HPC Site Budget Allocation Map: Budget Expectations

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EXECUTIVE SUMMARY

Intersect360 Research surveyed the High Performance Computing (HPC) user community to complete its tenth Site Budget Allocation Map, a look at how HPC sites divide and spend their budgets. We surveyed users on their spending in seven top-level categories: hardware, software, facilities, staffing, services, cloud computing, and other. Each category was further divided into constituent subcategories, resulting in 27 unique items included in the analysis. Additionally, the respondents were asked about their future budget expectations.

This report examines the change in budget from the prior year, expected budget change over the next two years, and key areas in which users see significant changes occurring over the next two years.

Highlights from this study include:

- Almost 44% of respondents reported their budgets increased. Another 37% reported that budgets did not change from the prior year. Only 19% reported a decrease in their budgets.
- Outlook on future budget increases remains positive. About 62% of all respondents expect their budgets to increase by 1% or more over the next two years, with about 28% expecting budgets to increase by 10% or more.
- HPC users in the commercial sector showed the most optimism, with 81% expecting budgets to increase by at least 1% over the next two years.
- Academic and government sites on average expect smaller increases in their budgets over the next two years compared to commercial sites. More than half of academic (57%) and government (63%) expect increases by 1% or more over the next two years. The expected growth in budgets at government sites is the largest reported in the last five years.

TECHNOLOGIES COVERED IN THIS REPORT

- HPC system elements
  - Systems, clusters
  - Servers
  - GPUs
- Processor Elements
  - Accelerators and Co-processors
    - GPU computing / GPUs
- Storage elements
  - Storage systems
    - Cloud storage
- Software elements
  - Middleware
  - Developer tools
  - Application software
    - Independent software vendor (ISV) or third-party (purchased/licensed) applications
    - In-house developed applications
- Facilities-level technologies
- Services
  - Programming services
  - Maintenance services
- Cloud computing, grid computing, utility computing
  - Public cloud technologies
  - Cloud bursting
- Other technology trends
  - Artificial Intelligence / AI
  - Machine Learning / Deep Learning

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TABLE OF CONTENTS

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