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# Getting your CCNP Data Center Certification

Straight from the Source

Lukasz Rola, CCNP Data Center Exam Program Manager  
BRKCRT-2012a



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Webex spaces will be moderated by the speaker until June 17, 2022.



<https://ciscolive.ciscoevents.com/ciscolivebot/#BRKCRT-2012a>

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Event code: #2012



# Agenda

- Overview of CCNP Data Center track
- Exam blueprints & domains
- How to prepare for CCNP Data Center
- Training resources
- Q&A

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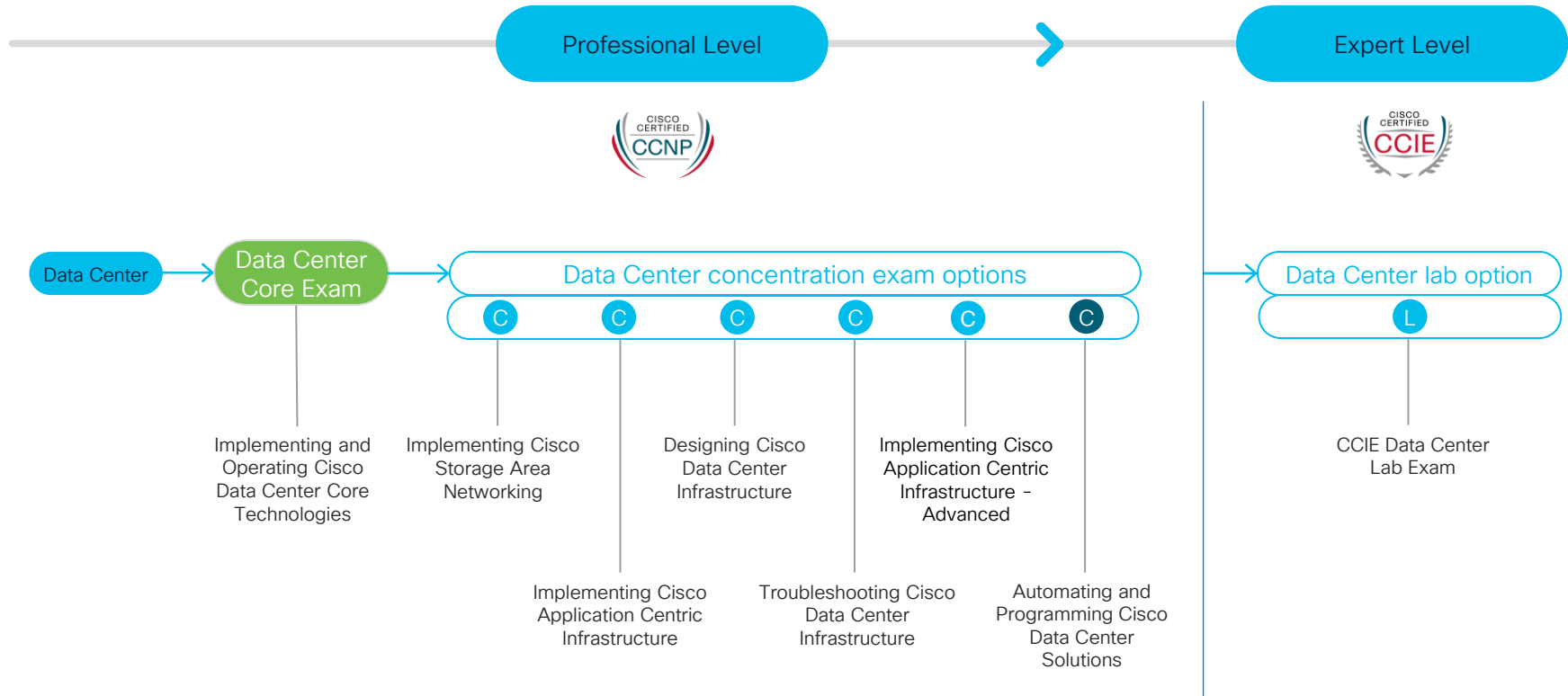


