



Earning Your CCNP Enterprise Certification

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CCIEW#42079
BRKCRT-2008



Agenda

- Value of the Cisco Certification brand
- Roadmap and changes
- Preparing for the Enterprise exams
 - Enterprise Core Blueprint
 - Sample exam questions
 - Tools and resources
- Q&A

CISCO *Live!*

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Benefits of Cisco Certification

- ✓ More attractive to hiring companies
- ✓ and existing managers
- ✓ Ability to gain a higher salary

Keeps you in sync with changing technology

The benefits of certification are real:

92% feel more confident in their abilities

84% are more determined to succeed professionally

37% received pay increases of 30% or more

Cisco Certifications are time-honored proof you know what you're doing. Plus, they're ANSI and NIST certified, which means they're industry certs with greater value in the marketplace.

¹ [Pearson VUE 2023 Value of IT Certification](#)

Cisco Career Certifications

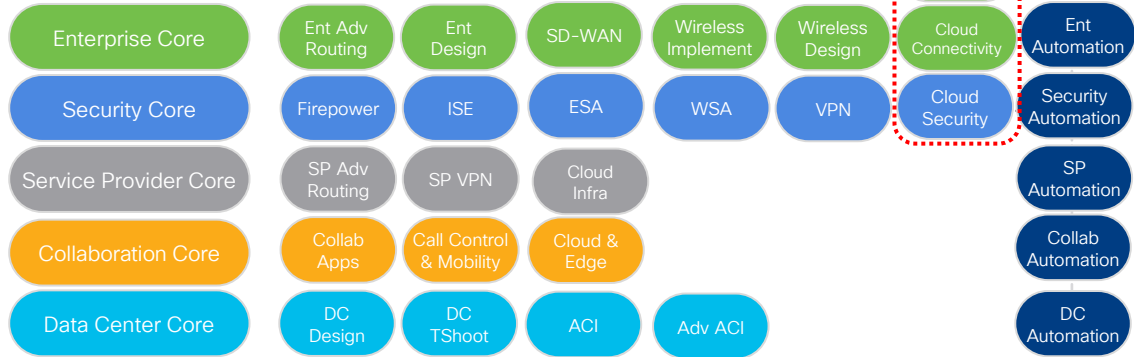


One Exam

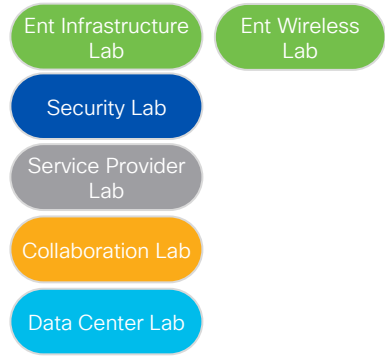
CCNA



Two Exams: Core + 1 Concentration



Core + Lab



One Exam

DevNet Associate



Two Exams: Core + 1 Concentration



