CCIE Data Center

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Session Abstract

If you're starting the journey to gain your CCIE Data Center number, this session is for you!

It introduces the new curriculum of the CCIE Data Center Program and highlights the changes the exams (written and lab).

The main objective of this session is to provide candidates with clear expectations of what to expect with the new exams.

While not covering or teaching detailed technical content, this includes some illustrations and sample questions.

There is no prerequisite to this session.
Disclaimer

• Not all topics discussed today appear on every exam

• Due to time restraints, we are unable to discuss every feature and topic described in the exam blueprint
Agenda

- **Overall CCIE Program**
- CCIE Data Center Update
- Written Exam Sample Questions
- Lab Exam Case Studies
- Preparation Materials
- Questions & Answers
Cisco Certified Internetwork Export (CCIE) Program Overview
CCIEs Worldwide

• Most highly respected IT certification
  • for more than 20+ years!

• Industry standard
  • validating expert skills and experience

• Demonstrate strong commitment and investment to networking career, life-long learning, and dedication to remaining an active CCIE
Expert Level Tracks

**Design**
Emphasizes network design principles and theory at the infrastructure level

**Collaboration**
Collaboration, Unified Communications, or Voice and Video Network for design, implementation and troubleshooting

**Data Center**
Datacenters infrastructure, storage, compute and virtualization

**Routing & Switching**
Networking across LAN and WAN interfaces and variety or routers and switches

**Security**
VPN solutions and security for Layer 2 and Layer 3 network infrastructure, application protocols and OS

**Service Provider**
IP fundamentals and technologies in building an extensible service provider network

**Wireless**
Wireless networking with solid understanding of WLAN technologies from Cisco
CCIE / CCDE Certification Process

**Written Exam**
- Pearson Location
- 2 hours
- 90-110 questions
- No documentation
- Immediately scored

First attempt within 18 months

**Practical Exam**
- Select Cisco Locations
- 8 hours lab
  - Configurations
  - Troubleshooting
- Cisco Documentation
- Score within 48 hours

PASS

CCIE / CCDE

First attempt within 18 months
Proactive and Holistic Candidate Feedback

Input
- Cisco Business Units
- Cisco Technology groups
- Cisco Technical Support teams (TAC, AS, ..)
- Cisco-Internal and Cisco-External Subject Matter Experts
- Customer Advisory Boards
- Customer Focus Groups
- Customer and Cisco field surveys (Marketing)
- Cisco Product Manager, Marketing Manager, Program Manager

Create or Refresh Exam Content

Feedback
- Candidate Exam and Item Comments
- Candidate Satisfaction Surveys
- Customer Service Cases
- EAG (Exam Advisory Groups)
- Cisco Learning Network
- Blogs

Exam Live

Launch Exam

Exams
Performance Assessment

• Validity
  • Reliability
  • Fairness
  • Congruency
  • Relevancy

• Intended use of the test scores
• Definition of Minimally Qualified Candidate
Agenda

- Overall CCIE Program
- **CCIE Data Center Update**
- Written Exam Sample Questions
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CCIE Data Center v2.0 Curriculum Overview

- Certification process unchanged
- Exam **curriculum** and **format** changed (July 2016)
- Designed and validated with industry experts (Cisco internals and externals)
- Aligned with evolution of job role and relevant technologies

**Check the official information on CLN**

https://learningnetwork.cisco.com/community/certifications/ccie_data_center
# CCIE Data Center v2.0 (Unified Blueprint)

