Global Horizon
TRAINING CENTER

Training Course:
OpenStack Essentials: Daily Operations and Administration

8 - 12 June 2025
Cairo (Egypt)
Holiday Inn & Suites Cairo Maadi, an IHG Hotel

Training Course:
OpenStack Essentials: Daily Operations and Administration

Training Course code: SC235698 From: 8 - 12 June 2025 Venue: Cairo (Egypt) - Holiday Inn & Suites Cairo Maadi, an IHG Hotel Training Course Fees: 3875 Euro

Introduction

Red Hat OpenStack has become a cornerstone for cloud infrastructure, offering flexibility, scalability, and robust tools for managing cloud environments. This training program is designed to provide participants with a comprehensive understanding of OpenStack's daily operations and administration. Through hands-on learning and theoretical insights, this program aims to empower participants to efficiently deploy, manage, and optimize OpenStack environments.

OpenStack's ability to integrate with diverse systems makes it a powerful tool for organizations transitioning to cloud solutions. By mastering its components and operations, participants will be well-equipped to address real-world challenges, enhance performance, and ensure cloud continuity.

Target Audience

This program is designed for IT professionals who:

- Are system administrators or cloud engineers transitioning to OpenStack environments.
- Work in IT operations and require knowledge of cloud infrastructure.
- Want to gain expertise in OpenStack for career growth.
- Are responsible for managing cloud environments in medium to large organizations.

Objectives

By the end of this program, participants will:

1. Understand the fundamentals and architecture of OpenStack.
2. Gain proficiency in managing core OpenStack components such as Nova, Neutron, Cinder, and Keystone.
3. Learn advanced networking and storage management techniques.
4. Implement robust user and security management practices.
5. Master monitoring, troubleshooting, and performance optimization.
6. Plan and execute maintenance and upgrade strategies.
7. Address practical challenges through real-world case studies and best practices.

Outlines:

Day 1:

Introduction and Core OpenStack Architecture

1. Introduction to OpenStack:
    - Overview and history of OpenStack.
    - Use cases and its significance in cloud environments.
    - Comparison between OpenStack and traditional cloud management systems.
2. Core OpenStack Components:
    - Nova Compute, Neutron Networking, Cinder Block Storage, Keystone Identity.
    - Interconnection and interactions between components.
3. Cloud Infrastructure Basics:
    - Distributed systems and how clouds operate in OpenStack.
4. Operations Overview:
    - Definition and importance for cloud continuity.
    - Examples of day-to-day operations.

Day 2:

Advanced Networking and Storage Management

1. Networking with Neutron:
    - Network types VLAN, VXLAN, Flat.
    - Configuring virtual networks and interconnections.
    - Managing static and dynamic IP addresses.
2. Routing and Gateways:
    - Configuring virtual routers.
    - Connecting public and private networks.
3. Storage Management with Cinder and Swift:
    - Differences between Block and Object Storage.

- Creating and attaching volumes to instances.

4. Advanced Networking and Storage Options:
    - Load Balancer as a Service LBaaS.
    - Security Group configurations and management.

Day 3:

User and Security Management

1. Identity Management with Keystone:
    - Creating and managing users, projects, and roles.
2. Role-Based Access Control RBAC:
    - Designing and implementing access control policies.
    - Best practices for permissions management.
3. Enhancing OpenStack Security:
    - Implementing TLS/SSL certificates.
    - Securing communications between components.
    - Mitigating common attacks like brute force.
4. Governance Policies:
    - Defining and enforcing policies.
    - Log monitoring and compliance tracking.

Day 4:

Monitoring, Troubleshooting, and Performance Optimization

1. Performance Monitoring:
    - Telemetry Ceilometer overview.
    - Using visualization tools like Grafana.
    - Creating alerts for performance issues.
2. Log Analysis and Troubleshooting:

- Reading and interpreting OpenStack logs.
- Identifying common errors in Nova, Neutron, and Cinder.

3. Failure Management:
    - Addressing critical failures in networks and storage.
4. Performance Tuning:
    - Optimizing Compute and Storage performance.
    - Resource consumption reduction strategies.

Day 5:

Maintenance, Upgrades, and Practical Challenges

1. Preventative Maintenance:
    - Scheduling periodic maintenance.
    - Verifying component integrity.
2. Updates and Upgrades:
    - Planning upgrades to minimize downtime.
    - Safely upgrading individual components.
3. Daily Operational Challenges:
    - Examples of challenges in large-scale OpenStack environments.
    - Rapid response strategies for incidents.
4. Case Studies and Discussions:
    - Real-world OpenStack challenges and solutions.
    - Sharing best practices and practical advice.

Registration form on the Training Course: OpenStack Essentials: Daily Operations and Administration

Training Course code: SC235698 From: 8 - 12 June 2025 Venue: Cairo (Egypt) - Holiday Inn & Suites Cairo Maadi, an IHG Hotel Training Course Fees: 3875 Euro

Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

Delegate Information

Full Name (Mr / Ms / Dr / Eng): .....
Position: .....
Telephone / Mobile: .....
Personal E-Mail: .....
Official E-Mail: .....

Company Information

Company Name: .....
Address: .....
City / Country: .....

Person Responsible for Training and Development

Full Name (Mr / Ms / Dr / Eng): .....
Position: .....
Telephone / Mobile: .....
Personal E-Mail: .....
Official E-Mail: .....

Payment Method

- ☐ Please find enclosed a cheque made payable to Global Horizon
- ☐ Please invoice me
- ☐ Please invoice my company

Easy Ways To Register

Telephone: +201095004484 to provisionally reserve your place.	Fax your completed registration form to: +20233379764	E-mail to us : info@gh4t.com or training@gh4t.com	Complete & return the booking form with cheque to:Global Horizon 3 Oudai street, Aldouki, Giza, Giza Governorate, Egypt.