Hewlett Packard Enterprise

HPE Cray EX Programming and Optimization H8PG3S

HPE course number	H8PG3S
Course length	4 days
Delivery mode	ILT, VILT
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Why HPE Education Services?

- IDC MarketScape Leader 7 years running for IT education and training*
- Recognized by IDC for leading with global coverage, unmatched technical expertise, and targeted education consulting services*
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- Complete continuum of training delivery options—self-paced eLearning, custom education consulting, traditional classroom, video on-demand instruction, live virtual instructor-led with hands-on lab, dedicated onsite training
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In this interactive course, students learn about the HPE Cray Programming Environment and how it is used on HPE Cray EX Series systems. The HPE Cray Programming Environment consists of compilers, libraries, debuggers, and analysis tools that enable developers to efficiently utilize massively parallel Supercomputers at scale. The HPE Cray EX Series Supercomputer is the latest high-performance computing solution from HPE and is the platform for the world's first Exascale class systems. This course includes lab exercises.

Audience

This course is for end users of HPE Cray EX series systems with the HPE Cray Programming Environment. This course is also appropriate for HPE and customer support engineers who support end users of HPE Cray EX series systems with the HPE Cray Programming Environment.

Prerequisites

The following prerequisites are recommended:

- Linux knowledge
- HPE Cray EX System Overview (eLearning)

Course objectives

By the end of this course, the learner should be able to:

- Provide an architectural overview of the HPE Cray EX series supercomputer including the Slingshot network
- Preform basic Lustre configuration to optimize file I/O in their applications
- List and describe the various components of the HPE Cray Programming Environment
- Use a supported workload manager (WLM) to run an application on an HPE Cray EX series system
- Use HPE Cray compilers to build and optimize, Fortran, C, C++, or UPC applications
- Build and launch a parallel application using a supported version of MPI
- Set up an interactive debugging session of a parallel application on an HPE Cray EX series system
- Use the comparative debugger within the HPE Cray Programming Environment
- Use the performance analysis and optimization tools to identify inefficiencies within their applications

*Realize Technology Value with Training, IDC Infographic 2037, sponsored by Hewlett Packard Enterprise, 2019

Detailed course outline

HPE Cray EX Series System Overview		
Lustre Filesystem Overview	• Including Data Virtualization Service (DVS)	
HPE ClusterStor E1000 System Overview		
HPE Cray EX User Access Options		
HPE Cray Programming Environment Overview		
Using Supported Workload Managers on HPE Cray EX series systems	• SLURM	• PBS Pro with PALS
Compilers		
MPI Environment		
Debugging Tools		
Performance Analysis and Optimization Tools		
Scientific Libraries Included with HPE Cray Programming Environment		
HPE Cray EX Node Optimization		

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