Enterprise Automation and Orchestration Using Contrail (EAC)

COURSE OVERVIEW

This 2-day course is designed to provide knowledge of how to use Contrail in enterprise cloud networks. Through demonstrations and hands-on labs, you will gain experience in working with Contrail Networking in Kubernetes, OpenShift, and VMware vCenter 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 2011.

COURSE LEVEL

Advanced

AUDIENCE

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

- TCP/IP networking knowledge
- Working knowledge of cloud networks
- Completion of the *Cloud Automation Using Contrail* (CAC) course

RELEVANT JUNIPER PRODUCT

- Contrail

CONTACT INFORMATION

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OBJECTIVES

- Describe Contrail and its enterprise use cases
    - List Contrail products and key Contrail features
    - Describe the use cases of Contrail in the Enterprise
    - Explain Contrail Security Concepts
- Explain Contrail and Kubernetes integration
    - Explain Kubernetes architecture
    - Explain how Contrail integrates with Kubernetes
    - Describe workload isolation modes supported by Contrail
- Explain how Contrail Security is used with Kubernetes
- Describe Contrail Provisioning for Kubernetes
    - List main deployment methods for Contrail with Kubernetes
    - Explain provisioning with Contrail Command
- Explain Red Hat OpenShift architecture
- Explain how Contrail integrates with Red Hat OpenShift
- Explain how to launch OpenShift workloads and connect them over Contrail Virtual Networks
- Describe how Contrail Security is used with Red Hat OpenShift
- Explain vCenter architecture
- Describe 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
- Explain how VMware vRealize Orchestrator works with Contrail
- Describe Contrail service chaining
- Explain cSRX functionality and its use in Contrail service chains:
    - List the main features of Juniper cSRX
    - Describe multiple interface pods in Contrail
    - Configure In-Network service chains
- Explain how Routing is performed in Contrail Service Chains:
    - Describe the details of service chain routing
    - Use routing policies
    - Configure route aggregation in service chains
- Describe advanced Contrail service chain operations
    - Describe service chain load balancing
    - Explain service chain health checks
    - Configure Source NAT
    - Configure Distributed Source NAT
    - Describe Host-Based Firewalls
    - Perform service chain troubleshooting

Course content subject to change. See www.juniper.net/courses for the latest details.

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COURSE CONTENT

DAY 1

1 Course Introduction

2 Contrail Overview

- Describe Contrail and its enterprise use cases
  - List Contrail products and key Contrail features
  - Describe the use cases of Contrail in the Enterprise
  - Explain Contrail Security Concepts

3 Using Contrail with Kubernetes

- Explain Contrail and Kubernetes integration
  - Explain Kubernetes architecture
  - Explain how Contrail integrates with Kubernetes
  - Describe workload isolation modes supported by Contrail
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4 Contrail Security for Kubernetes

- Understand how Contrail Security is used with Kubernetes

5 Contrail Provisioning for Kubernetes

- Describe Contrail Provisioning for Kubernetes
  - List main deployment methods for Contrail with Kubernetes
  - Explain provisioning with Contrail Command

Lab 1: Contrail and Kubernetes Integration

6 Using Contrail with Red Hat OpenShift

- 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

7 Contrail for VMware Overview

- Describe VMware vCenter and Contrail Integration
- Contrail and VMware vRealize Orchestrator

8 Using Contrail vCenter Fabric Manager Plugin

- Using Contrail vCenter Fabric Manager Plugin
- Securing vCenter Workloads with Contrail Security

Lab 3: Contrail and vCenter Integration

9 Using Contrail Virtual Machine

- Using Contrail Virtual Machine
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10 Contrail Service Chains Introduction

- Describe Contrail service chaining

11 Service Chaining with cSRX and Contrail

- Explain cSRX functionality and its use in Contrail service chains
  - List the main features of Juniper cSRX
  - Describe multiple interface pods in Contrail
  - Configure In-Network service chains

Lab 4: Creating Contrail Service Chains with cSRX

12 Service Chain Routing

- Explain how Routing is Performed in Contrail Service Chains
  - Describe details of service chain routing
  - Use routing policies
  - Configure route aggregation in service chains

13 Advanced Service Chaining with Contrail

- Describe advanced Contrail service chain operations
  - Describe service chain load balancing
  - Explain service chain health checks
  - Configure Source NAT
  - Configure Distributed Source NAT
  - Describe Host-Based Firewalls
  - Perform service chain troubleshooting

Lab 5: Advanced Service Chain Operation and Troubleshooting

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