Appropriately  
difficult

# Hiring managers love certified candidates



# CCNP – Data Center certification track






# Preparing for your exams

# Exam Blueprint

<https://learningnetwork.cisco.com>

The Cisco Learning Network

Certifications ▾Communities ▾Webinars & Videos ▾Study Resources

[Certifications](#) / [CCNP Data Center](#) | [CCIE Data Center](#) / [350-601 DCCOR Exam Topics](#)

350-601 DCCOR Exam: Implementing and Operating Cisco Data Center Core Technologies

Exam Description

The Implementing and Operating Cisco Data Center Core Technologies v1.0 (DCCOR 350-601) exam is a 120-minute exam associated with the CCNP Data Center, Cisco Certified Specialist - Data Center Core, and CCIE Data Center certifications. This exam tests a candidate's knowledge of implementing core data center technologies including network, compute, storage network, automation, and security. The course, Implementing and Operating Cisco Data Center Core Technologies, helps candidates to prepare for this exam.

The following topics are general guidelines for the content likely to be included on the exam. However, other related topics may also appear on any specific delivery of the exam. To better reflect the contents of the exam and for clarity purposes, the guidelines below may change at any time without notice.

**[Download Complete List of Topics in PDF format](#)**

|                     |     |   |
|---------------------|-----|---|
| 1.0 Network         | 25% | ▾ |
| 2.0 Compute         | 25% | ▾ |
| 3.0 Storage Network | 20% | ▾ |
| 4.0 Automation      | 15% | ▾ |
| 5.0 Security        | 15% | ▾ |

# Deciphering the Blueprint:

350-601 DCCOR Exam:  
Implementing and Operating Cisco  
Data Center Core Technologies

## Task Verbs

### 1.0 Network 25%

---

- 1.1 **Apply** routing protocols
  - 1.1.a OSPFv2, OSPFv3
  - 1.1.b MP-BGP
  - 1.1.c PIM
  - 1.1.d FHRP
- 1.2 Apply switching protocols such as RSTP+, LACP and vPC
- 1.3 Apply overlay protocols such as VXLAN EVPN and OTV
- 1.4 Apply ACI concepts
  - 1.4.a Fabric setup
  - 1.4.b Access policies
  - 1.4.c VMM
  - 1.4.d Tenant policies
- 1.5 **Analyze** packet flow (unicast, multicast, and broadcast)
- 1.6 Analyze Cloud service and deployment models (NIST 800-145)
- 1.7 **Describe** software updates and their impacts
  - 1.7.a Disruptive / nondisruptive
  - 1.7.b EPLD
  - 1.7.c Patches
- 1.8 **Implement** network configuration management
- 1.9 Implement infrastructure monitoring such as NetFlow and SPAN
- 1.10 **Explain** network assurance concepts such as streaming telemetry

# Blueprint Verbs

What level is each task – depth of knowledge

Design

Troubleshoot

Configure

Describe

# 350-601 DCCOR Exam: Implementing and Operating Cisco Data Center Core Technologies

Exam blueprint

## 350-601 DCCOR

- 120-minute exam
- Associated with the CCNP and CCIE Data Center Certifications

## Domain / Weight

|     |                 |     |
|-----|-----------------|-----|
| 1.0 | Network         | 25% |
| 2.0 | Compute         | 25% |
| 3.0 | Storage Network | 20% |
| 4.0 | Automation      | 15% |
| 5.0 | Security        | 15% |

