Submission Details: bof179s1

First submitted: 2018-08-01 16:07
Last updated: 2018-08-01 16:07

Title

Title: XALT and Related Technologies: Job-Level Usage Data on Today's Supercomputers

Session Leader Information

Session Leader 1:

Name: Dr. Robert McLay
Email: mclay@tacc.utexas.edu
Company/Institution: University of Texas
Company/Institution 2: Texas Advanced Computing Center
Country: United States of America
Biography:

Robert McLay received his Ph.D from the University of Texas at Austin in Engineering Mechanics. His research interests include solving incompressible fluid dynamics with 3-D Finite Elements on large parallel computers. He is also interested in software tools to support supercomputers.

He joined the Texas Advanced Computing Center in 2008. In 2011, he became manager of the HPC Software Tools group. He released Lmod, a Lua based Environment Modules Tool as open source project in 2009. It has grown from a single center to be used by hundreds of sites around the world. Another open source project, XALT was released in 2014. It is a C/C++ based tool to track tasks on supercomputers. It has a small but growing community.

Photograph:
Is this person on the Birds of a Feather reviewing committee? No

BOF Topic Area

BOF Topic Area: Performance Measurement, Modeling, and Tools

Abstract

Abstract (Maximum 100 words):

XALT (xalt.readthedocs.org) is a battle-tested tool focused on job-level usage data. It reliably tracks both MPI and non-MPI tasks on compute nodes. It has features to support both long running MPI programs as well as short frequent non-MPI tasks. It also supports tracking whether a user's executable ran on one or more gpus. It can also track the packages used by R, Python and Matlab. It used at an ever growing number of site. This include NCSA, UK NCC, KAUST, NICS, ORNL, The University of Utah and TACC.

Long Description

Long Description (Maximum 500 words):

We're interested in what users are actually doing: everything from which applications, libraries, and individual functions are in demand, to preventing the problems that get in the way of successful computational research. And this year we're especially interested in some of the next great challenges, including (1) understanding the needs of formerly non-traditional research communities that comprise half the user community and whose non-MPI workflows consume more than a third of the computing cycles; (2) putting usage data in the hands of end users interested in records of their own job-level activity to facilitate, for example, reproducible research. We are now tracking individual Python packages and similar

usage within other frameworks like R and MATLAB.

XALT (xalt.readthedocs.org) is a battle-tested tool focused on job-level usage data; it enjoys a well-documented history of helping administrators, support staff, and decision makers manage and improve their operations. The small but growing list of centers that run XALT includes NCSA, UK NCC, KAUST, NICS, the University of Utah, and TACC. Version 2.3 is now ready to tracking non-MPI workflows. Join us a far-ranging discussion that will begin with an overview of new XALT capabilities before it ventures into broader strategic and technical issues related to job-level activity tracking.

Session format

How much of the session will be used for interaction between audience and session leaders/presenters? 50%
What is the primary format for content that does not directly involve audience discussion? Sequence of presentations
Does the BOF topic deal with commercial technology? Not commercial

Description of the session format

Description of the session format (Maximum 150 words):

The first half to the presentation will be a discussion of the current state of XALT and how it can be used. The second half will be an interaction between the presenter and the audience to discuss of getting a better understanding of what their users are running on their system. This will be compared with the organizer's experience at his home site.

BOFs at recent SCs

Has your BOF been held at recent SC conferences? SC15
SC16
SC17
If so, approximately how many attendees did your BOF attract the most recent year it was held? 50-74

Scheduling Information

Preferred date and time: Tuesday 1:30 - 3:00pm
Amount of time requested: 1.5 hrs
Expected Attendance: 50
Keyword/Phrase 1: Tracking Usage
Keyword/Phrase 2: HPC Workflows
Keyword/Phrase 3: Reproducibility

Conference Presentations

Can SC archive and distribute your conference presentation? Yes

Website

Website:

Acknowledgement

Acknowledgement: yes