

XSEDE Technology Investigation Service and XSEDE Technology Evaluation Database

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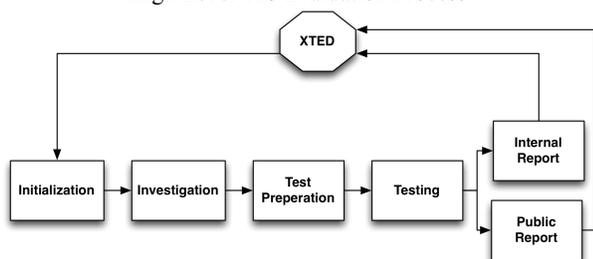
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The U.S. National Science Foundation's 2008 Program Solicitation NSF 08-571, "TeraGrid Phase III: eXtreme Digital Resources for Science and Engineering (XD)" included among services to be provided a "Technology Audit and Insertion Service" intended to "provide quality assurance and quality control for XD and will review and test advanced software tools for manipulating, processing and analyzing very large amounts of information, as these tools become available." The NSF separated this into three awards, of which one was the Technology Insertion Service (TIS). NSF awarded TIS to an XSEDE partnership comprised of technology experts, high performance computing (HPC) user advocates and consultants from the National Center for Supercomputing Applications (NCSA), National Institute for Computational Sciences (NICS), Pittsburgh Supercomputing Center (PSC), Texas Advanced Computing Center (TACC), and the University of Virginia (UVa). TIS was charged with identifying, cataloging and evaluating technologies of interest to the XD community, including HPC service providers, application and science gateway developers, and computational scientists. In this context, technology insertion emphasized the development of solutions based on evaluated technologies, and subsequent promotion and deployment of solutions to address specific XD community needs. TIS was formally integrated into the XSEDE project in November 2012. To emphasize its role in this new collaboration, Technology Insertion Service was renamed to Technology *Investigation* Service.

The XSEDE Technology Investigation Service (TIS) gathers information about available technologies that may be of use to high performance computing (HPC) service providers and users. In addition, TIS evaluates technologies regarding their capabilities and performance in select, narrowly-defined contexts, derived from priorities and needs expressed by HPC users and service providers in surveys of the computational science community. The catalog of requirements, technologies and evaluation results are stored in the XSEDE Technology Evaluation Database (XTED), a web-accessible information resource available to technology users, operators, developers, and vendors.

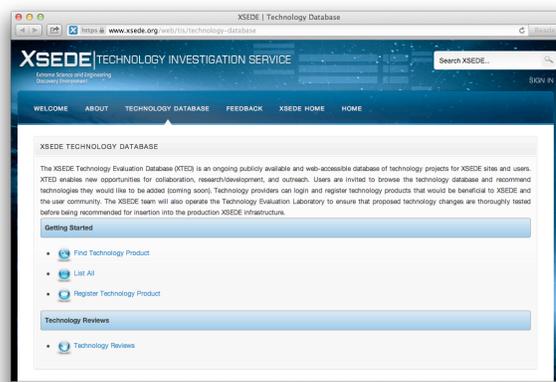
High Level TIS Evaluation Process



Over time, the XTED technology catalog and evaluation reports will provide guidance in selection of appropriate technologies for computational science infrastructures and application solutions. The increasing breadth and depth of content served by XTED will permit members of the XD and broader computational science community to make more informed decisions regarding selection and use of technologies for their scientific applications. Vendors and technology developers will be able to make more informed design and implementation decisions based on a broad understanding of the computational science community's needs and requirements, as well as factors influencing deployment and management of technologies in the XD environment.

In this poster, we describe the infrastructure and processes developed for the TIS technology evaluations and XTED. We encourage technology users, operators, developers and vendors to provide entries into the XTED database as candidates for evaluation. The poster will be presented together with live, interactive demonstrations illustrating how members of the XD community can view XTED information and reports, and enter information about their technology needs and requirements into XTED. The poster and live demonstration will also describe how technology developers and vendors can add their technologies to XTED.

XTED Website



General Terms

Management, Measurement, Documentation, Performance, Design, Economics, Reliability, Security, Verification.

Keywords

XSEDE, TIS, XTED, XD, HPC, Evaluation.