# Blueprint domain and tasks

## Domain 1

## Tasks

### Network

- 1.1 Apply routing protocols
- 1.2 Apply switching protocols such as RSTP+, LACP and vPC
- 1.3 Apply overlay protocols such as VXLAN EVPN and OTV
- 1.4 Apply ACI concepts
- 1.5 Analyze packet flow (unicast, multicast, and broadcast)
- 1.6 Analyze Cloud service and deployment models (NIST 800-145)
- 1.7 Describe software updates and their impacts
- 1.8 Implement network configuration management
- 1.9 Implement infrastructure monitoring such as NetFlow and SPAN
- 1.10 Explain network assurance concepts such as streaming telemetry

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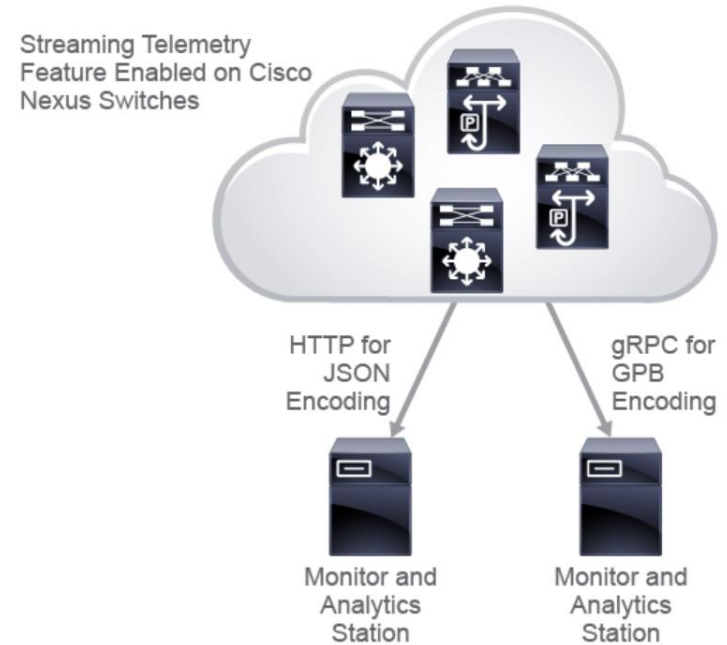
# Streaming Telemetry

Cisco Telemetry streaming consists of

**Data collection:** The telemetry data is collected from the NX-OS DME in branches of the object model specified using distinguished name (DN) paths.

**Data encoding:** The telemetry encoder encapsulates the collected data into the desired format for transporting, such as JSON and GPB.

**Data transport:** The telemetry data is typically transported from the Cisco NX-OS device to an external collector using HTTP for JSON encoding and gRPC for GPB encoding. The gRPC Agent on NX-OS provides a secure transport through TLS.



