

# Workshop on High Performance Computing

## DellEMC-NITK, Surathkal

Date: 6 - April - 2018

**Facilitators:** DellEMC's R&D Team

**Audience:** Students & Faculty members from all disciplines; post graduate students preferred

**Duration:** 6 Hours on a single day.

**Workshop Synopsis:** High Performance Computing (HPC) is the use of super computers and parallel processing techniques for solving complex computational problems. This workshop will help both faculty and students to learn the basics of this most commonly used technology in the scientific and academic world and use it to solve their large and complex scientific problems. The hands-on will help to build their own HPC infrastructure and use on a large scale.

The high-level agenda of the workshop includes: Understanding the basics of HPC, how to build your HPC cluster, hosting an application on the HPC cluster and troubleshooting any bottlenecks, fundamentals of machine learning and its usage with HPC.

### Content:

1. What is HPC? Why HPC?
  - a. Introduction to HPC
  - b. HPC's mission
  - c. Who required HPC?
  - d. Why HPC?
  - e. Evolution of HPC
2. Build your own HPC cluster
  - a. Basic requirements for HPC?
  - b. Build cluster with any LINUX OS? (Preferable is RHEL/CentOS)
  - c. How to submit job?
  - d. Manage HPC cluster
2. Run application on HPC (With any Machine learning framework)
  - a. Introduction to machine learning
  - b. Machine learning needs HPC. Why?
  - c. How to compile application?
  - d. Debugging tool to analyze application bottlenecks.

### Workshop Schedule

Topics Presentation	9:00 - 12:00
Lunch Break	12:00 - 1:30
Hands on Practice	1:30 - 4:30pm

Link for Registration:

[https://docs.google.com/forms/d/e/1FAIpQLSeovGDfdMr-Eu72L65hSf8ekjS5PCO\\_XvjfCfdh\\_5b5mKg4w/viewform](https://docs.google.com/forms/d/e/1FAIpQLSeovGDfdMr-Eu72L65hSf8ekjS5PCO_XvjfCfdh_5b5mKg4w/viewform)