



Mentored by XSEDE

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### Project Objective

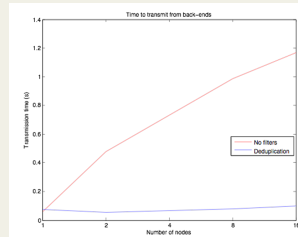
Enhance the accessibility, reliability, and scalability of PGDB, a free and open source parallel debugger for MPI applications.

### Approach

- Automate tedious install procedures for faster and more hassle-free setup
- Broaden the reach of PGDB by installing and testing on a variety of platforms
- Increase efficiency of message transmission through compression of large debugger output messages

### Status

- Deployed the debugger to new platforms. Collaborated with the developer of PGDB, Nikoli Dryden, to find and fix many bugs in the building and deployment of PGDB on new platforms.
- Documented the install process in detail to improve ease of deployment and to specify further which parts of the process can be automated.
- Implemented compression of large debugger output messages to more efficiently transmit these messages through MRNet.



One of the proposed optimizations, data deduplication (compressing redundant portions of debugger output for transmission) has been implemented and has had good results in practice.

### Questions

- What components of a parallel debugger can be reliably tested at runtime?
- Can it be optimized to scale to full supercomputers?
- Will enhanced accessibility lead to more widespread adoption?