

Cisco Data Center Design

This Cisco Data Center Network Design training shows you how to manage, configure, and improve Cisco data centers.

[CBT Nuggets course material](#) →

WEEK 1

Identify Data Center Principles

160 min.

Intro	2
The Purpose of the Data Center	10
Where is the Data Center?	11
Data Center Availability	9
The Physical Data Center	12
Review and Quiz	4

Describe Data Center Networking

Overview	1
Intro	1
DC Network Technology	12
The Spine-Leaf Architecture	11
SDN and ACI	11
Data Center Interconnects	7
Cisco Hardware	8
Review and Quiz	4

Describe Data Center Solutions

Overview	1
Intro	1
Compute	11
Storage	14
Hyperconvergence	8
Cisco Hardware	6
Automation	14

WEEK 2**158 min.**

Review and Quiz 3

Describe Redundancy and High Availability

Overview 1

Intro 1

Hardware Redundancy 12

Fabric Extenders 11

Switch Redundancy 8

Power Redundancy 9

Management Network 8

Review and Quiz 4

Evaluate Data Center L2 Connectivity

Overview 1

Intro 1

Endpoint Mobility 14

iSCSI Traffic 13

Data Center Pod Architecture 10

STP and VXLAN Fabrics 9

Review and Quiz 4

Describe Data Center Link Bundling

Overview 1

Intro 1

Standard Port Channels 12

Virtual Port Channels 10

Enhanced VPC (EVPC) 13

VPC+ 9

WEEK 3**156 min.**

Review and Quiz 3

Explain Spanning-Tree Protocol

Overview 1

Intro 1

PVST+ 14

STP Port Blocking and TCNs 12

Rapid PVST+ 9

Rapid STP Port Types 8

Multiple Spanning Tree 7

Review and Quiz 4

Design STP in the Data Center

Overview 1

Intro 1

Choosing STP Mode 9

Topology-based STP Extensions 10

Loop-prevention STP Extensions 11

Bridge Assurance 9

STP Design 8

Review and Quiz 4

Explain VXLAN and EVPN

Overview 1

Intro 1

VXLAN and VNIs 10

VXLAN and Spine-Leaf 7

VXLAN Data Plane 10

VXLAN Control Plane - Flood and Learn 12

WEEK 4

153 min.

VXLAN Control Plane - EVPN 9

Review and Quiz 4

Evaluate Virtual Port-Channels

Overview 1

Intro 1

Introducing VPCs 8

VPC Anatomy 8

Building a VPC Domain 9

Type Inconsistencies 7

VPC Traffic Flow 8

Review and Quiz 7

Evaluate VPC Topologies

Overview 1

Intro 1

VPC and FHRPs 9

VPC and FHRP Design 8

VPC and STP 11

VPC L2 Topologies 9

VPC L3 Topologies 9

Review and Quiz 3

Explain VPC Configuration Options

Overview 1

Intro 1

Auto-Recovery 7

Delay Restore 7

ARP Synchronization and Peer Gateway 10

VPC Roles 11

WEEK 5

155 min.

LACP Configuration 9

Review and Quiz 4

Design Virtual Port-Channels

Overview 1

Intro 1

VPC Failure Scenarios 12

VPC Object Tracking 10

Designing VPC in the Data Center 19

Review and Quiz 5

Evaluating Data Center L3 Connectivity

Overview 1

Intro 1

IPv4 and IPv6 14

Hierarchical Network Design 10

L3 Connectivity 9

Data Center L3 Network Design 8

Review and Quiz 2

Evaluate Data Center L3 Routing and Forwarding

Overview	1
Intro	1
Data Center Routing	12
Scalable Data Center Routing	10
IP Mobility	12
Optimized L3 Forwarding	10

WEEK 6

155 min.

Review and Quiz	4
-----------------	---

Evaluate Data Center L3 Services

Overview	1
Intro	1
Load Balancers	12
North-South Security	12
East-West Security	11
Services Insertion	11
Review and Quiz	4

Describe L3 Multicast

Overview	1
Intro	1
Multicast Traffic	10
L2 and L3 Multicast	10
Multicast Routing	12
Multicast Trees	9
Review and Quiz	4

Explain Multicast Protocols

Overview	1
Intro	1
PIM Modes of Operation	14
IGMP and MLD	12
IGMP and MLD Snooping	11
PIM Roles	10

WEEK 7

155 min.

Review and Quiz	4
-----------------	---

Explain Multicast in the Data Center

Overview	1
Intro	1
L2 Multicast Addressing	14
L2 Multicast	11
Multicast and VPCs	9
PIM and VXLAN	10
Review and Quiz	5

Describe ACI Concepts

Overview	1
Intro	1
ACI Foundations	12
ACI Resiliency and Simplicity	12
ACI Security	10
ACI Automation and Flexibility	12
Review and Quiz	3

Evaluate Data Center Interconnects

Overview	1
Intro	1
The Need for DCIs	8
DCI L2 Challenges	7
DCI L3 Challenges	6
DCI WAN Technologies	10
Pseudowire Technologies	8
Review and Quiz	5

WEEK 8

Evaluate DCI Overlay Technologies

151 min.

Overview	1
Intro	1
Overlay Transport Virtualization (OTV)	12
VXLAN as DCI	8
ACI Multipod	10
ACI Multisite	9
Review and Quiz	4

Explain OTV

Overview	1
Intro	1
OTV Control Plane	12
OTV Data Plane - Unicast	7
OTV Data Plane - Multidestination	9
Multihoming and Authoritative Edge Devices (AEDs)	8
OTV Design Considerations	9
Review and Quiz	4

Design Data Center Interconnects

Overview	1
Intro	1
OTV vs VXLAN	9
VPC as DCI	9
Multicast and DCIs	10
MACsec Encryption	11
VM Migrations	11

WEEK 9

152 min.

Review and Quiz	3
-----------------	---

Evaluate Device and Routing Virtualization

Overview	1
Intro	1
VLANs and Bridge Domains	11
VRF Lite	12
Virtual Device Contexts (VDCs)	13
VXLAN	9
Review and Quiz	3

Evaluate Data Center Management Options

Overview	1
Intro	1
Nexus Mgmt Interfaces	12
Connectivity Management Processor (CMP)	7
DCNM Overview	8
DCNM Modes of Operation	11
Review and Quiz	5

Evaluate Redundancy Options

Overview	1
Intro	1
Backups	13
Disaster Recovery	7
Disaster Recovery Solutions	10
Backup vs Disaster Recovery	10
Failover Types	7
Review and Quiz	2

WEEK 10

Design Data Center Redundancy

58 min.

Overview	1
Intro	1
Hot, Warm, and Cold Failover	9
Cloud Failover and DRaaS	11
Recovery Point Objective (RPO)	9
Recovery Time Objective (RTO)	10
DCI Networking	12
Review and Quiz	3