

TITLE 15--COMMERCE AND TRADE

CHAPTER 81--HIGH-PERFORMANCE COMPUTING

SUBCHAPTER I--HIGH-PERFORMANCE COMPUTING AND THE NATIONAL RESEARCH AND
EDUCATION NETWORK RESEARCH AND DEVELOPMENT

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Sec. 5511. National High-Performance Computing Program

(a) National High-Performance Computing Program

(1) The President shall implement a National High-Performance Computing Program, which shall--

~~(A) establish the goals and priorities for Federal high-performance computing research, development, networking, and other activities; and~~

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~~(B) provide for interagency coordination of Federal high-performance computing research, development, networking, and other activities undertaken pursuant to the Program.~~

A) provide for long-term basic and applied research on high - performance computing ;

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(B) provide for research and development on, and demonstration of, technologies to advance the capacity and capabilities of high - performance computing and networking systems;

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(C) provide for sustained access by the research community in the United States to high -performance computing systems that are among the most advanced in the world in terms of performance in solving scientific and engineering problems, including provision for technical support for users of such systems;

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(D) provide for efforts to increase software availability, productivity, capability, security, portability, and reliability;

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(E) provide for high -performance networks, including experimental testbed networks, to enable research and development on, and demonstration of, advanced applications enabled by such networks;

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(F) provide for computational science and engineering research on mathematical modeling and algorithms for applications in all fields of science and engineering;

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(G) provide for the technical support of, and research and development on, high -performance computing systems and software required to address Grand Challenges;

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(H) provide for educating and training additional undergraduate and graduate students in software engineering, computer science, computer and network security, applied mathematics, library and information science, and computational science; and

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(I) provide for improving the security of computing and networking systems, including Federal systems, including research required to establish security standards and practices for these systems.'

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~~(2) The Program shall--~~

~~(A) provide for the development of technologies to advance the capacity and capabilities of the Internet;~~

~~(B) provide for high performance testbed networks to enable the research, development, and demonstration of advanced networking technologies and to develop and demonstrate advanced applications made possible by the existence of such testbed networks;~~

~~(C) promote connectivity among computer networks of Federal agencies and departments;~~

~~(D) provide for efforts to increase software availability, productivity, capability, portability, and reliability;~~

~~(E) provide for improved dissemination of Federal agency data and electronic information;~~

~~(F) provide for acceleration of the development of high-performance computing systems, subsystems, and associated software;~~

~~(G) provide for the technical support and research and development of high-performance computing software and hardware needed to address Grand Challenges;~~

~~(H) provide for educating and training additional undergraduate and graduate students in software engineering, computer science, library and information science, and computational science; and~~

~~(I) provide--~~

~~(i) for the security requirements, policies, and standards necessary to protect Federal research computer networks and information resources accessible through Federal research computer networks, including research required to establish security standards for high-performance computing systems and networks; and~~

~~(ii) that agencies and departments identified in the annual report submitted under paragraph (3)(A) shall define and implement a security plan consistent with the Program and with applicable law.~~

~~(3) The Director shall--~~

~~(A) establish the goals and priorities for Federal high - performance computing research, development, networking, and other activities;~~

~~(B) establish Program Component Areas that implement the goals established under subparagraph (A), and identify the Grand Challenges that the Program should address;~~

~~(C) provide for interagency coordination of Federal high - performance computing research, development, networking, and other activities undertaken pursuant to the Program;~~

~~(D) submit to the Congress an annual report, along with the President's annual budget request, describing the implementation of the Program;~~

~~(E) develop and maintain a research, development, and deployment roadmap for the provision of high -performance computing systems under paragraph (1)(C);~~

~~(B) provide for interagency coordination of the Program; and~~

~~(F) consult with academic, State, industry, and other appropriate groups conducting research on and using high-performance computing.~~

~~(4) The annual report submitted under paragraph (3)(A) shall--~~

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(2) (D) shall--

~~(A) include a detailed description of the goals and priorities established by the President for the Program;~~

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(A) provide a detailed description of the Program Component Areas, including a description of any changes in the definition of or activities under the Program Component Areas from the preceding report, and the reasons for such changes, and a description of Grand Challenges supported under the Program;

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(B) set forth the relevant programs and activities, for the fiscal year with respect to which the budget submission applies, of each Federal agency and department, including--

- (i) the Department of Agriculture;
- (ii) the Department of Commerce;
- (iii) the Department of Defense;
- (iv) the Department of Education;
- (v) the Department of Energy;
- (vi) the Department of Health and Human Services;
- (vii) the Department of the Interior;
- (viii) the Environmental Protection Agency;
- (ix) the National Aeronautics and Space Administration;
- (x) the National Science Foundation; and
- (xi) such other agencies and departments as the President

or

the Director considers appropriate;