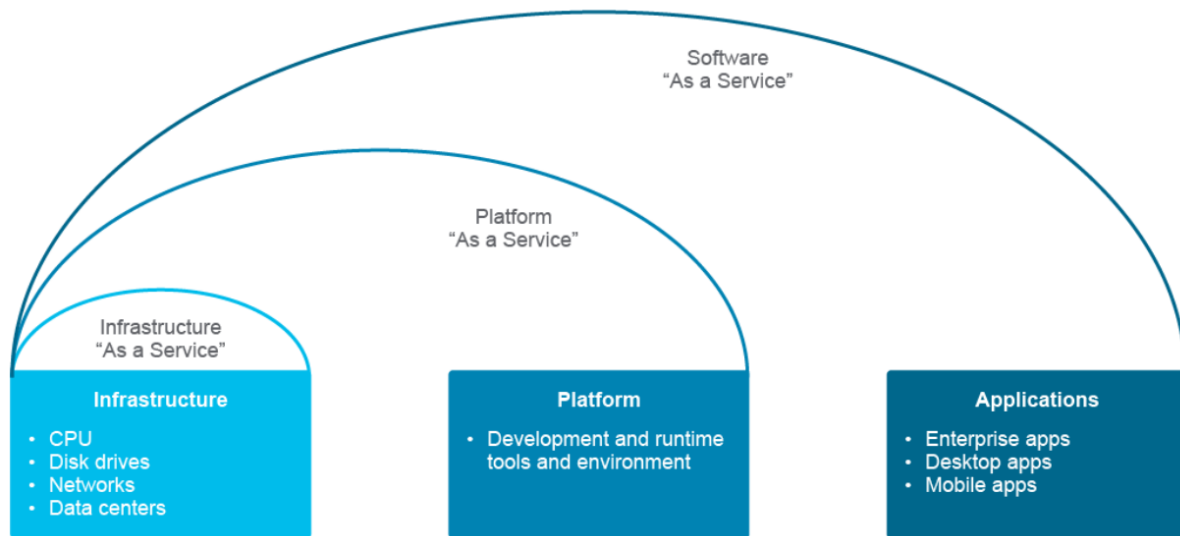


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# Cloud Deployments and Service Models

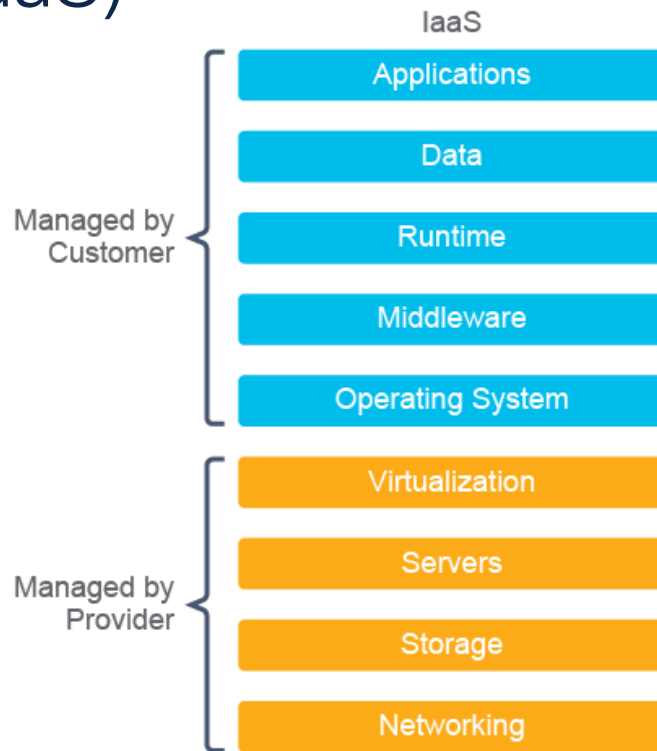
The service offers define the responsibilities for the management of the equipment and the software between the service provider and the customer.



# Infrastructure as a Service (IaaS)

The PaaS model has the following characteristics:

- Can provision computing resources
- Consumer can deploy and run arbitrary software
- Consumer does not manage or control the underlying cloud infrastructure
- Billed as a utility with predictable cost structure



# Cloud Deployment Models

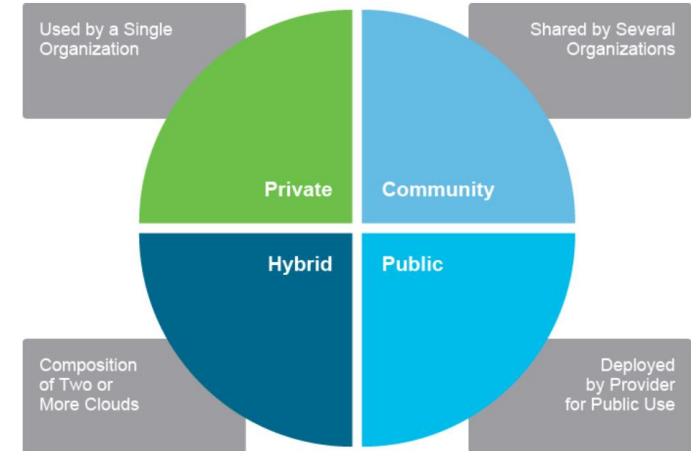
Cloud deployment models are based on the ownership model of the cloud infrastructure:

**Private cloud:** The cloud infrastructure is completely dedicated to a particular organization; there is no public access. Usually, it is located on the premises of the organization in question, although it may be outsourced.

