

Cisco 300-610 Designing Cisco Data Center Infrastructure (2026)

Prepare for Cisco 300-610 DCID 2026. Covers Nexus, ACI, storage networking, and automation for data center design.

IT Certifications Instructor: Brian Mitchell • 5 sections • 44 lessons • 14.75h total

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About this course

Preparing for the Cisco 300-610 exam can feel overwhelming with the depth of data center technologies involved. This course breaks down the 2026 exam blueprint into manageable, practical lessons. We will walk you through the core design principles for Cisco Nexus, ACI, storage networking, and automation, using real scenarios that mirror what you will face on the job and in the exam.

You will learn how to design scalable data center infrastructures using step-by-step methodologies. The course includes practical case studies, downloadable design templates, and problem-solving sessions focused on key technologies like VXLAN, Fibre Channel, and service insertion. We focus on the how and why behind each design choice so you can tackle the exam and apply these skills in your production environment.

Course curriculum

Section 1: Foundations and Exam Blueprint Overview

- **Decoding the 2026 300-610 Exam Blueprint (12m)**
We'll break down the official Cisco exam topics for 2026, highlighting key weightings and focus areas to guide your study plan effectively.
- **Core Data Center Design Methodologies (18m)**
Learn the step-by-step frameworks for hierarchical and modular network design, focusing on availability, scalability, and security.
- **Essential Nexus and ACI Architecture Concepts (22m)**
A practical comparison of traditional Nexus NX-OS and Cisco ACI architectures to set the stage for deep-dive design decisions.
- **High Availability and Redundancy Strategies (15m)**
Understand how to design for fault tolerance using FHRP, LACP, and vPC, ensuring zero single points of failure.
- **Layer 2 and Layer 3 Connectivity Fundamentals (25m)**
Review the critical design choices between spanning tree, fabricpath, and OTV for L2, and OSPF/BGP for L3 underlays.
- **Introduction to Data Center Automation Tools (9m)**
Get a high-level overview of Ansible, Python, and DCNM, and understand their role in modern data center design and deployment.
- **Time Management and Study Strategies (8m)**
A real-world guide to pacing your study, using practice exams, and focusing on the most heavily weighted exam topics.

Section 2: Cisco Nexus Design (Core Concepts)

- **Designing a Scalable Nexus vPC Domain (28m)**
Step-by-step guide to configuring and designing vPC for active-active gateway connectivity and loop prevention.
- **FabricPath Design for Layer 2 Scalability (19m)**
Learn how to design a loop-free Layer 2 fabric using FabricPath, including topology and routing protocol integration.
- **VXLAN BGP EVPN Design Principles (34m)**
Deep dive into designing an overlay network using VXLAN with BGP EVPN for modern data center requirements.
- **Nexus 9000 Hardware and Chassis Design (14m)**
A practical look at choosing the right Nexus 9000 hardware, line cards, and power supplies for your specific design needs.
- **Designing Nexus Infrastructure Services (21m)**
Incorporating services like NetFlow, NTP, and Syslog into your Nexus design for monitoring and operations.

- **Nexus Security Design: ACLs and CoPP (16m)**
Designing secure control and data planes using Control Plane Policing and strategic Access Control Lists.
- **Real-World Case Study: Nexus Migration (11m)**
Analyze a case study on migrating a legacy network to a modern Nexus fabric, focusing on design trade-offs.
- **Troubleshooting Common Nexus Design Issues (23m)**
A problem-solving session focused on common vPC, FabricPath, and VXLAN design and implementation failures.
- **QoS Design for Nexus Switching (17m)**
Learn how to implement Quality of Service policies to prioritize voice, video, and storage traffic in your design.

