Thoroughly understand your application’s I/O

Introducing the

**IO-Signature Software**

What can the IO-SIG software do?

- **I/O tracing or profiling**
  - Trace all the MPI-IO function calls in application
  - Does NOT require any modification to original application

- **Trace analysis**
  - Analyze trace files to get app’s access pattern and I/O Signatures
  - Can handle trace files in any text-based format
  - Online analysis website is available (See project homepage for URL)

Access patterns & I/O Signatures

- Five dimensional classifications of access patterns listed in the right chart.

- **I/O Signatures**
  - Trace signature
  - Pattern signature

**I/O Signature based optimization**

I/O Signatures allow users to accelerate the execution of their MPI based HPC or data intensive applications in many ways.

- It can guide the prefetching threads to do prefetching more accurately. (See the example on the left)
- Users can make better decision on how to effectively store the data to improve I/O performance with the help of I/O signature.

  - More approaches to be explored on how to utilize the potential of signatures.

Download and more ...

**Project homepage** www.cs.iit.edu/~scs/iosig

**Google project** code.google.com/p/iosig

Or search “iosig” on Google project hosting