Enterprise Multicloud Automation and Orchestration Using Contrail (EMCC)

Engineering Simplicity

COURSE LEVEL

Enterprise Multicloud Automation and Orchestration using Contrail (EMCC) is an advanced-level course.

AUDIENCE

The primary audience for this course includes network engineers, administrators, support personnel, and reseller support personnel, responsible for working with Contrail-based networking solutions in data center and enterprise cloud environments.

PREREQUISITES

*   Basic TCP/IP skills
*   Working knowledge of cloud networks
*   Attendance of the *Network Automation using the Contrail Controller* (NACC) class

ASSOCIATED CERTIFICATION

JNCIP-Cloud

RELEVANT JUNIPER PRODUCT

*   AppFormix
*   Contrail
*   Junos OS
*   QFX Series

CONTACT INFORMATION

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COURSE OVERVIEW

This three-day course is designed to provide knowledge of how to use Contrail Enterprise Multicloud in cloud networks. Through demonstrations and hands-on labs, you will gain experience in working with Contrail Enterprise Multicloud in Kubernetes, OpenShift, VMware vCenter, Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform (GCP) environments. You will also learn how to secure cloud networks with Contrail Security, service chaining, and Juniper cSRX. This course is based on Contrail Release 2003.

OBJECTIVES

After successfully completing this course, you should be able to:

*   Describe the benefits of Contrail Enterprise Multicloud.
*   Describe the use cases of Contrail Enterprise Multicloud.
*   Understand the Contrail Enterprise Multicloud architecture.
*   Explain Kubernetes architecture.
*   Explain how Contrail integrates with Kubernetes.
*   Understand how Contrail Security is used with Kubernetes.
*   List main deployment methods for Contrail with Kubernetes.
*   Explain Red Hat OpenShift architecture.
*   Explain how Contrail integrates with Red Hat OpenShift.
*   Understand how to launch OpenShift workloads and connect them over Contrail Virtual Networks.
*   Understand how Contrail Security is used with Red Hat OpenShift.
*   Explain vCenter architecture.
*   Understand vCenter integration with Contrail.
*   Describe how to connect vCenter workloads using Contrail virtual networks.
*   Describe how to use Contrail Security features to secure vCenter workloads.
*   Understand how VMware vRealize Orchestrator works with Contrail.
*   Explain the main AWS concepts.
*   Describe how to launch AWS workloads with Contrail Enterprise Multicloud.
*   Describe how to connect AWS workloads to private cloud over Contrail VNs.
*   Explain the main Azure concepts.
*   Describe how to launch Azure workloads with Contrail Enterprise Multicloud.
*   Describe how to connect Azure workloads to private cloud over Contrail VNs.
*   Explain the main GCP concepts.
*   Describe how to launch GCP workloads with Contrail Enterprise Multicloud.
*   Describe how to connect GCP workloads to private cloud over Contrail VNs.
*   Describe service chaining within Contrail.
*   Configure In-Network, In-Network-NAT, and Transparent service chains.
*   Understand route leaking, policies, and aggregation in service chains.
*   Understand the features of Juniper cSRX.
*   Configure cSRX service chains.

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COURSE CONTENT

Day 1

1	**Course Introduction**

2	**Contrail Enterprise Multicloud Overview**

- CEM Overview
- CEM Use Cases
- CEM Architecture

3	**Using Contrail with Kubernetes**

- Kubernetes Architecture
- Contrail Integration Overview
- Service and ingress
- Workload Isolation
- Using Contrail Security
- Deploying Contrail with Kubernetes

Lab 1: Contrail and Kubernetes Integration

4	**Using Contrail with Red Hat OpenShift**

- Red Hat OpenShift Overview
- OpenShift Architecture and Contrail Integration
- Working with OpenShift and Contrail
- Case Study

Lab 2: Contrail and OpenShift Integration

Day 2

5	**Using Contrail with VMware vCenter**

- Overview of VMware vCenter and Contrail Integration
- Using Contrail vCenter Fabric Manager Plugin
- Using Contrail Virtual Machine
- Instantiating vCenter Workloads over Contrail Virtual Networks
- Securing vCenter Workloads with Contrail Security
- Contrail and VMware vRealize Orchestrator

Lab 3: Contrail and vCenter Integration

6	**Private to Public Cloud Overlay Networking – AWS**

- AWS and Contrail Overview
- Deploying Contrail Multicloud for AWS

Lab 4: Interconnecting Private Cloud Workloads to AWS Workloads

7	**Private to Public Cloud Overlay Networking – Azure**

- Azure and Contrail Overview
- Deploying Contrail Multicloud for Azure

Lab 5: Interconnecting Private Cloud Workloads to Azure Workloads

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Day 3

8	**Private to Public Cloud Overlay Networking – GCP**

- Google Cloud Platform (GCP) Overview
- Deploying Contrail Multicloud for GCP

9	**Contrail Service Chains**

- Service Chaining Overview
- Service Chain Configuration
- Advanced Service Chain Operation

Lab 6: Creating Contrail Service Chains

10	**Service Chaining with cSRX**

- cSRX Overview
- Multiple Interface Pods in Kubernetes
- Service Chaining with cSRX

Lab 7: Creating Service Chains with cSRX

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