



HPE Helion OpenStack® Carrier Grade H8N83S

The Mobile Communication Service Providers (CSPs) are on the verge of a significant network transformation that is based on the newly developed Network Functions Virtualization standard. HPE is at the forefront of this transformation with the HPE NFV Reference Architecture. One of the key elements of the NFV Reference Architecture is Helion OpenStack® – Carrier Grade (HCG). It is an enhanced OpenStack® product that provides the reliability, availability, and manageability that is required in the NFV environment. This hands-on course provides the participants to experience HCG 4.0 from an interactive lab experience. The participants will have opportunity to configure, run, and explore the key elements of HCG 4.0.

HPE Helion OpenStack® Carrier Grade

Price USD \$2,400

Links to local schedules, pricing and [US/Canada](#)
[Mexico/Latin America](#)
[Brazil](#)

HPE course # H8N83S

Category Cloud

Duration 3 days

Audience

- This course is intended for technical audience that needs a technical understanding of Helion OpenStack® – Carrier Grade 4.0.

Prerequisites

- Working knowledge of OpenStack®
- Fundamentals of OpenStack® Technology (H6C68S)
- CSP Network Performance Overview

Course objectives

After completing this course, students will be able to:

- Sketch a HCG 4.0 architecture
- Demonstrate the key enhancements to the HCG Controllers in the VNF and General execution environment
- Show the networking and availability enhancements to the VNF execution environment Compute Nodes
- Demonstrate the Life Cycle Management of VMs in the VNF execution environment
- Illustrate how HCG SDK and HCG 4.0 interwork

Course outline

Module 1: Overview of Helion Carrier grade

- IT vs. Telco workloads
- Carrier grade capabilities
- Helion Carrier Grade Architecture
- Helion Carrier Grade Features
 - High Availability
 - High Performance Networking
 - NFV Grade Execution Environment
 - Hardware Management Features
 - OAM Features
 - Software Management Features
- Deployment Options
- Installation workflow
- System Configuration

Module 2: HCG Compute Environment

- The use and enhancement of OpenStack®
- Controller and Compute nodes
- High Availability
- Compute hardware
- Hardware profiles
- NUMA
- Carrier grade enhancements
 - Nova scheduler
 - Server groups
 - Response times
 - CPU Pinning
 - Flavors and Extra Specs
 - Guest heartbeat
 - Ceilometer enhancements

Module 3: HCG Networking Environment

- Network types
- L2 switch use
- IRF
- SR-IOV and PCI Passthrough
- Data network provision
- Ports and interfaces
- Provider and external networks
- Host aggregate use in networking
- DPDK, AVS, AVP
- Virtual Interfaces
- Tenant Networks
- Virtual Routers
- SDN Integration
- Network management
- Network sizing

Module 4: HCG Storage Environment

- VM Storage Types
- Volumes and Images in HCG
- Block and Object storage in HCG
- HCG Storage implementation
- Using Ceph
- Storage planning

Module 5: HCG VM and Host lifecycle Management

- Lifecycle of a compute host
- Lifecycle of a VM
- Live migration
- Cold migration
- Fault detection
- HCG SDK
- Guest Scaling

Module 6: HCG Operations

- System databases
- System backup and restore
- Image backup and restore
- Volume backup and restore
- Patching HCG
- Performance monitoring
- Fault management
- Accelerated Virtual Switch management

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