

HPC Program Background

CBIIT HPC Strategy

With a focus on providing robust and reliable solutions enabling NCI investigators to utilize HPC in their efforts, the CBIIT HPC strategy is focused on these interconnected areas:

- Working closely with investigators across NCI to enable broader utilization of HPC through HPC training, education and reliable system access
- Guided by investigator challenges and opportunities, provide support and consulting for HPC needs as well as development, optimization and/or validation of HPC applications useful to cancer research and clinical applications
- Effective data management and information delivery solutions in support of HPC applications used in cancer research
- Exploration and evaluation of emerging HPC technologies for use in cancer research, information delivery and data center operations
- Developing essential partnerships within NCI, NIH, HHS, government, academically, commercially, nationally and internationally fostering the expanded use of HPC in cancer research
- Develop and deliver services supporting current and future HPC needs of NCI investigators
- Continual incorporation of investigator input to improve and evolve HPC services, capabilities and opportunities

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Long Range Guiding Objectives for HPC in Cancer Research

With guidance and insight provided by the cancer research and clinical community within NCI, deliver robust, reliable HPC capabilities and support that:

- Enable broader understanding of cancer, cancer system dynamics and cancer characterizations
- Enable rapid identification of potential cancer risks and presence of cancer in individuals
- Enable rapid determination of optimal treatment options for patients
- Expand treatment options through improved discovery and rapid, reliable validation
- Foster computational integration and cooperation across the global cancer research community
- Enable transfer and flow of HPC technologies between NCI and other stakeholders
- Enable NCI to take full advantage of computational advances to accelerate cancer research

Foundations for Successful HPC in Cancer Research and Clinical Development

- Useful
 - Performing needed functions and delivering key capabilities
 - Enabling technologies can be eventually used in clinical application
- Reliable
 - Assuring new computing technologies and applications are functionally reliable
 - Assuring technologies and applications are validated and verified
 - Assuring appropriate reproducibility of delivered solutions over time
- Adaptive
 - Exploring new and emerging technologies and applications for use in cancer research and translation
 - Utilizing multiple sources of input (internal and external) to improve overall HPC capabilities
- Portable
 - Enabling intellectual investments to transition across emerging and evolving technology platforms
- Efficient
 - Providing solutions in as rapid as possible yet in a cost-effective manner