Section 3: Cisco ACI Design Deep Dive

- **ACI Fabric and Spine-Leaf Architecture Design (26m)**
Understand the physics and logic of ACI fabric, including hardware selection and cabling best practices.
- **Designing ACI Policies, EPGs, and Contracts (32m)**
Master the ACI policy model by designing application profiles, EPGs, and contracts for real-world applications.
- **L3Out Design and External Connectivity (29m)**
Step-by-step guide to designing L3Out connections for bridging ACI with external networks and the internet.
- **VMM Domain Integration Design (24m)**
Learn how to design the integration between ACI and VMware vCenter or Microsoft Hyper-V for seamless VM mobility.
- **Service Insertion and Layer 4-7 Service Chaining (27m)**
Design workflows for integrating physical and virtual firewalls and load balancers into the ACI fabric.
- **ACI Multi-Site and Stretched Domain Design (31m)**
Explore the design considerations for connecting multiple ACI sites for disaster recovery and business continuity.
- **ACI Security and Microsegmentation Design (18m)**
Leverage ACI contracts and filters to design a zero-trust security model within your data center.
- **Real-World Case Study: ACI for a Financial Institution (13m)**
Analyze a complex ACI design scenario with strict security and compliance requirements.

Section 4: Storage Networking and Advanced Services

- **Fibre Channel Design: VSANs and Zoning (22m)**
Design a robust Fibre Channel fabric, including VSAN creation, zoning strategies, and fabric best practices.
- **Designing FCoE and Unified Fabric (19m)**
Learn the design principles for converged networks, integrating Fibre Channel over Ethernet into your DC.

- **iSCSI Storage Network Design (15m)**
A practical guide to designing reliable and secure iSCSI networks for block storage access.
- **Cisco MDS Switch Design and Security (23m)**
Deep dive into designing with Cisco MDS switches, including port security and fabric binding.
- **Cisco UCS Fabric Interconnect Design (28m)**
Step-by-step design of UCS Manager domains, including uplink, server, and storage connectivity.
- **Service Profiles and Server Templates (31m)**
Design stateless server policies using Service Profiles to automate server provisioning and hardware recovery.
- **HyperFlex (HX) System Design (25m)**
Understand the design requirements for a HyperFlex hyperconverged infrastructure, from nodes to clusters.
- **Designing for Cloud and Edge Computing (12m)**
Explore hybrid cloud connectivity designs and edge computing considerations for the modern data center.

Section 5: Automation, Programmability, and Final Prep

- **Infrastructure as Code (IaC) for Data Center Design (18m)**
Learn how to design with automation in mind, using Terraform and Ansible for repeatable infrastructure builds.
- **Python Scripting for Cisco Devices (26m)**
A practical session on writing Python scripts using Netmiko and NAPALM to automate device configuration.
- **Using Cisco DCNM for Automation (14m)**
Design and deploy fabric configurations at scale using Cisco Data Center Network Manager APIs.
- **REST API and NETCONF/YANG Design (21m)**
Understand how to design network management and automation using modern programmatic interfaces.
- **Designing for Telemetry and Monitoring (17m)**
Incorporate gNMI, Model-Driven Telemetry, and SNMP into your design for proactive network health.
- **Full-Scale Design Review: Multi-Tier DC (32m)**
A comprehensive whiteboard session building a complete data center design from the ground up.
- **Common Exam Pitfalls and How to Avoid Them (11m)**
A candid discussion on tricky exam questions, common misconceptions, and key topics to double-check.
- **Final Practice Exam Walkthrough Part 1 (35m)**
Work through a set of challenging practice questions, explaining the reasoning behind each correct answer.
- **Final Practice Exam Walkthrough Part 2 (33m)**
Continuation of the practice exam session, focusing on scenario-based design questions.
- **Downloadable: Nexus and ACI Design Checklist (5m)**
Get a downloadable PDF checklist to use for your final review and on-the-job data center designs.

- **Next Steps: Beyond the 300-610 Exam (7m)**

Advice on specializing further, pursuing CCIE Data Center, and staying current with Cisco technologies.

- **Course Wrap-Up and Exam Day Tips (6m)**

Final words of encouragement and practical tips for staying calm and focused on your exam day.

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