

# Juniper Cloud Fundamentals (JCF)

## COURSE OVERVIEW

This three-day course is designed to provide students with the foundational knowledge required to work with Juniper Contrail. The course summarizes cloud concepts, virtual networks, and cloud management. Key topics include fundamental cloud concepts, Linux virtualization, network virtualization, software defined networking (SDN), Network Functions Virtualization (NFV), and an introduction to OpenStack, Kubernetes, and Contrail.

### COURSE LEVEL

Introductory

### AUDIENCE

Individuals responsible for planning and coordinating cloud enabled networks and services in data center, private cloud, public cloud, hybrid cloud, service provider, and enterprise WAN environments.

### PREREQUISITES

- Basic TCP/IP skills
- Basic network understanding
- General understanding of data center environments
- General understanding of enterprise WAN environments
- Basic understanding of virtualization
- Completion of the *Getting Started with Cloud* eLearning course

### ASSOCIATED CERTIFICATION

[JNCIA-Cloud](#)

### RELEVANT JUNIPER PRODUCT

- Contrail
- SRX Series

### RECOMMENDED NEXT COURSE

*Cloud Automation Using Contrail (CAC)*

### CONTACT YOUR REGIONAL EDUCATION SERVICES TEAM:

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### OBJECTIVES

- Identify fundamental cloud concepts
- Identify the concepts of Linux virtualization
- Identify the concepts of Linux namespaces
- Identify the concepts of containerization
- Identify the basics of Network Virtualization
- Introduction to NFV and SDN
- Introduction to OpenStack
- Identify the key concepts of OpenStack Configuration
- Identify the basics of OpenStack Networking
- Identify the basics of Kubernetes
- Describe Kubernetes interfaces Identify the key concepts of Kubernetes configuration
- Introduction to Juniper Cloud Native Contrail Networking
- Identify the basics of Cloud Native Contrail Networking configuration

### DAY 1

1

#### Course Introduction

2

#### Fundamental Cloud Concepts

- Identify key cloud concepts
- Describe components of cloud architecture
- Identify Juniper solutions for cloud infrastructure

3

#### Linux Virtualization

- Overview of the Linux architecture
- Describe the concept of Linux virtualization

#### Lab 1: Linux Virtualization

4

#### Linux Namespaces

- Overview of the Linux containment features
- Describe the concept of network namespaces
- Describe the concept of Linux bridging

#### Lab 2: Linux Namespaces

*Continued on the next page.*

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## COURSE CONTENTS

### DAY 1 (contd.)

#### 5 Containerization

- Describe containerization using Docker
- Describe Docker networking

Lab 3: Containerization

Lab 4: cSRX

#### 6 Network Virtualization

- Describe concepts of virtual networks
- Describe how to extend virtual network

Lab 5: Network Virtualization

### DAY 2

#### 7 Network Functions Virtualization and Software-Defined Networking

- Describe the concepts of Software-defined networking (SDN)
- Describe the concepts of Network Functions Virtualization (NFV)

#### 8 Introduction to OpenStack

- Describe the OpenStack fundamentals
- Describe OpenStack UI

Lab 6: OpenStack Configuration—WebUI

#### 9 OpenStack Configuration

- Identify the OpenStack interfaces
- Describe the OpenStack orchestration concepts
- Describe how to create instances in OpenStack

Lab 7: OpenStack Configuration—CLI

#### 10 OpenStack Networking

- Describe OpenStack networks and security groups
- Describe OpenStack routing
- Describe the concept of Floating IP addresses and load balancing

Lab 8: OpenStack Networking

### DAY 3

#### 11 Introduction to Kubernetes

- Overview of Kubernetes fundamentals

Lab 9: Kubernetes Basics

#### 12 Kubernetes Networking

- Describe how to provision a Kubernetes cluster
- Describe Kubernetes networking

Lab 10: Kubernetes Networking

#### 13 Introduction to Cloud Native Contrail Networking

- Overview of Contrail Networking
- Describe the features of Contrail Networking

#### 14 Contrail Basic Configuration

- Overview of the installation requirements
- Explore the Contrail UI
- Describe how to create a virtual network in Contrail
- Describe how to create basic security controls

Lab 11: Contrail Basic Configuration

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