of the project call will be announced once the screening process at NSCC and final approval by RIST is completed. (Estimated to be within 3 month after the end of the project call.)

Submission of User Report:

A **user report** must be submitted within sixty days after the project is completed. The reports will be published in the NSCC and HPCI Portal site.

[^]1 Node-Hour on the Fugaku is 48 core hours

Important Timeline

Nov
2022

Jan
2023

Feb
2023

Mar
2023

Apr
2023

➤ **1 – 30 Nov:**
Application
Period

➤ **End-Jan:**
Notification
of Results
for 1st
Round of
Review via
Email

➤ **Early-Feb:**
Submission
to HPCI
Online
Application
System

➤ **End-Feb:**
Final
Notification
of Results
by RIST

➤ Onboarding
to Fugaku

➤ Access to
Fugaku

Procedures for Application

The Project Representative should submit the application.

1. Download the word format of the application form.
2. Submit the completed application form to projects-admin@nscc.sg with the email title “*Application: Call for Proposals for Fugaku Projects*”.
3. The NSCC Project Screening Committee will review the applications. After the application has passed the preliminary review, RIST will notify the Project Representatives to register the project information in the HPCI Online Application System⁽⁾.
4. Follow the instructions by RIST to register the project information in the HPCI Online Application System.
5. After the selection, the procedures for utilization should be followed via the HPCI Online Application System.

Refer to the [Proposal Preparation Instructions](#) for detailed instructions on submitting the application.

Useful Links

- Website:
<https://www.nscg.sg/call-for-proposals-for-fugaku-projects-via-national-supercomputing-centre-singapore/>
- Contact:
projects-admin@nscg.sg

Please submit your applications by **30 Nov 2022, 2359 hrs (GMT+8)**.



SupercomputingAsia 2023 (SCA23)

Sustainable Supercomputing for a Greener Future

Co-organised by supercomputing centres from Australia, Japan, Singapore, and Thailand, and anchored by the National Supercomputing Centre (NSCC) Singapore, SupercomputingAsia (SCA) is an annual conference that encompasses an umbrella of notable supercomputing and allied events in Asia to promote a vibrant and relevant HPC ecosystem in Asia.

For the first time ever, the International Conference on High Performance Computing in the Asia-Pacific Region (HPC Asia), an international conference series for the Asia Pacific region on HPC technologies that fosters exchange of ideas, research results and case studies related to all issues of HPC, will be co-located with SCA23 and held from **27 February to 2 March 2023** in Singapore. Mark your calendars and join us then!



www.sc-asia.org

Thank You