<table>
<thead>
<tr>
<th>#</th>
<th>Topic</th>
<th>% in Written exam(400-151)</th>
<th>% in Lab Exam</th>
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<tbody>
<tr>
<td>1.0</td>
<td>Cisco Data Center L2/L3 Technologies</td>
<td>24%</td>
<td>27%</td>
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<tr>
<td>2.0</td>
<td>Cisco Data Center Network Services</td>
<td>12%</td>
<td>13%</td>
</tr>
<tr>
<td>3.0</td>
<td>Data Center Storage Networking and Compute</td>
<td>23%</td>
<td>26%</td>
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<td>4.0</td>
<td>Data Center Automation and Orchestration</td>
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<td>14%</td>
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<td>5.0</td>
<td>Data Center Fabric Infrastructure</td>
<td>18%</td>
<td>20%</td>
</tr>
<tr>
<td>6.0</td>
<td>Evolving Technologies</td>
<td>10%</td>
<td>N/A</td>
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</table>

Full blueprint available on the Cisco Learning Network
CCIE Data Center v2.0 Written Exam

• New Number: 400-151
• 120 minutes, 90 – 110 independent items
  • MC-SA/MA; DnD; Point & Click
• English only
• Pearson VUE
• Closed-book
• Score directly available
CCIE Data Center v2.0 Lab exam

• 480 minutes, multiple exam modules
  • Configure, Troubleshoot scenarios to given specifications

• English only

• Cisco Lab locations including mobile labs.

• Open-book (Cisco Documentation)

• Score available usually within 48h
CCIE Data Center v2.0 Lab Exam Format

- New DIAG module
- Existing Configuration and Troubleshooting Module
- Overall cut-score AND per-module minimum score

Web-based delivery

DIAG
(1 h)
No Device

Configuration and Troubleshooting
(7 h)
Devices

Cut Score
CCIE Data Center v2.0 New Diagnostic Module

- Assessing new skills
  - Analyzing, correlating and discerning multiple sources of documentation
- Support ticket scenario
- Fixed 30 minutes, 100% Web-based, no device needed
- Deterministic grading
  - Item format similar to multiple choices item
CCIE Data Center v2.0 vs v1.0 Equipment List

**CCIE Data Center v1.0**
- MDS 9222i
- Nexus7009
  - (1) Sup
  - (1) 32 Port 10Gb (F1 Module)
  - (1) 32 Port 10Gb (M1 Module)
- Nexus5548
- Nexus2232
- Nexus 1000v
- UCS C200 Series Server
  - VIC card for e-series
- UCS-6248 Fabric Interconnects
- UCS-5108 Blade Chassis
  - B-200 Series Blades
  - Palo mezzanine card
  - Emulex mezzanine card
- Cisco Application Control Engine Appliance - ACE4710
- Dual attached JBODs

**CCIE Data Center v2.0**
- APIC Cluster
- Nexus 9336 ACI Spine
- Nexus 9372
- Nexus 7004
  - (1) Sup2E
  - (2) 48 Port 10Gb (F3 Module)
- Nexus 5672
- Nexus 2348
- Nexus 1000v
- UCS C220 M4 Series Rack Server
  - VIC card for C-Series
- UCS-6248 Fabric Interconnects
- UCS-4308 M-Series Chassis
  - UCS M142 Compute Cartridge
- UCS-5108 B-Series Chassis
  - B-200 M4 Series Blades
  - Palo mezzanine card
  - VIC 1340 Card for B-Series
- Dual attached JBODs
CCIE Data Center v2.0 Lab Summary

Overall Cut-score to Pass

Minimum Score

DIAGNOSTIC
- 60 min
- Independent tickets
- No Console access to the devices
- Multiple source of information (like diagrams, emails, and logs)

Skills Tested
- Perceive network issues
- Analyze network issues symptoms, identify and describe the root cause
- Correlate information from multiple sources
- Identify appropriate solutions
- Troubleshooting methodologies
- Technology listed in the blueprint

TROUBLESHOOTING and CONFIGURATION
- 420 min (7h)
- Dependent items
- Console access to the devices
- Topology specific for configuration scenario