(C) describe the levels of Federal funding for the fiscal year during which such report is submitted, and the levels proposed for the fiscal year with respect to which the budget submission

applies, for ~~specific activities, including education, research, hardware and software development, and support for the establishment of the Network;~~ each Program Component Area;

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(D) describe the levels of Federal funding for each agency and department participating in the Program and for each Program Component Area for the fiscal year during which such report is submitted, and the levels proposed for the fiscal year with respect to which the budget submission ~~applies;~~ applies; and;

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~~(E) include the report of the Secretary of Energy required by section 5523(d) of this title; and~~

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(F) include an analysis of the progress made toward achieving the goals and priorities established for the Program and the extent to which the Program incorporates the recommendations of the advisory committee established under subsection (b).

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~~(b) Advisory committee~~

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~~The President shall establish an advisory committee on high-performance computing consisting of non-Federal members, including representatives of the research, education, and library communities, network providers, and industry, who are specially qualified to provide the Director with advice and information on high-performance computing. The recommendations of the advisory committee shall be considered in reviewing and revising the Program. The advisory committee shall provide~~

~~the Director with an independent assessment of--~~

- ~~(1) progress made in implementing the Program;~~

- ~~(2) the need to revise the Program;~~
- ~~(3) the balance between the components of the Program;~~
- ~~(4) whether the research and development undertaken pursuant to the Program is helping to maintain United States leadership in computing technology; and~~
- ~~(5) other issues identified by the Director.~~

(b) Advisory Committee-

(1) The President shall establish an advisory committee on high -performance computing consisting of non-Federal members, including representatives of the research, education, and library communities, network providers, and industry, who are specially qualified to provide the Director with advice and information on high -performance computing . The recommendations of the advisory committee shall be considered in reviewing and revising the Program. The advisory committee shall provide the Director with an independent assessment of--

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(A) progress made in implementing the Program;

(B) the need to revise the Program;

(C) the balance between the components of the Program, including funding levels for the Program Component Areas;

(D) whether the research and development undertaken pursuant to the Program is helping to maintain United States leadership in high -performance computing and networking technology; and

(E) other issues identified by the Director.

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(2) In addition to the duties outlined in paragraph (1), the advisory committee shall conduct periodic evaluations of the funding, management, coordination, implementation, and activities of the Program, and shall report not less frequently than once every two fiscal years to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on its findings and recommendations. The first report shall be due within one year after the date of enactment of this paragraph.

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(3) Section 14 of the Federal Advisory Committee Act shall not apply to the advisory committee established by this subsection.

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(c) Office of Management and Budget

(1) Each Federal agency and department participating in the Program shall, as part of its annual request for appropriations to the Office of Management and Budget, submit a report to the Office of Management and Budget which--

(A) identifies each element of its high-performance computing activities which contributes directly to the ~~Program or Program Component Areas~~ or benefits from the Program; and

(B) states the portion of its request for appropriations that is allocated to each such element.

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(2) The Office of Management and Budget shall review each such report in light of the goals, priorities, and agency and departmental responsibilities set forth in the annual report submitted under subsection (a)(3)(A) of this section, and shall include, in the President's annual budget estimate, a statement of the portion of each appropriate agency's or department's annual budget estimate relating to its activities undertaken pursuant to the Program.

TITLE 15--COMMERCE AND TRADE

CHAPTER 81--HIGH-PERFORMANCE COMPUTING

Sec. 5503. Definitions

As used in this chapter, the term--

(1) ``Director'' means the Director of the Office of Science and Technology Policy;

(2) ``Grand Challenge'' means a fundamental problem in science or engineering, with broad economic and scientific impact, whose solution will require the application of high-performance computing resources and multidisciplinary teams of researchers;

(3) ``high-performance computing'' means advanced computing, communications, and information technologies, including ~~scientific workstations, supercomputer systems (including vector supercomputers and large scale parallel systems), high-capacity and high-speed networks, special purpose and experimental systems, and applications~~ applications and systems software and the management of large data sets;

(4) ``Internet'' means the international computer network of both Federal and non-Federal interoperable ~~packet-switched data networks~~;

(5) ``Network'' means a computer network referred to as the National Research and Education Network established under section 5512 of this title; ~~and~~

(6) ``Program'' means the National High-Performance Computing Program described in section 5511 of this title; ~~and~~

(7) Program Component Areas' means the major subject areas under which are grouped related individual projects and activities carried out under the Program.

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