Designing Cisco Data Center Infrastructure

Category: Infrastructure & IT Operations | **Vendor:** Cisco

Duration: 40.00 hours (5 days) **32.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format:	Instructor Led - Online
Certification:	Cisco Certified Specialist – Data Center Design, Cisco Certified Network Professional (CCNP) Data Center
Related Exam:	300-610

Course Overview

The Designing Cisco Data Center Infrastructure (DCID) training focuses on data center design based on Cisco solutions and technologies. The training includes theoretical content and design-oriented case studies that are in the form of activities. The training includes information on designing data centers with Cisco components and technologies. It covers network designs with virtualization, Layer 2 and Layer 3 technologies and routing protocols, and data center interconnect design options. Also covered are device virtualization technologies such as virtualized network devices with virtual appliances, including virtual switches, virtual routers, and virtual firewalls. Storage and SAN design is covered, including an explanation of Fibre Channel networks. Design practices for the Cisco Unified Computing System (UCS) solution based on Cisco UCS B-Series and C-Series servers, Cisco UCS-X are covered. Management and orchestration topics feature Cisco UCS Manager, Nexus Dashboard Fabric Controller (NDFC), and Cisco Intersight, with additional emphasis on automation solutions such as programmability, Ansible, and Terraform. The training also addresses the integration of artificial intelligence, real-world use cases, and the design of AI-ready infrastructure.

This training prepares you for the 300-610 DCID v1.2 exam. If passed, you earn the Cisco Certified Specialist – Data Center Design certification and satisfy the concentration exam requirement for the Cisco Certified Network Professional (CCNP) Data Center certification.

What to Expect in the Exam

Designing Cisco Data Center Infrastructure (300-610 DCID) v1.2 is a 90-minute exam associated with the Cisco Certified Specialist – Data Center Design certification and satisfies the concentration exam requirement for the CCNP Data Center certification.

This exam tests your knowledge of data center infrastructure design, including:

- Network
- Compute
- Storage network
- Automation

How You'll Benefit

This training will help you:

- Make design choices for optimal data center infrastructure performance, virtualization, security, and automation
- Gain the practical and theoretical knowledge necessary to design a scalable, reliable, and intelligent data center based on Cisco technologies
- Qualify for professional-level job roles in the high-demand area of enterprise-class data center environments
- Prepare for the 300-610 DCID v1.2 exam
- Earn 40 CE credits toward recertification

About This Course

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Who Should Attend

- Network Designers
- Network Administrators
- Network Engineers
- Systems Engineers
- Data Center Engineers
- Consulting Systems Engineers
- Technical Solutions Architects
- Cisco Integrators and Partners
- Server Administrators
- Network Managers
- Storage Administrators
- Program Managers
- Project Managers

Prerequisites & Entry Requirements

General Prerequisites:

There are no formal prerequisites for this training. However, the knowledge and skills you are recommended to have before attending this training are:

- Implement data center networking, including Local Area Network (LAN) and Storage Area Network (SAN)
- Describe data center storage
- Implement data center virtualization
- Implement Cisco Unified Computing System
- Implement data center automation and orchestration with the focus on Cisco Application Centric Infrastructure (ACI), Cisco Nexus Dashboard, and Cisco Intersight
- Describe products in the Cisco Data Center Nexus and Multilayer Director Switch (MDS) families

To fully benefit from this course, you should have completed the following courses or obtained the equivalent level of knowledge:

- Implementing and Administering Cisco Solutions (CCNA)
- Understanding Cisco Data Center Foundations (DCFNDU)
- Implementing and Operating Cisco Data Center Core Technologies (DCCOR)

Learning Outcomes

Upon successful completion of this course, participants will be able to:

