Charge of the High-End Computing Revitalization Task Force

Coordinated through the National Science and Technology Council, the Task Force is charged with developing a plan to guide future Federal investments in High End Computing (HEC). Based on the needs of important Federally-funded applications of HEC, this plan will lay out an overall strategy for these investments and will include the following areas as coordinated subtasks:

1. High End Computing Core Technologies R&D: This subtask will produce a five-year roadmap, beginning with FY 2005, for core technology development that includes:
   - Identification of key technologies that must be advanced to strengthen the foundation for developing new generations of HEC systems;
   - Coordinated multi-agency R&D plans that lay out a set of alternative programs, as well as identification of those agencies that are best suited to carry out each part of the program based on expertise, facilities, or technical priority;
   - Discussion of approaches to planning, selecting participants, and carrying out the research, development, and engineering, in order to enable both revolutionary and evolutionary advances of technology, as well as to enable diffusion of advances in core technologies into commercial industry.

2. Federal High End Computing Capability, Capacity, and Accessibility: This subtask will produce a five-year roadmap, beginning with FY 2005, that includes:
   - Sets of alternative plans for HEC resources that would help to reduce capability or capacity gaps in addressing important applications of HEC;
   - Performance targets for proposed HEC system alternatives that are linked to application domain requirements and user needs;
   - Discussion of the types of system design specifications needed to effectively meet various application domain requirements;
   - Discussion of resources, tools, and techniques needed to minimize “time to solution” by users of HEC systems;
   - Accessibility approaches to make HEC resources available to Federal and non-Federal user communities, as appropriate, beyond the Federal agency that funds or hosts the resources.

3. Federal Procurement of HEC Systems: This subtask will produce findings and recommendations that include:
   - Identification of a strategy for developing practical performance measures for system procurement that correlate well with realized performance of actual applications;
   - Recommended methods for deriving system performance targets from actual or projected application requirements or other user needs;
   - Discussion of total cost of ownership beyond procurement cost, including space, maintenance, utilities, upgradeability, etc.;
   - Recommendations for improving processes for acquiring HEC systems based on the above issues.

4. Integration of HEC Strategies: This subtask will produce a five-year roadmap, beginning with FY 2005, for the Federal role in HEC R&D, utilization, and procurement. The roadmap will be based on the needs of important Federally-funded applications of HEC and will include an overall strategy that incorporates appropriate roles for government, academia, and the private sector. This subtask will be closely coordinated with, and based on, the other subtasks.