

ABOUT THE WORKSHOP

In recent years, many real-world and scientific problems are evolving which depend on processing massive data. Some examples include: weather forecasting, fluid dynamics, IoT, computational biology etc. To handle such data-intensive applications, high performance computing is indispensable. C-DAC, a premier R&D organization under MeitY, India has developed PARAM SHAVAK, an affordable supercomputing solution in a box, aiming to perform high-end computations for scientific, engineering and academic programs. The workshop is aimed at providing brief overview of high performance computing with hands-on experience on PARAM SHAVAK supercomputer.

SCOPE OF THE WORKSHOP

The workshop will provide the following benefits.

- Overview of high performance computing theories and applications
- Hands-on practice of OpenMP Programming under Linux
- MPI programming and job schedulers
- Overview of GPU architecture and openACC programming

TARGET PARTICIPANTS

Students, researchers and faculty members of engineering and applied science who are interested and working in the area of parallel computing, Big data, IoT, machine learning, atmospheric science, computational biology and allied areas.



ABOUT PMEC

Parala Maharaja Engineering College (P.M.E.C), Berhampur came into existence in the year 2009 as a constituent college of Biju Pattnaik University of Technology (BPUT), Odisha. This college is one of the premier technical institute in the state and is funded by the government of Odisha. The main objective of the institution is to produce quality technocrats in various streams. Government of Odisha has recognized this institution as a leading institution of repute and has a plan to develop it as a centre of excellence under plan funding.

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Workshop on *High Performance Computing using PARAM SHAVAK*

19th-22nd August 2019



Co-ordinators:

Dr. Niranjan Panigrahi, CSE
Dr. Sourav Kumar Bhoi, CSE

Organized by:

Parala Maharaja Engineering College
Berhampur, Odisha

&

C-DAC, Pune

Workshop on High Performance Computing using PARAM SHA VAK

Venue: PMEC, Berhampur, Odisha

Date : 19th – 22nd August 2019

Timings	10.00 – 11.15	11.15 – 11.45	11.45 – 13.00	13.00 – 14.00	14.00 – 16.00	16.00 – 16.30	16.30 – 17.00
Topics	Morning Session	Snacks/Tea break	Morning Session Continued	Lunch Break	Afternoon Session	Snacks/Tea break	Afternoon Session Continued

BASIC	Session	Day 1	Day 2	Day 3	Day 4
Basic Topics	Morning	1) Overview of HPC 2) Linux Introduction	1) OpenMP Programming (Basic clauses) 2) Application installation	1) MPI Programming (Basics and point to point) 2) Schedulers and job scheduling	1) GPU architecture 2) openACC Programming
Basic Hands-On Session	Afternoon	1) Linux Commands 2) Basic Linux scripts	1) OpenMP Programming with basic clauses 2) Linux Application installation Demo	1) MPI Programming for point to point communication. 2) Job scripts creation, submission and querying.	1) openACC Programming Hands-On