Core + Lab

DevNet Expert



One Exam

CyberOps Associate



Two Exams: Core + 1 Concentration

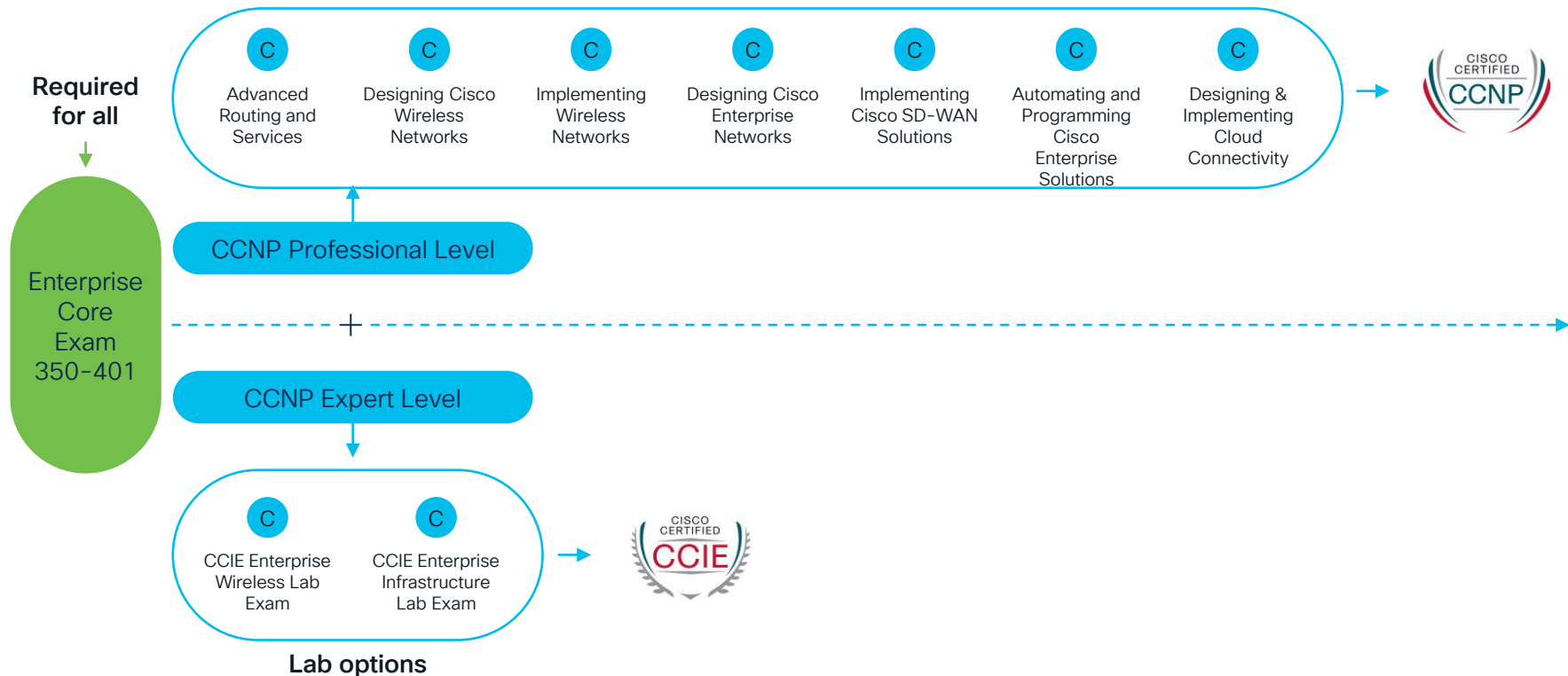


CyberOps Expert



CCNP = Core + 1 concentration (in any order)

Concentration exam options



Certification roadmap publishing process

Stay in sync with the latest updates on a regular, rotating schedule

How it works:

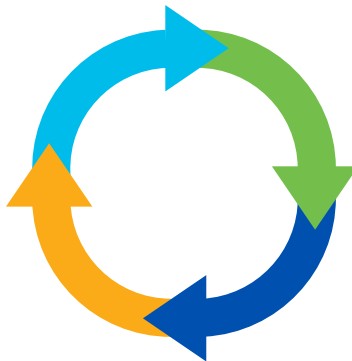
1. Cisco **reviews** each technology on the same quarterly schedule each year to make sure our exams align with the latest Cisco technologies.
2. We **announce** blueprint changes 3–6 months in advance along with revised exam topics and release notes, if applicable.
3. We **publish** the updated exam 3–6 months after the exam blueprint publication, if applicable.

Data Center & Collaboration

Q1: Review/Job Task analysis
Q2: New blueprints published
Q3: Updated exam go live

Security & CyberOps

Q4: Review/Job Task analysis
Q1: New blueprints published
Q2: Updated exam go live



Enterprise & DevNet

Q2: Review/Job Task analysis
Q3: New blueprints published
Q4: Updated exam go live

CCNA & Service Provider

Q3: Review/Job Task analysis
Q4: New blueprints published
Q1: Updated exam go live