Skills Tested
- Abstract functional element of the entire network environment
- Understand how the infrastructure components interoperate
- Implement and troubleshoot technology areas listed in the blueprint
- Quickly resolve network issues
- Troubleshooting methodologies application
- Fix and verify the solution
CCIE Data Center
Written Exam Overview
# CCIE Data Center Written Exam (350-080) version 1.0 Curriculum Overview

<table>
<thead>
<tr>
<th>#</th>
<th>Topic</th>
<th>% in exam</th>
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<tr>
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<td>Cisco Data Center Architecture</td>
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<tr>
<td>2.0</td>
<td>Cisco Data Center Infrastructure-Cisco NX-OS</td>
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<tr>
<td>3.0</td>
<td>Cisco Storage Networking</td>
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<tr>
<td>4.0</td>
<td>Cisco Data Center Virtualization</td>
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<tr>
<td>5.0</td>
<td>Cisco Unified Computing System</td>
<td>30%</td>
</tr>
<tr>
<td>6.0</td>
<td>Cisco Application Networking Services</td>
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Full blueprint available on the Cisco Learning Network: [https://learningnetwork.cisco.com/docs/DOC-13984](https://learningnetwork.cisco.com/docs/DOC-13984)
Step 1: CCIE DC Written Exam:

• Available worldwide at any Pearson VUE testing facility. Costs may vary due to exchange rates and local taxes (VAT, GST)

• Two-hour exam with 90-110 multiple-choice questions

• Closed book; no outside reference materials allowed

• Pass/Fail results are available immediately following the exam; the passing score is set by statistical analysis and is subject to periodic change

• Waiting period of five calendar days to retake the exam

• Candidates who pass a CCIE written exam must wait a minimum of six months before taking the same number exam

• From passing written, candidate must take first lab exam attempt within 18 months

• No “skip-question” functionality
Written Exam Objective

• Candidates who fail any CCIE or CCDE written exam must wait for a period of 15 calendar days, beginning the day after the failed attempt, before retaking the same exam. (Effective August 2nd, 2014)

• Candidates may attempt any CCIE or CCDE written exam up to four times per rolling calendar year. Candidates cannot retake the same written exam more than four times per rolling calendar year regardless of passing or failing the exam. (Effective August 2nd, 2014)

http://www.cisco.com/web/learning/exams/policies.html#~Written,

• The goal of the DC written exam is to test concepts and theoretical knowledge of Cisco Data Center Technologies in the blue print

• Awareness of industry standard best practices, standard bodies, policy frameworks, and common RFC/BCP’s

• Lays foundation for Data Center lab exam
Agenda

• Overall CCIE Program
• CCIE Data Center Update
• **Written Exam Sample Questions**
• Lab Exam Case Studies
• Preparation Materials
• Questions & Answers
Q. What is the best description of the FCoE Initiation Protocol (FIP) function?

A. It is required to establish the point-to-point FCoE links with the first switch in the path
B. It is required to establish the point-to-point FCoE links with any switch across multiple Ethernet segments
C. It is not used to build the FCoE links
D. It is used to ensure lossless transport
Written Exam: Sample Question 2 MC-MA

Q: Which of the following two server characteristics cannot be configured via the UCS service profile? (Choose 2)

A. The number of vNICs and vHBAs to present to the OS
B. The server boot order
C. The amount of CPU and memory to present to the OS.
D. The server BIOS settings
E. The operating system to install
Q: Which of the following port-channel modes is appropriate for this topology?

A. lacp port-channel  
B. vPC-HM with manual subgroups  
C. static port-channel  
D. vPC-HM mac-pinning
Drag and Drop

Drag and drop from the column on the left to the column on the right the correct color scheme in right order for the UCS DIMM bank color.

