Supercomputing Plans of Korea

Jysoo Lee

Director General
National Institute of Supercomputing and Networking
Korea Institute of Science and Technology Information

2013. 9. 30
Supercomputing Act
National Supercomputing Promotion Act - Summary

Title

- “Utilization and Promotion of National Supercomputing”
- **Enacted**: 2011. 6. 7, **Implemented**: 2011. 12. 8

Goal

- Contributing to the enhancement of people’s quality of life and the national economic development... through the efficient implementation and systematic management of national supercomputing infrastructure

Key Actions

- Establishment and execution of plan for the promotion of national supercomputing ecosystem
  - Master Plan (5 years), Implementation Plan (1 year)

- National Supercomputing Committee
  - Chair: Secretary of Ministry of Science, ICT and Future Planning

- National Supercomputing Center
  - Support the planning and execution of national plan
Mission (Article 9, Clause 1)
- Support Promotion and Utilization of National Supercomputing

Function (Article 9, Clause 3)
- Securing and operating world-class resource
- Managing collaborative use of resource
- Carrying out R&D on supercomputing
- Providing education, training, and technical support
- Managing and operating advanced research network
- Supporting establishment and execution of the national plan

Inauguration Ceremony (2012. 12)
- US: NCSA, Calit2 (NSF), NCCS, LBNL (DOE)
- Japan: AICS, CCS
- China: NSCC-TJ, CNIC, SSC
- Europe: JSC, CSC
National Supercomputing Plan
3 Strategies (or Areas)

- Expand adoption
- Efficient infrastructure (including human resource)
- R&D on core technology (including industry)

**Vision**

Top 7 Nation for Supercomputing

- Expand the use of supercomputing through the creation of new demand
- Establish Top 10 supercomputing service infrastructure
- Secure independent supercomputing development capacity
Expand the use of supercomputing through the creation of new demand

- Promote national research and development using national supercomputing
- Strengthen industry innovation by using national supercomputing
- Expand public and private service based on supercomputing
- Expand public participatory activities to promote the understanding of supercomputing

Establish global top 10 supercomputing service infrastructure

- Secure supercomputing resource in response to future demand
- Establish efficient national supercomputing service system
- Train demand-based experts for supercomputing ecosystem

Secure independent supercomputing development capacity and foster the basis for industrialization

- Secure independent development capacity for supercomputing system
- Expand R&D of original technology for the next generation supercomputing development
- Foster industry basis related to supercomputing
Supercomputing Infrastructure
KSCA (Korea Supercomputing Centers Alliance)

- KSCA was established in 2001 for collaborating for supercomputer operation, sharing of their resources, and developing operation technology
- 20 Members (university, research institute, government, industry)
- Main KSCA member have been joined to PLSI project since 2007 for sharing their resources and vitalizing regional HPC ecosystem
Shared Infrastructure

- 11 Participants: KISTI, PKNU, PNU, UNIST, GIST, KIAS, ...
- Resource: 21 Systems, 8764 CPU, 102 TF (84 TF from KISTI)
- Service: Integrated System, User Portal, Support, Training

✓ Serving as Pilot National Supercomputing Infrastructure
Secure supercomputing resource for responding to future demand
- Construct systematic resource demand forecast and management system
- Secure world-class supercomputing resource
- Expand research network resource for supporting supercomputing service

Establish efficient national supercomputing service system
- Three layer architecture: national – specialized – interconnection
  - National center (NISN): world-class resource, support large scale national strategic projects, national service infrastructure leader
  - Specialized center: medium scale resource, support specific domain (or ministry), regional service leader
  - Interconnection center: institute-wide resource, support local demands, institute service leader
Super Korea!

jysoo@kisti.re.kr