**Public cloud:** The cloud infrastructure is offered by a third-party provider and is accessible by the general **public**. **There may be a fee for the service.**

**Hybrid cloud:** The cloud infrastructure is a mix of at least two (usually private and public) cloud models. Often the public cloud may supplement a private cloud.

**Community cloud:** The cloud infrastructure is commonly built by several organizations for the purposes of addressing shared concerns. The most common example is to provide facilities for mutual disaster recovery sites.

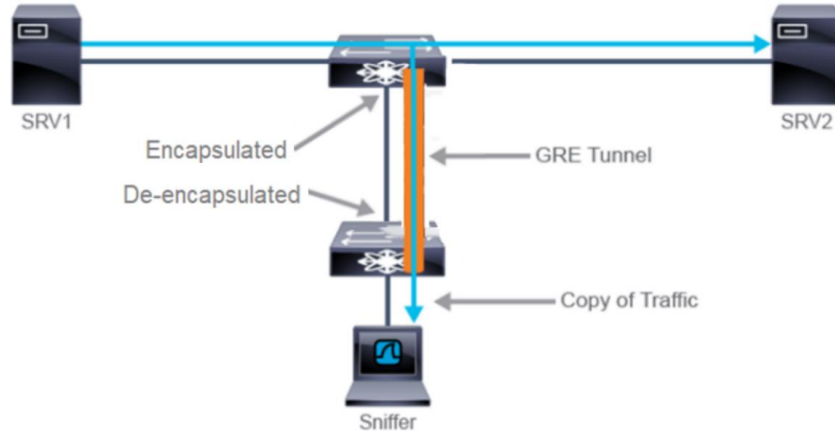


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# ERSPAN overview

The traffic is encapsulated at the source router and is transferred across the network. The packet is de-encapsulated at the destination router and then sent to the destination interface.



ERSPAN consists of an:

- ERSPAN source session,
- routable ERSPAN GRE-encapsulated traffic,
- an ERSPAN destination session.

You separately configure ERSPAN source sessions and destination sessions on different switches.

# Learning resources

# DCCOR course on Cisco Digital Learning



Blueprint  
structure

Hands-on  
Labs



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Table of Contents

[← Back to full menu](#)

Welcome to Implementing and Operating Cisco Data Center Core Technologies

Section 1:

Implementing Data Center Switching Protocols

1.1 Introduction

1.2 Spanning Tree Protocol

1.3 Port Channels Overview

1.4 Virtual Port Channels Overview

1.5 Summary Challenge

Section 2:

Implementing First-Hop Redundancy Protocols

Section 3:

Implementing Routing in Data Center

Section 4:

Implementing Multicast in Data Center

Section 5:

Implementing Data Center Overlay Protocols

Section 6:

Implementing Network Infrastructure Security

Section 7:

Describing Cisco

Implementing Data Center Switching Protocols

Spanning Tree Protocol

1.2 Implementing Data Center Switching Protocols

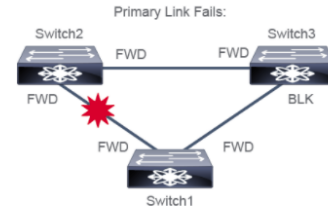
## Spanning Tree Protocol

Although you have several alternatives to STP that are available for your data center, STP is still a fairly popular technology in the data center environment. It is a Layer 2 control plane protocol that runs on switches to ensure that you do not create topology loops when you have these redundant paths in the network. STP features on the Cisco Nexus platform are similar to STP features on Cisco IOS platforms and include a number of enhancements that improve the basic STP functionality.

