Juniper Cloud Fundamentals

Education Services

COURSE OVERVIEW

This three-day course provides students with the foundational knowledge required to work with basic cloud components in a Juniper environment. The course summarizes cloud concepts, virtual networks, containerization, and cloud management.

COURSE LEVEL

Introductory

AUDIENCE

Individuals who want a basic understanding of cloud solutions using Juniper products, virtualization, OpenStack, Red Hat OpenShift, and containerization, including Docker and Kubernetes

PREREQUISITES

- A basic networking knowledge and a general understanding of data center environments
- A general understanding of enterprise WAN environments, and basic understanding of virtualization
- A general understanding of Linux and basic Linux CLI commands
- A basic understanding of containerization and some experience using Docker or equivalent knowledge
- Completion of the *Getting Started with Cloud* e-learning course

RELATED CERTIFICATION

JNCIA-CLOUD

RECOMMENDED NEXT COURSE

Implementing Cloud-Native Contrail Networking

CONTACT YOUR REGIONAL EDUCATION SERVICES TEAM:

Americas: training-amer@juniper.net
EMEA: training-emea@juniper.net
APAC: training-apac@juniper.net

Key topics include:

- Fundamental cloud concepts
- Linux virtualization concepts
- Linux namespace concepts
- Linux containerization
- Virtual network basics
- Software-defined networking (SDN) and Network Functions Virtualization (NFV)
- OpenStack basics and OpenStack networking
- Kubernetes operations and various Kubernetes networking utilities
- Red Hat OpenShift key concepts

Through demonstrations and hands-on labs, students will gain experience in configuring and monitoring cloud automation tools and using various cloud configuration formats. Students will also become familiar with several cloud-native applications. Students will learn and better identify the Juniper solutions for cloud infrastructure, including virtualization (vSRX, vMX), and containerization (cSRX, cRPD).

OBJECTIVES

- Identify the key fundamental cloud concepts.
- Identify the concepts of Linux virtualization.
- Identify the concepts of Linux namespaces.
- Identify the concepts of Linux containerization.
- Identify the basics of network virtualization.
- Describe the main concepts of SDN and NFV.
- Describe the fundamentals of OpenStack.
- Identify the key concepts of the OpenStack configuration.
- Identify the basics of OpenStack networking.
- Identify the basics of Kubernetes.
- Identify the key concepts of Kubernetes networking.
- Identify the key concepts of Red Hat OpenShift.

Juniper Cloud Fundamentals

Education Services

COURSE CONTENTS

DAY 1

1 Course Introduction

2 Fundamental Cloud Concepts

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

3 Linux Virtualization

- Describe virtualization techniques
- Describe the Linux architecture
- Examine key virtualization concepts

Lab 1: Linux Virtualization

4 Linux Namespaces

- Describe Linux namespaces and other kernel containment features
- Describe network namespaces
- Identify the concept of routing instance segregation

Lab 2: Linux Namespaces

5 Containerization

- Describe a container
- Define the Docker architecture
- Examine the process of creating a container using Docker
- Describe Docker networking

Lab 3: Containerization

Lab 4: cSRX

6 Network Virtualization

- Explain the concepts of a virtual network
- Describe how to extend virtual networks

Lab 5: Network Virtualization

DAY 2

7 Software-Defined Networking and Network Functions Virtualization

- Describe SDN architecture and its benefits
- Describe NFV architecture and its benefits
- Summarize the relationship between SDN and NFV

8 Introduction to OpenStack

- Describe the basics of OpenStack
- Discuss OpenStack services
- Review basic OpenStack concepts
- Create and manage OpenStack instances

Lab 6: OpenStack web UI Configuration

9 OpenStack Configuration

- Describe the OpenStack CLI
- Examine the OpenStack API
- Describe orchestration through Heat templates

Lab 7: OpenStack CLI Configuration

10 OpenStack Networking

- Explain how OpenStack networking is implemented
- Determine how to create a network
- Describe security groups for VMs
- Explain how to set up OpenStack routing
- Describe the concept of floating IP addresses
- Review the load-balancing techniques

Lab 8: OpenStack Networking

Continued on the next page.

Juniper Cloud Fundamentals

Education Services

COURSE CONTENTS (continued)

DAY 3

11 Introduction to Kubernetes

- Explain the fundamentals of Kubernetes
- Describe the Kubernetes objects
- List the Kubernetes tools
- Illustrate the basics of KubeVirt
- Define Kubernetes namespaces

Lab 9: Basic Kubernetes

12 Kubernetes Networking

- Describe Kubernetes networking
- Examine connecting applications with services
- Review a multitier application deployment on a Kubernetes cluster

Lab 10: Kubernetes Networking

13 Red Hat OpenShift

- Describe the relationship between Kubernetes and OpenShift
- Explain the installation process for OpenShift
- Navigate the Web UI for OpenShift
- Create an application using the OpenShift Web UI
- Navigate the OpenShift CLI
- Create an application using the OpenShift CLI

JCF20240307