

Introduction to the NonStop Cluster I/O Module (CLIM) HG765S

HPE course number	HG765S
Course length	3 Days
Delivery mode	ILT, VILT
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This course provides an overview of the HPE NonStop Cluster I/O Modules (CLIMs). Acquire the skills to understand the HPE NonStop most modern I/O infrastructure using CLIMs and which features the CLIMs are providing to HPE NonStop customers. Acquire the commands to configure and monitor CLIMs using the Cluster I/O Protocol (CIP) SubSystem. After completing this course, you will be able to configure the CIP SubSystem, CLIMs, storage devices using Storage CLIMs, configure basic networking using IP CLIMs and perform basic operations. This course is 80% lecture and 20% hands-on labs.

Audience

- Customer support personnel
- Customer system managers
- NonStop architects
- HPE support personnel

Prerequisites

Concepts and Facilities for NonStop Servers (U4147S)

Course objectives

- Introduce you to the NonStop server architecture including Cluster I/O modules and their function and location
- Introduction of the software architecture for CLIMs (CIP Subsystem)
- Provide an overview of the IP Cluster I/O Module (CLIM)
- Provide an overview of the Storage CLIM

- Adding CLIMs to a NonStop system
- Provide an overview of the generic CLIM commands
- Provide an overview of the specific Storage CLIM commands
- Provide an overview of the specific IP CLIM Commands
- Provide an overview of how to diagnose an IP CLIM environment

Benefits to you

- Better understand the CLIM I/O infrastructure
- Understanding the Cluster I/O Protocol (CIP) SubSystem
- HPE Education services are governed by the HPE Education Services Terms and Conditions
- Know how to configure CLIMs
- Know how to configure NonStop Storage Devices and Networking using CLIMs

Detailed Course Outline

Module 1 - Introduction to the NonStop Cluster I/O Module (CLIM)	<ul style="list-style-type: none"> • Course introduction 	
Module 2 - NonStop Hardware Architecture Overview	<ul style="list-style-type: none"> • Architecture Overview of HPE Integrity NonStop Servers and HPE • Integrity NonStop BladeSystems using CLIMs • Overview of HPE Integrity NS16x00 Systems using CLIMs • Overview of HPE Integrity NS2x00 Systems using CLIMs 	<ul style="list-style-type: none"> • Overview of HPE NonStop HPE Integrity NB5x000c BladeSystems using • CLIMs • Describe the basic functions of the CLIMs
Module 3 - CLIM Architecture	<ul style="list-style-type: none"> • CLIM Product Overview • Introduce the Cluster I/O Module (CLIM) • Describe the common components of the CLIM 	<ul style="list-style-type: none"> • Describe the CLIM theory of operation • Describe how the CLIM connects into the NonStop Server • Describe the Cluster I/O Protocol (CIP) software components
Module 4 - Storage CLIM	<ul style="list-style-type: none"> • Introduce the Storage Cluster I/O Module (CLIM) • Describe how the Storage CLIM connects into the NonStop Multicore Architecture (NSMA) • Describe the hardware components of the DL385 G2 and G5 Storage CLIM 	<ul style="list-style-type: none"> • Describe the hardware components of the DL380 G6 and DL380p Gen8 Storage CLIM • Describe the SAS Disk Enclosures MSA70 and D2700 hardware components • Describe the SAS Tape Drives
Module 5 - IP CLIM Architecture	<ul style="list-style-type: none"> • Introduce the IP Cluster I/O Module (CLIM) • Describe how the IP CLIM connects into the NonStop System 	<ul style="list-style-type: none"> • Describe the hardware components of the IP CLIM
Module 6 - Managing CLIMs	<ul style="list-style-type: none"> • Procedures for managing CLIMs • OSM LLL CLIM prep • SCF commands for adding CLIMs to the system 	<ul style="list-style-type: none"> • SCF commands to show CIP subsystem and CLIM status • Commands for adding other basic components as providers for IP CLIMs • Enable a trusted relationship between NonStop and CLIM
Module 7 - Common CLIM Commands	<ul style="list-style-type: none"> • SCF commands for the CIP subsystem • CLIM backup and restore commands • CLIMCMD command wrapper and examples of CLIMCMD 	<ul style="list-style-type: none"> • Single Sign On (SSO) for CLIMs • Some CLIMCMD Linux Examples
Module 8 - Storage CLIM configuration	<ul style="list-style-type: none"> • Overview of the storage configuration using Storage CLIMs • Specific SCF commands for the Storage CLIM • Adding disks attached to CLIMs with SCF • Describing write-through and write-back cache 	<ul style="list-style-type: none"> • Storage CLIM CLIMCMD commands • Disk partitioning • Volume Level Encryption (VLE)

Module 9 - IP CLIM Configuration

- Specify the SCF commands for IP CLIMS
- General command structure climconfig
- Describing the IPDATA Provider object
- Adding and configuring interfaces
 - Physical interface
 - IP address
 - Configuring for fault-tolerance
 - Bonding - types supported - fail-over on interface and link level
 - CLIM-to-CLIM - per provider fault tolerance - fail-over on CLIM level
- Adding and configuring routes
 - Generic routes
 - Specific routes
- Gathering and collecting information from TCP/IP configurations
- Describing the Multi Provider CLIM (MPC)
- Describing climptables (FireWall)
- Describing IPSec on IP CLIMS

Module 10 - IP CLIM Troubleshooting

- Describe how to Identify a Failure
- Describe how to Categorize the Failure
- Describe how to Collect the Data
- Describe Basic Analysis
- Describe Recovery

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