 DIMM Bank COLOR

Black
White
Blue
Yellow
Red
Drag and Drop

Drag and drop from the column on the left to the column on the right the correct color scheme in right order for the UCS DIMM bank color.
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CCIE Data Center
Lab Exam Overview
CCIE Data Center Lab Exam version 1.0 Curriculum Overview

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Full blueprint available on the Cisco Learning Network: [https://learningnetwork.cisco.com/docs/DOC-13992](https://learningnetwork.cisco.com/docs/DOC-13992)
CCIE Data Center Lab Exam

- Candidates build a data center configuration based on supplied specifications
- Eight-hour exam requires working configurations and troubleshooting to demonstrate expertise
- Must achieve a pass mark scored from several sections that cover configuration and troubleshooting as per lab exam blueprint
- The point values for each question are shown on the exam
- Some questions depend upon completion of previous parts of the network

https://learningnetwork.cisco.com/community/certifications/ccie_data_center
## Retake policy: Lab Exam

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<tr>
<td>5</td>
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<td>180 Days</td>
</tr>
<tr>
<td>6</td>
<td>7</td>
<td>180 Days</td>
</tr>
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</table>

http://www.cisco.com/web/learning/exams/policies.html#~Lab,
CCIE DC Mobile Labs and Locations

- Brussels
- Dubai
- Bangalore
- Hong Kong
- Beijing
- Tokyo
- Sydney
- San Jose
- RTP

https://learningnetwork.cisco.com/docs/DOC-3224
https://learningnetwork.cisco.com/community/certifications/ccie_data_center/lab_exam?tab=take-your-lab-exam
Data Center Lab Exam:

Equipment and Software Versions

The lab exam tests any feature that can be configured on the equipment and the NXOS versions indicated below. Occasionally, you may see more recent NXOS versions installed in the lab, but you will not be tested on the new features of a release unless indicated below.

- MDS 9222i
- Nexus 7009
- Nexus 5548
- Nexus 2224 / 2232
- Nexus 1000v
- UCS C200 Series Server
- UCS-6248 Fabric Interconnects
- UCS-5108 Blade Chassis (B200)
- Cisco Application Control Engine Appliance - ACE4710
- Dual attached JBODs

- NXOS v6.x on Nexus 7000 Switches
- NXOS v5.x on Nexus 5000 Switches
- NXOS v4.2.x on Nexus 1000v
- NXOS v5.x on MDS 9222i Switches
- UCS Software release 2.x for UCS-6248 Fabric Interconnect
- Software Release A5(1.x) for ACE 4710
- Cisco Data Center Manager software v5.x
CCIE DC Lab Exam:
Pre-Configuration

The Routers and Switches in Your Topology Are Preconfigured With:

- Basic IP addressing, hostname, passwords
- All pre-configured passwords are ‘cisco’
- Please read all instructions carefully

Do NOT change any pre-configuration on any devices unless explicitly stated in a question
CCIE DC Lab Exam:

Racks Are **Fully** Cabled

Candidates Do Not Have to Touch any Physical Equipment
CCIE Lab Exam:

Grading

- Proctors grade all lab exams
- Automatic tools aid proctors with simple grading tasks
- **Automatic tools** are never solely responsible for lab exam grading—proctors are
- Proctors complete grading of the exam and submits the final score within 48 hours
- No partial credit awarded on questions
- Points are awarded for **working solutions** only
- Some questions have multiple solutions
CCIE Data Center
Cisco Data Center Infrastructure – NXOS
Sample Lab Questions
Sample Lab Question: VDC

- Create Following VDCs and Assign ports as outlined below:

<table>
<thead>
<tr>
<th>Nexus 7000 Switch-1</th>
<th>Nexus 7000 Switch-2</th>
</tr>
</thead>
</table>

**VDC Name** | **Ports** |
---|---|
SW11 | E9/1-8,E10/1-8 |
SW12 | E9/9-16,E10/9-16 |
SW13 | E9/17-24,E10/17-24 |

**VDC Name** | **Ports** |
---|---|
SW21 | E9/1-8,E10/1-8 |
SW22 | E9/9-16,E10/9-16 |
SW23 | E9/17-24,E10/17-24 |
Solution:

Nexus 7000

vdc SW12 id 2
allocate interface Ethernet9/9-16
allocate interface Ethernet10/9-16
vdc SW13 id 3
allocate interface Ethernet9/17-24
allocate interface Ethernet10/17-24

Nexus 7000

vdc SW22 id 2
allocate interface Ethernet9/9-16
allocate interface Ethernet10/9-16
vdc SW23 id 3
allocate interface Ethernet9/17-24
allocate interface Ethernet10/17-24
Sample Lab Question: VPC

- Create vPC on Nexus 7000 as described below:
  - SW13 and SW23 are in vPC Domain 100
  - Use E9/21 and E9/22 on each switch as peer-link
  - Use E10/17 on each switch as peer-keepalive
    - IP address of SW13 is 10.1.1.25
    - IP address of SW23 is 10.1.1.26
  - Port E9/19 and E9/20 on SW13 and SW23 are in vPC 2
- Create vPC on Nexus 5000 as described below:
  - SW3 and SW4 are in vPC Domain 200
  - Use E1/5 and E1/6 on each switch as peer-link
  - Use Management port on each switch as peer-keepalive
    - IP address of SW3 is 10.113.8.3
    - IP address of SW4 is 10.113.8.4
  - Port E1/1 and E1/2 on SW3 and SW4 are in vPC 2
- Allow all VLANs on vPC link
Solution:

Feature vpc
vpc domain 100
  peer-keepalive destination 10.1.1.26 source 10.1.1.25 vrf default
  interface Ethernet9/21-22 switchport
  channel-group 1 mode active
  interface port-channel1
  switchport mode trunk
  vpc peer-link
  interface Ethernet9/19-20 switchport
  channel-group 2 mode active
  interface port-channel2
  switchport mode trunk
  vpc 2

Feature vpc
vpc domain 200
  peer-keepalive destination 10.113.80.4 source 10.113.80.3 vrf management
  interface Ethernet1/5-6 switchport
  channel-group 1 mode active
  interface port-channel1
  switchport mode trunk
  vpc peer-link
  interface Ethernet1/1-2 switchport
  channel-group 2 mode active
  interface port-channel2
  switchport mode trunk
  vpc 2

Feature vpc
vpc domain 100
  peer-keepalive destination 10.1.1.26 source 10.1.1.25 vrf default
  interface Ethernet9/21-22 switchport
  channel-group 1 mode active
  interface port-channel1
  switchport mode trunk
  vpc peer-link
  interface Ethernet9/19-20 switchport
  channel-group 2 mode active
  interface port-channel2
  switchport mode trunk
  vpc 2

Feature vpc
vpc domain 200
  peer-keepalive destination 10.113.80.4 source 10.113.80.3 vrf management
  interface Ethernet1/5-6 switchport
  channel-group 1 mode active
  interface port-channel1
  switchport mode trunk
  vpc peer-link
  interface Ethernet1/1-2 switchport
  channel-group 2 mode active
  interface port-channel2
  switchport mode trunk
  vpc 2

Cisco Live!
Sample Lab Question: Fabric Path

- Configure FabricPath as shown in the topology below
  - SW11 and SW21 are spine switches
  - SW12, SW22, SW13, and SW23 are leaf switches
  - Make sure VLAN 100 and 101 are reachable via FabricPath
Solution:

**SW11**
- install feature-set fabricpath
- Feature-set fabricpath
- Fabricpath switch-id 11
- Interface ethernet 9/1-4
  - switchport mode fabricpath
- Vlan 100
  - mode fabricpath
- Vlan 101
  - mode fabricpath

**SW12**
- Feature-set fabricpath
- Fabricpath switch-id 12
- Interface ethernet 9/9-10
  - switchport mode fabricpath
- Vlan 100
  - mode fabricpath
- Vlan 101
  - mode fabricpath