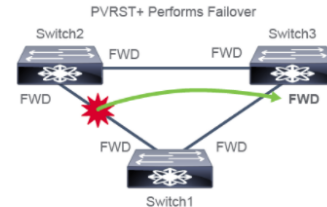
### Rapid PVST+ Overview

Rapid Per VLAN Spanning Tree Plus (Rapid PVST+) is an updated, faster implementation of STP that allows you to create one spanning tree topology for each VLAN. It is the default STP mode on Cisco Nexus switches. Rapid PVST+ is enabled by default on the default VLAN (VLAN1) and on all newly created VLANs in software. It provides for rapid recovery of connectivity following the failure of switch, a switch port, or a LAN.

Primary Link Fails:



PVRST+ Performs Fallover



Rapid Spanning Tree Protocol (RSTP) IEEE 802.1w represents the evolution of the IEEE 802.1D standard. The 802.1D terminology remains basically unchanged in 802.1w, as do most parameters, which makes it easier for users to configure the new protocol.

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30



# Self Study Materials

Organized by domain







## DCCOR Study Materials


350-601 DCCOR

Status: Not Registered Duration: 22 hrs 34 mins


[Back to CCIE Data Center Certification and Training](#)

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To launch these training resources, please be sure you are logged in to the Cisco Learning Network by clicking the profile icon in the upper right corner of the page, and have registered for the learning plan by clicking the blue "Add to My Learning" button on the right side of the page (or bottom of the page on a mobile device). [Learn more](#)

 22 hrs 34 mins

Welcome to the 350-601 DCCOR Study Material page. This page is designed to help you quickly find what you are looking for by organizing the content according to the exam topics.

*These resources are meant to supplement your learning experience and exam preparation. They are NOT designed to serve as a complete self-study program, but intended only as a suggested starting point.*

Plan activities

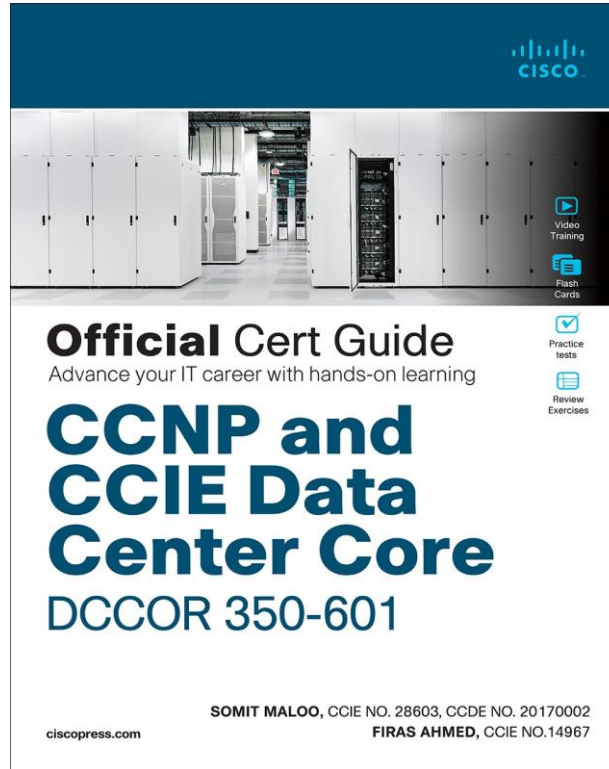
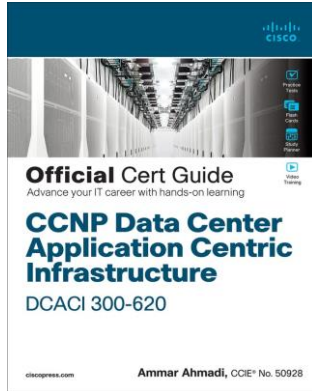
| Network*                                                                                                                   | Status: 0% | Duration: 14 hrs 46 mins       |
|----------------------------------------------------------------------------------------------------------------------------|------------|--------------------------------|
|  <a href="#">Configuring OSPFv2</a>       |            | 45 mins <a href="#">Launch</a> |
|  <a href="#">Configuring IS-IS</a>        |            | 23 mins <a href="#">Launch</a> |
|  <a href="#">Configuring Advanced BGP</a> |            | 54 mins <a href="#">Launch</a> |

