
Network Automation using Contrail Cloud

Duración: 5 Días **Código del Curso: NACC**

Temario:

This five-day course is designed to provide students with the knowledge required to work with the Juniper Contrail software-defined networking (SDN) solution. Students will gain in-depth knowledge of how to use the OpenStack and Contrail Web UIs, APIs and CLI to perform the required tasks. Through demonstrations and hands-on labs, students will gain experience with the features of Contrail. This course is based on Contrail Release 4.1.0.

Dirigido a:

This course benefits individuals responsible for working with software-defined networking solutions in data center, service provider, and enterprise network environments. Network Automation using Contrail Cloud is an intermediate-level course.

Objetivos:

- Explain the definition and main principles of SDN.
- • Discuss the NFV framework.
- • Explain the role of Contrail SDN Controller.
- • List available Contrail solutions.
- • Describe the purpose of OpenStack.
- • Identify the function of each of the main OpenStack Projects.
- • Use the OpenStack CLI.
- • Describe OpenStack REST APIs and Python SDK.
- • Use OpenStack Heat Orchestration Templates.
- • Configure OpenStack using Horizon Web UI and Heat.
- • Describe the main features of Contrail.
- • Discuss different Contrail use cases.
- • Describe Contrail related solutions.
- • Describe the functions of the Contrail vRouter.
- • Describe the functions of the Contrail SDN Controller.
- • Understand containerized Contrail modules.
- • Explain the role of different node types in Contrail.
- • Use Contrail troubleshooting tools.
- • Describe available Contrail configuration methods.
- • Configure Contrail Virtual DNS services.
- • Describe QoS support in Contrail.
- • Understand Load Balancing as a Service.
- • Describe vRouter support for DPDK, SR-IOV and SmartNICs.
- • Understand Contrail Global Controller.
- • Describe service chaining within Contrail.
- • Understand service chains version 1 and version 2.
- • Configure In-Network service chains.
- • Configure Transparent service chains.
- • Configure Source NAT.
- • Use Heat to automate service deployment.
- • Understand details of service chain routing.
- • Use routing policies.
- • Troubleshoot service chains.
- • Explain the use of Docker containers in service chains.
- • Describe Physical Network Function integration.
- • Explain routing traffic from physical network via Contrail service chain.
- • Explain the functions of Contrail Analytics.
- • Describe how to work with the Monitor workspace.
- • Discuss how to run flow queries and examine system logs.
- • Use Contrail Analytics API.

- • Create virtual networks.
- • Create policies to control the flow of traffic.
- • Use Contrail Configuration API.
- • Explain how virtual and physical networks can be connected.
- • Configure Floating IPs.
- • Use physical gateway devices with Contrail.
- • Configure physical devices with Device Manager.
- • Use simple virtual gateway.
- • Explain underlay connectivity without gateway.
- • Explain Contrail integration with Kubernetes and OpenShift.
- • Use BGP as a Service feature.
- • Understand Graceful Restart Capabilities.
- • Work with Contrail Alarms.
- • Understand how to analyze live traffic with Contrail.
- • Describe Underlay Overlay mapping.
- • Explain the need for Contrail Security.
- • Discuss multidimensional firewall policy configuration.
- • Use tags and labels.
- • Discuss traffic visualization with Contrail Security.
- • Explain pre-installation tasks and roles.
- • Describe Server Manager and Server Manager Lite.
- • Describe Contrail installation using Server Manager Lite.
- • Describe additional settings and operations.

Prerequisites:

The prerequisites for this course are as follows:

- Basic TCP/IP skills
- General understanding of data center virtualization
- Basic understanding of the Junos operating system
- Completion of the Junos Cloud Fundamentals (JCF) course prior to attending this class
- Basic knowledge of object-oriented programming and Python scripting is recommended
- IJOS - Introduction to the Junos Operating System
- JSDNF - Juniper Networks SDN Fundamentals

Exámenes y certificación

Associated Certification

- JNCIS-SDNA

Siguientes cursos recomendados:

- Network Automation in the Enterprise Cloud (NAEC)
- JIR - Junos Intermediate Routing
- JSEC - Junos Security

Contenido:

Chapter 1. Course Introduction

Chapter 2. SDN, NFV, and Contrail

- Review of SDN and NFV
- Contrail Solution Overview

Chapter 3. OpenStack Fundamentals

- OpenStack Overview
- OpenStack Projects
- Exploring OpenStack Installation and Using CLI
- Lab 1: Exploring OpenStack with the CLI

Chapter 4. OpenStack Configuration

- OpenStack Interface Options
- Using OpenStack Heat Templates
- OpenStack Configuration
- Lab 2: Configuring OpenStack

Chapter 5. Contrail Overview

- Contrail Use Cases
- Contrail Solution Overview
- Contrail Related Solutions

Chapter 6. Contrail Architecture Fundamentals

- Contrail Architecture Overview
- Contrail Management and Analytics
- Contrail Control Plane
- Contrail Data Plane
- Basic Contrail Troubleshooting
- Lab 3: Exploring and Troubleshooting the Contrail vRouter and SDN Controller

Chapter 7. Contrail Configuration Basics

- Contrail Configuration Methods
- vRouter Services
- Configuring Virtual Networks
- Configuring Network Policies and Security Groups
- Contrail API Python Library Lab 4: Virtual Networks and Policies

Chapter 8 .Interacting with External Networks

- Connecting Virtual and Physical Networks
- Floating IPs
- Using Device Manager
- Configuring Simple Virtual Gateway
- Underlay Connectivity without Gateway
- Lab 5: Creating Floating IPs and Gateways

Chapter 9. Contrail Network Services

- Contrail and Container Networking
- BGP as a Service
- Graceful Restart Capabilities
- Implementing CoS
- Load Balancing as a Service Overview
- vRouter Support for DPDK and SR-IOV
- Contrail Global Controller Overview
- Lab 6: Using Docker Containers with Contrail

Chapter 10. Contrail Service Chains

- Service Chaining Overview
- In-Network Service Chain and Configuration
- Transparent Service Chain and Configuration
- Configuring Source NAT
- Automating Service Chaining
- Lab 7: Creating Contrail Service Chains

Chapter 11. Advanced Service Chaining

- Advanced Operation
- Service Instance Health Checks
- Troubleshooting Service Chains
- Service Chain with Docker Containers
- Physical Network Function Integration
- NFV for ISP Case Study
- Lab 8: Advanced Service Chain Operation and Troubleshooting

Chapter 12. Contrail Monitoring and Analytics

- Analytics Overview
- Monitor > Infrastructure Workspace
- Monitor > Networking Workspace
- Flow Queries, Logs, and Statistics
- Configuring Contrail Analytics
- Analytics API Lab 9: Using Contrail Analytics

Chapter 13. Analyzing Network State and Traffic Flows

- Contrail Alarms
- Analyzing Live Traffic
- Underlay Overlay Mapping
- Lab 10: Analyzing Traffic Flows with Contrail Analytics

Chapter 14. Contrail Security

- The Need for Contrail Security
- Contrail Security Configuration
- Monitoring and Visualization

Chapter 15. Contrail Installation

- Pre-Installation and Roles
- Server Manager Overview
- Installation using Server Manager Lite
- Additional Settings and Operations
- Lab 11: Installing Contrail

Más información:

Para más información o para reservar tu plaza llámanos al (34) 91 425 06 60

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