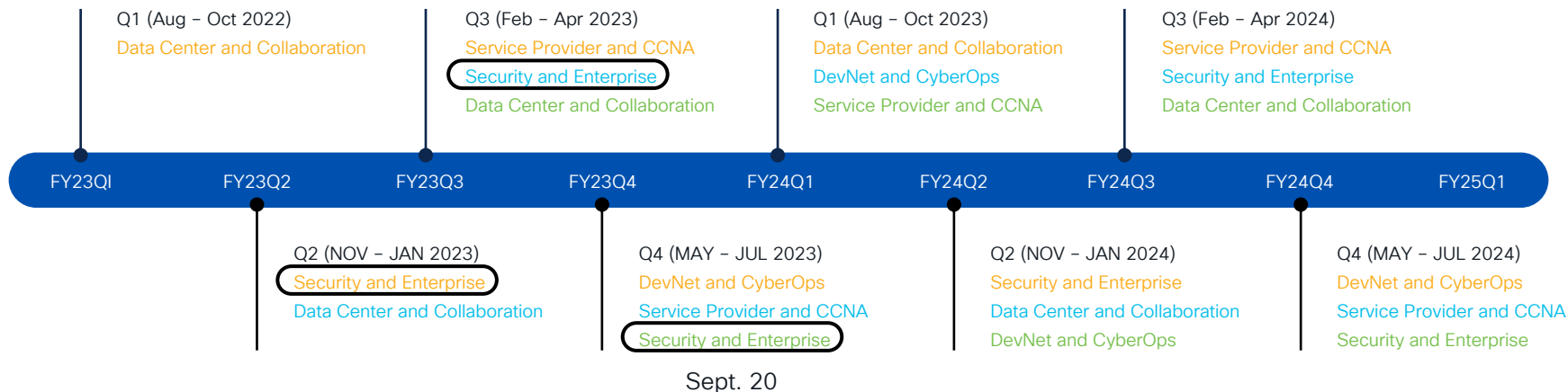
Dates shown reflect Cisco's fiscal year calendar.

Q1: August–October, Q2: November–January, Q3: February–April, Q4: May–July

Certification roadmap

How it works:

1. Cisco **reviews** each technology on the same quarterly schedule each year to make sure our exams align with the latest Cisco technologies.
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3. We **publish** the updated exam 3-6 months after the exam blueprint publication.



Revision framework

Major revision

(Traditional revision model)



Large revisions

Major changes

Steep learning curve

Wider alignment (Product & Technology)

Minor revision

(Agile revision model)



Smaller modular revisions

Incremental changes

Easy bite-size learning model

Frequent alignment (Product & Technology)

ENCOR v1.0 vs ENCOR v1.1

Legend

Blue:	Minor change
Orange:	Removed
Green:	Addition

1.0 Architecture

1.1 Explain the different design principles used in an enterprise network

1.1.a ~~High-level~~ enterprise network design such as 2-tier, 3-tier, fabric ~~capacity planning~~, and cloud

1.2 ~~Analyze~~ Describe wireless network design principles ~~of a WLAN deployment~~

1.2.a Client density

1.3 ~~Differentiate between on-premises and cloud infrastructure deployments~~

1.4 Explain the working principles of the Cisco SD-WAN solution

1.4.a ~~Traditional WAN and~~ Benefits and limitations of SD-WAN solutions

1.5 ~~Describe~~ Interpret ~~concepts of~~ wired and wireless QoS configurations

1.6 ~~Differentiate~~ Describe hardware and software switching mechanisms such as ~~process switching~~ CEF, CAM, TCAM, FIB, RIB, and adjacency tables.

Legend

Blue: Minor change
Orange: Removed
Green: Addition

ENCOR v1.0 vs ENCOR v1.1 (continued)

3.0 Infrastructure

3.1 Layer 2

3.1.c Configure common Spanning Tree Protocols (RSTP, MST) ~~and~~ **Spanning Tree enhancements such as root guard and BPDU guard**

3.2 Layer 3

3.2.a Compare routing concepts of EIGRP and OSPF (advanced distance vector vs. linked state, load balancing, path selection, path operations, metrics, **area types**)

3.2.d Describe policy-based routing

3.3 Wireless

3.3.e Troubleshoot WLAN configuration and wireless client connectivity issues using GUI only

3.3.f Describe wireless segmentation with groups, profiles, and tags

3.4 IP Services

3.4.a ~~Describe~~ Interpret network time protocol **configurations such as NTP and PTP**

4.0 Network Assurance

4.2 ~~Configure device monitoring using Syslog for remote logging~~

4.3 Configure and verify ~~NetFlow and~~ Flexible NetFlow

ENCOR v1.0 vs ENCOR v1.1 (continued)