# Cisco Learning & Certifications Communities

<https://learningnetwork.cisco.com/s/communities>

The screenshot displays the Cisco Learning Network interface. At the top, the header includes the title 'The Cisco Learning Network' and the Cisco logo. A navigation bar contains links for 'Certifications', 'Communities', 'Webinars & Videos', and 'Study Resources'. The main content area is titled 'Data Center Certifications Community' and features a welcome message: 'Welcome to the Data Center Certification Community. Connect with other members as you prepare for your exam.' A dropdown menu is open, listing various certification paths: 'All Communities', 'All Topics', 'CCNA Certification', 'Collaboration Certifications', 'CyberOps Certifications', 'Data Center Certifications' (highlighted), 'DevNet Certifications', 'Enterprise Certifications', 'Enterprise Wireless Certification', 'Security Certifications', 'Service Provider Certifications', 'CCDE Certification', 'Cisco Modeling Labs - Personal', and 'Community Impact'. Below the menu, there are tabs for 'Discussions', 'Articles', and 'Blogs'. A 'Sort by:' dropdown is set to 'Top Questions'. Three discussion posts are visible: 'National Password Day' (92 views, 4 likes, 8 replies), 'Registration open now for DevNet Expert' (711 views, 8 likes, 10 replies), and '2022 Check-In: How Can We Improve?' (258 views, 3 likes, 10 replies).

# Books, Video Courses, and Practice Tests



# DevNet Learning Labs and DevNet Sandboxes

<https://developer.cisco.com/learning/tracks>  
<https://developer.cisco.com/site/sandbox/>

The screenshot shows the DevNet Learning Labs interface. At the top, there's a navigation bar with 'DEVNET' and links for 'Discover', 'Technologies', 'Community', 'Support', 'Events', and 'New Announcement'. Below this, a breadcrumb trail reads 'Technology > Data Center > UCS'. The main heading is 'Choose a module to start learning'. A message says 'Please login to see your progress...'. The featured module is 'Introduction to ACI Programmability', described as 'This module introduces you to programmability options with the Cisco ACI SDN solution and provides hands on with ACI Toolkit, the simplest way to begin programming ACI.' It has a duration of '1 Hour 40 Minutes'. A list of topics includes: 'Understanding ACI', 'ACI Programmability Options', 'Introduction to ACI Toolkit', and 'Challenge: Use the ACI Toolkit to Collect and Report Critical Faults'. A 'Login to Start Module' button is at the bottom right. Below this, there's a section for 'Intermediate ACI Programmability' with a duration of '3 Hours' and topics like 'Creating ACI Scripts the Easy Way - WebArja', 'Reading back the ACI API', 'Add 'Site' to your ACI Python Scripts with Cobra', 'ACI Webhooks', and 'Challenge: Use Cobra to build an Application Health Dashboard'.

