



Federal Ministry of Education and Research

We are happy to announce that SIOX has entered its next project phase, presenting the first draft of the low-level API at

## http://goo.gl/4MWSi

Salable IV for eXtreme performance				
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<ul> <li>Related Pages</li> <li>Data Structures</li> </ul>	Introduction			
► Files	Applications running on HPC systems use a file system to do their t/O. This mostly consists of the initial read of the input data, the periodical storage of checkpointing information from which to restore the execution state in case of unexpected program termination, as well as of the eventual writing of the application's statual output data.			
	infrastructure must keep pace with this context, a global optimization disparate nature of the requirement	order for the UO operations not to become the scalability bottleneck of MPC applications, the file system and UO frainctucture must keep pace with the investiga gentremance and number of computing cores present in HPC systems. In is context, a global optimization of the file system turns out to be very difficult to impossible. This is in part due to the sparate nature of the requirements and expectations of different user groups, and in part because currently there is no way identify adomnull to behavior and trace to back to its successful.		
	SIDO's main goal is to gain an overview of all the 1/0 activity taking place on an HPC system, and to use this information to optimize it, institutiv, the project's cope spans the development of standardized interfaces to collect, relaxe, and store performance data from all relevant layers. This information will then be analyzed and correlated with previously observed access patternin in order to gain an understanding of the characteristics and accal relationships of the system.			
	Apr	lication	ess information	
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	STOX in an HPC System			
	This knowledge will be the starting point for subsequent performance optimizations aimed at specific users and applications.			
	carried out through e.g. the automatic turing of Opin MPI or the system parameters. Such use-profiles are going to be continuously created and hor only highlight origination, but allowing days and parameters postemic or when planning mex acquisitions. In the course of the project, an hististic appreach for UD analysis should be conceived, implementer of applied. While Strong elitoxitisty is related to avail the contributed to them. In this way, the integrated analysis of applicability is related to main strong and infrastructure could also be used for the future optimization of other sciences in a the design of the system, calls for mail servers.			
	The following sections describe the current state of the project.			
	SIOX Architecture and Workflow			
	While work on the definite architecture of the SIXX system is still in progress, some of its essential components are already well defined. Among them are the SIXX deamons, the knowledge base and the central data warehouse. The workflow between the different components is illustrated in the figure below.			
	г			
		Client Processes I/O strategy	SIOX Transaction System	
		Offer of optimi parameters	28d Collection and correlation across system boundaries	
		SIOX Dater	ons Compression and transmission of	
		Relating acti and calls	itias I/O information	
		Optimization patterns,		
		arameters and hints	Quality inspection and compression	
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We would like to invite you to

- review and comment on the API,
- participate in development,
- implement SIOX for your file system/library/device drivers,
- or simply stay in touch with what's new with scalable I/O,

and subscribe to our interfaces mailing list at <u>http://goo.gl/8A5cf</u>

Further information on SIOX on our main page at www.HPC-IO.org see you there!

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