Legend

Blue: Minor change
Orange: Removed
Green: Addition

5.0 Security

5.1. Configure and verify device access control

5.1.a Lines and ~~password protection~~ local user authentication

5.4 Configure and verify wireless security features

5.4.a ~~EAP~~ 802.1X

5.4.d EAPOL (4-way handshake)

ENCOR v1.0 vs ENCOR v1.1 summary

Legend

Blue: Minor change
Orange: Removed
Green: Addition

1.0 Architecture

- Describe wireless client density
- Interpret QoS configurations

2.0 Virtualization

- No changes

3.0 Infrastructure

- Spanning Tree enhancements
- Area types
- Describe policy-based routing
- Describe wireless segmentation with groups, profiles, and tags
- Interpret NTP and PTP configurations

4.0 Network Assurance

- Traditional NetFlow configuration

5.0 Security

- EAPOL

6.0 Automation

- No changes

ENWLSD v1.0 vs ENWLSD v1.1

2.4 Apply design requirements for these types of wireless networks

- 2.4.a Data
- 2.4.b Voice and video
- 2.4.c Location
- ~~2.4.d Hyperlocation~~

2.5 Design high-density wireless networks and their associated components (~~campus, lecture halls, conference rooms~~)

4.2 Design high availability for APs

- 4.2.a AP prioritization
- 4.2.b Fall-back (assigning primary, secondary, and tertiary)
- 4.2.c Embedded Wireless Controller (EWC)

ENAUTO v1.0 vs ENAUTO v1.1

1.6 Explain the benefits of using network configuration tools such as Ansible and **Terraform**
Puppet for automating IOS XE platforms

2.1 Identify the JSON instance based on a YANG model (including YANG Suite)

2.2 Identify the XML instance based on a YANG model (including YANG Suite)

4.2 Describe the features and capabilities of Cisco DNA Center

- 4.2.c ~~Multivendor support (3rd-party SDKs)~~
- 4.2 eSDA

4.4 Implement API requests for Cisco DNA Center to accomplish network management tasks

- 4.4.d SDA APIs

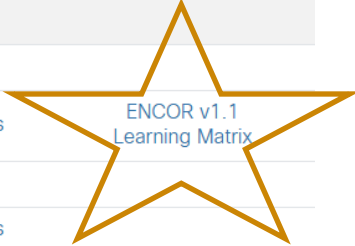
5.1 Describe features and capabilities of Cisco SD-WAN vManage ~~Certificate-Management~~ APIs

<https://learningnetwork.cisco.com/s/cisco-certification-roadmaps>

Upcoming Exam Changes

Select the technology tabs below for specific exam changes:

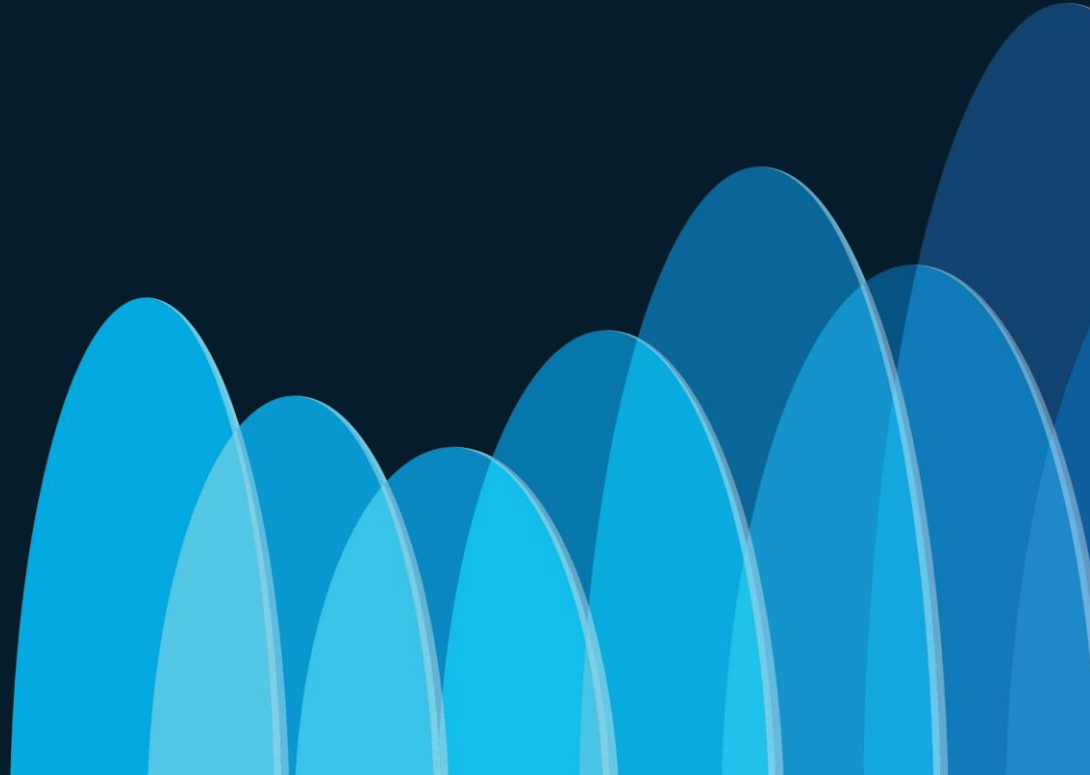
DevNet Cybersecurity Service Provider CCNA Security **Enterprise** Collaboration Data Center CCDE

