



Consulting and Training | Reach New Heights

Course Name

High Performance Computing Systems Administrator

Sector Name

Information Technology

Document Type

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High Performance Computing Systems Administrator

Course Introduction

High Performance Computing (HPC) is a rapidly growing field that is transforming the way we approach complex computational problems across diverse industries and scientific disciplines. This course provides a comprehensive overview of the fundamental concepts, architectures, and programming techniques that underpin modern HPC systems.

The course begins by exploring the need for HPC, its societal and economic impact, and the key differences between HPC and traditional parallel computing. Students will learn how to measure and optimize software performance, as well as understand the critical hardware-software interface in HPC environments.

Through hands-on exercises and case studies, participants will gain practical experience in programming various HPC architectures, including multinode systems using MPI, multicore systems using OpenMP, and GPU-accelerated systems programmed in CUDA or OpenCL.

This course is designed for a wide range of audiences, from computer science and engineering students to hardware/software developers, high-tech managers, and researchers in computational and data-driven science and engineering. Whether you're new to

HPC or looking to deepen your expertise, this course will provide you with the knowledge and skills to harness the power of high-performance computing.

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Target Audience

- ✓ Computer science and engineering students
- ✓ Hardware/software developers, high-tech managers,
- ✓ Researchers in computational and data-driven science and engineering.

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Learning Objectives

- ✓ Understand what HPC is and its applications and impact.
- ✓ Identify the difference between HPC and parallel systems.
- ✓ Measure and optimize software program performance.
- ✓ Apply the interfacing of the HW and SW in programming in general.
- ✓ Program multinode parallel systems in MPI.
- ✓ Program multicore parallel systems in OpenMP.
- ✓ Program GPU systems in CUDA/OpenCL.

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Course Outline

✓ **DAY 01**

- ✓ Introduction to HPC

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Course Outline

✓ Day 02

- ✓ Performance in HPC
- ✓ Memory & Parallelism in HPC

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Course Outline

✓ Day 03

- ✓ Parallel Programming in HPC

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Course Outline

✓ Day 04

- ✓ Numerical Computing & openMP

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Course Outline

✓ Day 05

- ✓ GPU Programming

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Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
Jan. 11, 2027	Jan. 15, 2027	5 days	4250.00 \$	UAE , Dubai
May 23, 2027	May 27, 2027	5 days	4250.00 \$	Qatar , Doha
Aug. 2, 2027	Aug. 6, 2027	5 days	4950.00 \$	England , London
Nov. 23, 2026	Nov. 27, 2026	5 days	4250.00 \$	UAE , Abu Dhabi

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