**SW13**
- Feature-set fabricpath
- Fabricpath switch-id 13
- Interface ethernet 9/17-18
  - switchport mode fabricpath
- Vlan 100
  - mode fabricpath
- Vlan 101
  - mode fabricpath

**SW21**
- install feature-set fabricpath
- Feature-set fabricpath
- Fabricpath switch-id 21
- Interface ethernet 9/1-4
  - switchport mode fabricpath
- Vlan 100
  - mode fabricpath
- Vlan 101
  - mode fabricpath

**SW22**
- Feature-set fabricpath
- Fabricpath switch-id 22
- Interface ethernet 9/9-10
  - switchport mode fabricpath
- Vlan 100
  - mode fabricpath
- Vlan 101
  - mode fabricpath

**SW23**
- Feature-set fabricpath
- Fabricpath switch-id 23
- Interface ethernet 9/17-18
  - switchport mode fabricpath
- Vlan 100
  - mode fabricpath
- Vlan 101
  - mode fabricpath
Sample Lab Question: OTV
Configure OTV on SW12 and SW24 to Extend VLAN 103 between Site-A and Site-B.

SW12 and SW24 can reach each other using IP network.

IP network is multicast enabled.
Solution:

**SW12**

```bash
!Configure the physical interface that OTV uses to reach
!the DCI transport infrastructure
interface ethernet 10/9
  ip address <IP-Address>
  ip igmp version 3
  no shutdown

!Configure the VLAN that will be extended on the
!overlay network
vlan 103

!Configure OTV including the VLANs that will be extended.
feature otv
  otv site-identifier 10
  interface Overlay1
    otv control-group 239.1.1.1
    otv data-group 232.1.1.0/28
    otv join-interface ethernet 10/9
  !Extend the configured VLAN
  otv extend-vlan 103
  no shutdown
```

**SW24**

```bash
!Configure the physical interface that OTV uses to reach
!the DCI transport infrastructure
interface ethernet 10/26
  ip address <IP-Address>
  ip igmp version 3
  no shutdown

!Configure the VLAN that will be extended on the
!overlay network
vlan 103

!Configure OTV including the VLANs that will be extended.
feature otv
  otv site-identifier 11
  interface Overlay2
    otv control-group 239.1.1.1
    otv data-group 232.1.1.0/28
    otv join-interface ethernet 10/26
  !Extend the configured VLAN
  otv extend-vlan 103
  no shutdown
```
Agenda

• Overall CCIE Program
• CCIE Data Center Update
• Written Exam Sample Questions
• Lab Exam Case Studies
• Preparation Materials
• Questions & Answers
Preparation and Study
Keeping your Eye on the Prize

• Be prepared to commit to at least 4-8 months

• Studying becomes a work/life commitment

• Home Lab where possible (N1K, UCSPE, VRL)

• Hands on Experience is a MUST (Remote labs included)

• Plan your success!
  • Set milestones/goals and do what’s needs to be done to achieve them.
  Pop Quiz Next
Pop Quiz

• Count the # of “F”s on this page

FINISHED FILES ARE OFTEN THE RESULT OF YEARS OF SCIENTIFIC STUDY COMBINED WITH THE EXPERIENCE OF YEARS

How many did you count?
Pop Quiz

• Count the # of “F”s on this page

FINISHED FILES ARE OFTEN THE RESULT OF YEARS OF SCIENTIFIC STUDY COMBINED WITH THE EXPERIENCE OF YEARS

How many did you count?
What does it take to pass a CCIE Lab Exam?

Skills

- Technical Competency
- Time Management
- Knowing Where to find information
- Attention to Detail
- Troubleshooting Skills
Lab Exam: Tips & Tricks

Before the exam

• Prepare for the exam!