- Describe the physical design of modern data centers and different network types
- Describe how to design and manage the physical layer infrastructure of modern data centers
- Understand the multi-layered concept of data center redundancy, encompassing hardware, software, topological, and site-level resiliency
- Describe the Layer 2 forwarding options and protocols that are used in a data center
- Describe the Layer 3 forwarding options and protocols that are used in a data center
- Describe virtual infrastructure options and their considerations when deploying
- Describe overlay networks and operation of VXLAN and ACI
- Describe Fabric Interconnect operation and connectivity
- Describe Cisco UCS hardware options and hardware design
- Describe UCS connectivity for LAN and SAN
- Describe design aspects of UCS servers, networking, and hardware
- Describe physical design of modern data centers and different network types
- Describe the storage options for the compute function and the different RAID levels from a high-availability and performance perspective
- Describe Fibre Channel concepts and architecture
- Describe Fibre Channel concepts and architecture
- Describe Fibre Channel topologies and design
- Describe the hyperconverged solution and integrated systems
- Describe security threats and solutions in the data center
- Describe advanced data center security technologies and best practices
- Describe security options in the storage network
- Describe RBAC and integration with directory servers to control access rights on UCS Manager
- Describe key concepts in artificial intelligence, focusing on traditional AI, machine learning, and deep learning techniques and their applications.
- Describe generative AI, its challenges, and future trends, while examining the nuances between traditional and modern AI methodologies
- Explain how AI enhances network management and security through intelligent automation, predictive analytics, and anomaly detection
- Describe the importance of AI-specific hardware in reducing training times and supporting the advanced processing requirements of AI tasks
- Describe key network challenges from the perspective of AI/ML application requirements

- Explain the mechanisms and operations of RDMA and RoCE protocols
- Describe the role of optical and copper technologies in enabling AI/ML data center workloads
- Understand the compute hardware required to run AI/ML solutions
- Describe sustainable AI infrastructure practices, focusing on environmental and economic sustainability
- Describe Cisco network management models and license management approaches
- Provide learners with knowledge and skills to manage and automate compute infrastructure lifecycle using Cisco Intersight and related platforms for scalable, secure hybrid data centers
- Gain expertise in orchestrating, automating, and monitoring modern data center networks using Cisco Nexus Dashboard and its suite of integrated services
- Describe the design considerations of datacenter automation through programmability
- Analyze and plan for using orchestration with Ansible and Terraform to deploy, configure and operate Cisco data centers

Detailed Course Outline

- Data Center Topologies
- Layer 1 Connectivity
- Data Center Redundancy
- Layer 2 Connectivity
- Layer 3 Connectivity
- Virtual Resources
- Overlay Networks
- Fabric Interconnect Connectivity
- Cisco Unified Computing System Server Options
- Cisco UCS Network Design
- Cisco Unified Computing System Server Design
- Cisco Unified Computing System Configuration
- Storage Options and Design
- Fibre Channel Networks
- Storage Virtualization
- Fibre Channel Topologies
- Hyperconverged and Integrated Systems

- Basic Data Center Security
- Advanced Data Center Security
- Storage Security
- Cisco Unified Computing System Role-Based Access Control
- Fundamentals of AI
- Generative AI
- AI Use Cases
- AI-Enabling Hardware
- Key Network Challenges and Requirements for AI Workloads
- Application-Level Protocols
- AI Transport
- AI Compute Resources
- AI Sustainability
- Network and License Management
- Compute Management and Orchestration
- Network Orchestration
- Data Center Programmability and Automation
- Infrastructure as Code Automation

🎓 Certification Path

Cisco Certified Specialist – Data Center Design, Cisco Certified Network Professional (CCNP) Data Center

Exam: 300-610

Skills You Will Learn:

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- Describe how to design and manage the physical layer infrastructure of modern data centers
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deploy, configure and operate Cisco data centers

Frequently Asked Questions

Q: What delivery options are available for Designing Cisco Data Center Infrastructure?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: What certification does this course prepare me for?

The Designing Cisco Data Center Infrastructure course helps prepare you for the Cisco Certified Specialist – Data Center Design, Cisco Certified Network Professional (CCNP) Data Center certification path.

Q: Which exam does this course prepare me for?

This course prepares you for the 300-610 official exam. You can take this exam at any exam center across United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online wherever you are located.

Q: How many CPD hours does this course provide?

The 5-day Designing Cisco Data Center Infrastructure course provides up to 32.5 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Designing Cisco Data Center Infrastructure training?

The training takes place over 5 day(s), with each day lasting approximately 40.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Designing Cisco Data Center Infrastructure?

Yes, we provide corporate training, dedicated training, and closed classes for Designing Cisco Data Center Infrastructure. Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: Designing Cisco Data Center Infrastructure, Cisco Professional Level Data Center - CCNP, DCID

Q: Why choose Nexus Human for Designing Cisco Data Center Infrastructure?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Designing Cisco Data Center Infrastructure training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

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