



Advanced Workshop on HPC & Parallel Programming
using
Accelerator Technologies
March 15-16, 2017
Venue: Department of Computer Science and Engineering
Tezpur University, Napaam, Assam



Organized by:

Department of Computer Science and Engineering Tezpur University, Napaam, Assam

in association with

Development of Advanced Computing (C-DAC), Department of IT, Ministry of Electronics and IT, Government of India

High Performance Computing (HPC) has become pervasive, from supercomputers and server farms containing multi-core CPUs and GPUs, to individual PCs, laptops, and mobile devices. It is very important for every computer user (and especially every programmer) to understand how parallelism and distributed computing affect problem solving. It is essential for educators to impart a range of HPC knowledge and skills at multiple levels within the educational fabric woven by Computer Science (CS), Computer Engineering (CE), and related computational curricula. Industry requires resources with these skills, and as a result, they are finding that they must now engage in extensive on-the-job training. Nevertheless, rapid changes in hardware platforms, languages, and programming environments increasingly challenge educators to decide what to teach and how to teach it, in order to prepare students for careers that are increasingly likely to involve HPC.

With this background, Center for Development of Advanced Computing (C-DAC), Department of IT, Ministry of Electronics and IT, Government of India in association with Tezpur University is organizing *Advanced Workshop on HPC & Parallel Programming using Accelerator Technologies* during March 15-16, 2017. The workshop includes valuable deliberations from the C-DAC experts on the state-of-the-art HPC and parallel programming, discussions and exchange of ideas that assure to offer an enlightening platform for the people working in this research direction. Furthermore, the experts will also provide extensive hands-on training on GPGPU computing including installation and execution of HPC applications and many more, that would be instrumental for one to become an expert in the field of HPC.

The topics for the deliberations include:

- Fundamentals of High Performance Computing
- Overview of PARAM Tez cluster and PARAM Shavak at Tezpur University
- Overview of Parallel Programming
- Performance Metrics and profiling of codes
- Distributed-memory Computing - MPI (basic & advanced)
- Shared Memory Computing - OpenMP (basic & advanced)
- Setting up of users environment (paths of compilers, libraries etc.)
- Installation and execution of HPC applications
- Cluster Resource Manager and Job Scheduler (Torque)
- GPGPU Computing: overview, architecture, CUDA programming model
- Computing with Intel Xeon Phi (MIC): overview, architecture, programming model
- Bash shell scripting along with hands-on/demonstration sessions

Who can apply?

Students, Faculty, Researchers and Industry candidates interested in high performance computing technologies.

How to apply?

Spot-on registration will be conducted on the first day of the workshop (15/03/2017). Candidates should send a mail expressing their interest for participating in the workshop to one of the following:

deb0001@tezu.ernet.in

arindam@tezu.ernet.in

rosy8@tezu.ernet.in

Registration fee:

An amount of Rs. 200/- to be paid by out-station candidates and Rs. 200/- by local candidates. Fee has to be paid at the time of registration.