The screenshot shows the DevNet UCS Programmable Infrastructure page. The top navigation bar is identical to the previous screenshot. The breadcrumb trail is 'Technology > Data Center > UCS'. The main heading is 'UCS Programmable Infrastructure'. Below it, a paragraph states: 'UCS Unified APIs provide a common interface for Unified HyperFlex and hyperconverged UCS deployments. Combine the Unified APIs with UCS Director, Cloud Center and Intersight APIs for complete programmatic access for infrastructure, DevOps and application developers.' A 'Get Started' button is present. The section 'Start learning the UCS Unified APIs' follows. It contains two columns: 'UCS for Infrastructure Developers' and 'UCS for Application Developers'. The 'Infrastructure Developers' column lists 'Learn how to manage UCS Compute infrastructure with both UCS PowerTool, UCS Python SDK, Postman, and Redfish. Each module is an introduction to these two powerful UCS Compute tools that leverage the UCS API interfaces.' It includes links for 'Data Center PowerShell PowerTool UCS Python Intersight REST' and 'IMC Automation Redfish'. At the bottom, it shows '5 Modules', '14 Labs', and '7.0 hours'. The 'Application Developers' column lists 'Learn how to Automate Data Center resources with UCS Director APIs. UCS Director's native REST API, custom tasks with integrated JavaScript, Open Automation SDK and PowerShell integration enable complete automation capabilities for the Dat...'. It includes a link for 'Data Center REST UCS Automation - UCS Director'. At the bottom, it shows '1 Modules', '3 Labs', and '1.5 hours'.

# dCloud - Hands-On Labs, and Sandboxes

<https://dCloud.cisco.com>

The screenshot displays the dCloud Catalog web application. The top navigation bar includes the Cisco logo, 'dCloud', 'My Hub', 'Catalog' (active), 'Support', 'News', 'Community', 'Collections', and 'Make a Request'. On the right, there are icons for notifications, RTP, and a user profile.

The left sidebar contains three main sections:

- Content Producers:** Includes checkboxes for 'Advanced Services', 'Community Development', and 'dCloud'.
- Content Categories:** Includes checkboxes for 'Business Value Demo', 'Demonstration', 'Guided Demo', 'Instant Demo', 'Lab' (checked), and 'Sandbox' (checked).
- Solutions:** Includes checkboxes for 'Application Centric Infrastructure', 'Cloud', 'Collaboration', 'Contact Center', 'Data Center' (checked), and 'DevNet Sandbox'.

The main content area is titled 'Catalog' and features a 'Sort By' dropdown set to 'Name' and a 'Search Catalog' input field. Below this, a filter bar shows '23 results in: Lab x Sandbox x Data Center x'.

Three lab entries are visible:

- Cisco ACI 4.1 Automation v1**  
ID: 605886 | Published Date: 09-Oct-2019 18:10 | Tags: Lab, Data Center, Application Centric Infrastructure, Application Centric Infrastructure, Data Center Management and Automation, English  
Description: Automating ACI explores the use of popular automation tools running configuration tasks against an ACI network. See how these tools are used to configure ACI network interfaces, tenants/VRFs/BDs, contracts, and deploy a complete application stack.  
Actions: ★ Favorite, Related Documents, Schedule
- Cisco ACI 4.1 with VMware Lab v1**  
ID: 598078 | Published Date: 13-Sep-2019 12:08 | Tags: Lab, Data Center, Application Centric Infrastructure, Virtual Networking, Unified Computing System, Application Centric Infrastructure, Application Centric Infrastructure, English  
Description: This lab provides an introduction to Cisco ACI when deployed with VMware. Topics covered include APIC overview, VMM Domain creation, Tenants, Application Profiles, Contracts and Micro-segmentation.  
Actions: ★ Favorite, Related Documents, Schedule
- Cisco ACI 5.2 with VMware Lab v1**

# Questions?



# Technical Session Surveys

- Attendees who fill out a minimum of four session surveys and the overall event survey will get Cisco Live branded socks!
- Attendees will also earn 100 points in the Cisco Live Game for every survey completed.
- These points help you get on the leaderboard and increase your chances of winning daily and grand prizes.



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# Continue your education

- Visit the Cisco Showcase for related demos
- Book your one-on-one Meet the Engineer meeting
- Attend the interactive education with DevNet, Capture the Flag, and Walk-in Labs
- Visit the On-Demand Library for more sessions at [www.CiscoLive.com/on-demand](https://www.CiscoLive.com/on-demand)



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# Thank you

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