# Current Technologies Computer Learning Centers

**iliii cisco** Partner

Platinum Learning

**Designing and** Implementing **Cisco Service Provider Cloud** Network Infrastructure v1.0 (SPCNI) WHERE GREAT TRAINING HAPPENS EVERYDAY!

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Page 1 of 7

## Current Technologies Computer Learning Centers

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www.ctclc.com



WHERE GREAT TRAINING HAPPENS EVERYDAY!

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

#### **Course Duration**

5 days

#### **Course Price**

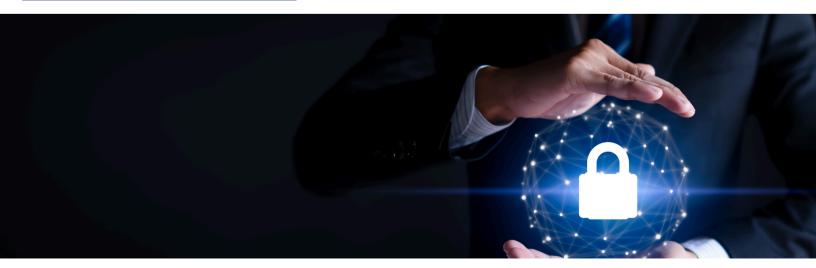
\$4,300.00 40 CLCs

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

#### 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

Page 3 of 7



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

#### 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

Page 4 of 7



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

#### 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)

Page 5 of 7



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

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

#### 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

Page 7 of 7