• Plan your study
  • Do self assessment, “know what I don’t know”
  • Dedicate time per day
  • Always ask “What if”
  • Practice, practice and practice

• Learn how to browse on Cisco Documentation (sort, don’t search)

• Choose materials from trustworthy source

• Practice for speed and troubleshooting

Build a study plan that works for you
Don’t do it alone

• There are many groups, forums and study groups available.
  • 95% of successful CCIEs participate in a study group of some form.
  • On going groups available including Learning @ Cisco etc

• If you can’t team up locally, do it virtually
Lab Exam: Tips & Tricks

Day Before the Lab Exam

• Arrive the day prior, if you have to travel
  • Check Visa requirement in advanced

• Survey the lab location
  • Know exactly how to get to the office

• Plan the trip to the lab location
  • train timetable
  • book a taxi
  • etc
Lab Exam: Tips & Tricks

Night Before the Big Day

• Have a good dinner
• Have a good sleep
• Do whatever you enjoy
  Ensure readiness in both mind
  and body
• Mental Readiness for the BIG DAY
Lab Exam: Tips & Tricks “THE BIG DAY”

• Take time for Breakfast. Most important Meal of the Day.
• Reduce stress, arrive early and prepare IDs!
• Listen to the proctor’s guidelines
• **Re-draw the topology**: physical and logical (if needed)
• Manage your time! Stick to your strategy!
• Read the whole module, don’t forget the guidelines!
• Read, read and read the questions before asking for clarification from the proctor
• **Save the configuration often!**
• **Avoid last minute change!**
• Plan for “regression tests” and overall validations at the end of each module!
What Happens if I Get Stuck???

• If you get into a question and hit a wall (not sure what to do), make a note, move on and come back to it.

• Lab Exams are composed of multiple questions and multiple tasks. Weigh the score value against the time invested. Sometimes its better to skip a question and focus on the rest.

• Some questions may affect others. Many lab scenarios are treated as a datacenter solution – questions may have an impact on other outcome of another.
A Note on Lab Proctors

• Proctors are there to run the exam
• They are not there to help you on any technically related questions

• A Proctor will:
  • Clarify a Question
  • Deal with Hardware Issues if encountered

• A Proctor will not:
  • Solve or Troubleshoot Configuration Issues
  • Answer questions on how to configure devices (Confirming good/bad configuration)
  • Answer Questions regarding a choice of how to configure something
Lab Exam: Tips & Tricks

Aftermath

• If you pass
  • CONGRATULATION!

• If you fail
  • Release the anger! Do whatever you have to do
  • Try to switch from “Denial” to “Curious” quickly
  • Start looking for your mistakes
  • Repeat the scenarios in your own lab
  • Back to lab practice focusing on the failed scenarios
  • Book the next lab exam in 4 weeks time.
  • Even some of the best TAC engineers require multiple attempts!
  • If you are 100% sure the CCIE Program team is wrong ask for review*

*Additional Costs involved
Available Resources

• Learning @ Cisco – Forum for asking questions, support and free online resources such as webinars and other virtual events
  https://learningnetwork.cisco.com/community/certifications/ccie_data_center

• Recommended Reading List
  https://learningnetwork.cisco.com/docs/DOC-13986

• Recommended Training
  https://learningnetwork.cisco.com/docs/DOC-13985

• Online Resources
  https://learningnetwork.cisco.com/docs/DOC-13987

• Other Courses
Got a question after the session?

- Join the CCIE Data Center Study Group on CLN
  - https://learningnetwork.cisco.com/groups/ccie-data-center-study-group
    - Ask technical questions
    - Find study partner(s)

- Open a CertSupport case at http://www.cisco.com/go/certsupport

- Send me an email at munawaz@cisco.com
Cisco Certifications SME* Recruitment Program

http://www.cisco.com/go/certsme

- Directly influence Cisco Career Certifications (Design, Author, Review)
- Give back to community
- Experience with assessment techniques
- Join creativity with experience, knowledge and skills
- Use and sharpen technical expertise
- Collaborate and network with other engineers

* SME = Subject Matter Expert
Thank you.