Current Technologies
Computer Learning Centers

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Platinum Learning

Designing and Implementing Cisco Service Provider Cloud Network Infrastructure v1.0 (SPCNI)

WHERE GREAT TRAINING HAPPENS EVERYDAY!

Designing and Implementing Cisco Service Provider Cloud Network Infrastructure v1.0 (SPCNI)

Course Duration

5 days

Course Price

$4,300.00
40 CLCs

Methods of Delivery

In-Person ILT
Virtual ILT
Onsite ILT

About this Class

The Designing and Implementing Cisco Service Provider Cloud Network Infrastructure training teaches you how to design and implement virtualization cloud infrastructures in a service provider network. You will learn about virtualized network function infrastructures and how to use programmability and orchestration to manage virtualization cloud infrastructures. You will also learn about cloud computing and implementation of cloud interconnect and data center interconnect solutions. In addition, you will learn how to monitor and secure virtualization cloud infrastructures and provide optimization and high availability within the infrastructures.

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How you will benefit

This class will help you:

- Design and implement virtualization cloud infrastructures in a service provider network
- Learn about virtualized network function infrastructures
- Learn how to use programmability and orchestration to manage virtualization cloud infrastructures
- Learn about cloud computing
- Learn about cloud interconnect and data center interconnect solutions
- Learn how to implement various interconnect solutions
- Learn how to monitor and secure virtualization cloud infrastructures and provide optimization and high availability within the infrastructures
- Earn 40 CE credits toward recertification

Why Attend with Current Technologies CLC

- Our Instructors are the top 10% rated by Cisco
- Our Lab has a dedicated 1 Gig Fiber Connection for our Labs
- Our Labs run up to Date Code for all our courses

Who Should Attend

The job roles best suited to the material in this course are:

- System Engineers
- Technical Support Personnel
- Channel Partners
- Resellers

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Objectives

After taking this course, you should be able to:

- Get an overview of Cisco Network Function Infrastructure, Cisco Network Infrastructure Manager, Cisco Virtualized Infrastructure Manager (VIM), and Cisco Network Service Orchestrator (NSO) Virtualized Infrastructure Manager
- Understand the concept of networking and deployment operation in OpenStack platform
- Get an overview of the security features available in Cisco Network Functions Virtualization (NFVI) solution
- Describe the application hosting architecture on a Cisco IOS XR router
- Introduce containers and describe container architecture
- Describe Kubernetes concepts, such as Kubernetes objects, and how nodes, pods, and clusters fit into them
- Describe cloud computing, cloud deployment models, cloud service models, and Carrier-Neutral Facilities (CNFs)
- Implement and configure Multi-Protocol Label Switching (MPLS), Segment Routing (SR), and SRv6
- Describe the operation and data flow of the Layer 3 Virtual Private Network (VPN) control plane
- Configure Label Distribution Protocol (LDP) and Border Gateway Protocol (BGP) security and optimization options
- Describe Interior Gateway Protocol (IGP) control plane security mechanisms

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Objectives

After taking this course, you should be able to:

- Configure unicast reverse path forwarding, Media Access Control Security (MACsec), and remote-triggered black-hole filtering
- Get an overview of high-availability technologies and multi-homing scenarios in the service provider network
- Describe the benefits, enablement, implementation, and configuration of Segment Routing Traffic Engineering (SR-TE)
- Describe Quality of Service (QoS) options for public cloud connectivity
- Discuss high availability mechanisms used in routing (anycast) and services Domain Name System (DNS)
- Implement On-Demand Next Hop
- Comprehend and implement model-driven telemetry and use Cisco ThousandEyes for enhanced network visibility and management
- Describe the basic concepts, history, and purpose of telemetry, including the telemetry push model and telemetry collectors
- Discuss the efficiency and ease of use of various encoding methods, including Google Protocol Buffers (GPB), Compact GPB, and Key-value GPB, as well as JavaScript Object Notation (JSON) and transport protocols
- Describe gNMI subscription modes, gRPC outputs, performance with different encodings, and key ideas related to gRPC
- Describe features, the architecture, and components of Cisco Crosswork Network Controller (CNC)

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Course Outline

Module 1: Cisco NFV Infrastructure

Module 2: Service Provider Model-Driven Programmability

Module 3: Network Orchestration using NSO

Module 4: Container Orchestration

Module 5: Cloud Computing

Module 6: MPLS and Segment Routing

Module 7: Cloud Interconnect Solutions

Module 8: Data Center Interconnect Solutions

Module 9: Service Provider Control Plane Security

Module 10: Service Provider Data Plane Security

Module 11: Service Provider High Availability

Module 12: Service Provider Core Optimization

Module 13: Service Provider Performance Monitoring

Module 14: Cisco Crosswork Network Controller

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Lab Outline

- Lab 1: Deploy a VNF Using OpenStack
- Lab 2: Configure and Verify Devices by Using Model-Driven Programmability
- Lab 3: Network Orchestration using NSO
- Lab 4: Configure and Verify Application Hosting Within a Docker Container
- Lab 5: Configure and Verify Segment Routing
- Lab 6: Configure and Verify SRv6
- Lab 7: Configure and Verify Layer 3 VPN
- Lab 8: Configure and Verify EVPN VPWS
- Lab 9: Implement BGP Security
- Lab 10: Implement RTBH Filtering
- Lab 11: Configure and Verify SR TI-LFA Using IS-IS
- Lab 12: Configure and Verify SR TI-LFA Using OSPF
- Lab 13: Configure and Verify SR-TE Using IS-IS
- Lab 14: Configure and Verify SR-TE Using OSPF
- Lab 15: Configure and Verify ODN and Flexible Algorithm
- Lab 16: Configure and Verify Model-Driven Telemetry