Exam Number	Release Notes	Exam Topic Blueprint	Learning Matrix
Cisco Enterprise Exams	CCNP Release Notes		
CCNP/CCIE Core Exam Updates			
350-401 ENCOR v1.1		Exam Topics	 ENCOR v1.1 Learning Matrix
CCNP Concentration Exam Updates			
300-410 ENARSI v1.1		Exam Topics	
300-415 ENSDWI v1.2		Exam Topics	
300-420 ENSLD v1.1		Exam Topics	
300-425 ENWLSD v1.1		Exam Topics	
300-430 ENWLSI v1.1		Exam Topics	
300-435 ENAUTO v1.1		Exam Topics	
300-440 ENCC v1.0		Exam Topics	
300-445 ENNA v1.0		Exam Topics	

Learning Matrix

ID	Domain	Sub-Domain	Task ID	Sub-Task ID	Books	Training	Cisco Live	Online Ref.
1 Architecture								
1.1	Explain the different design principles used in an enterprise network				CCNP and CCIE Enterprise Core ENCOR Official Cert Guide	Implementing and Operating Cisco Enterprise Network Core Technologies	BRKENS-1501 BRKENS-1500 BRKENS-2030	
1.1.a	High-level enterprise network design such as 2-tier, 3-tier, fabric, and cloud							Campus LAN and Wireless LAN Solution Design Guide
1.1.b	High availability techniques such as redundancy, FHRP and SSO							Campus Network for High Availability Design Guide
1.2	Describe wireless network design principles				CCNP and CCIE Enterprise Core ENCOR Official Cert Guide	Implementing and Operating Cisco Enterprise Network Core Technologies	BRKCOC-2031	Campus LAN and Wireless LAN Solution Guide
1.2.a	Wireless deployment models (centralized, distributed, controller-less, controller)							Cisco Unified Wireless Technology and Architecture
1.2.b	Location services in a WLAN design						BRKEWN-2012	Cisco Unified Wireless Location-Based Services
1.2.c	Client Density							Client Density
1.3	Explain the working principles of the Cisco SD-WAN solution				CCNP and CCIE Enterprise Core ENCOR Official Cert Guide	Implementing and Operating Cisco Enterprise Network Core Technologies	BRKENT-2108	Official Cisco SD-WAN and Cloud Networking YouTube Channel
1.3.a	SD-WAN control and data planes elements							Cisco SD-WAN Getting Started Guide
1.3.b	Benefits and limitations of SD-WAN solutions							Cisco SD-WAN
1.4	Explain the working principles of the Cisco SD-Access solution				CCNP and CCIE Enterprise Core ENCOR Official Cert Guide	Implementing and Operating Cisco Enterprise Network Core Technologies	BRKCRS-2810	SD-Access Design Guide
1.4.a	SD-Access control and data planes elements						BRKENT-2075	
1.4.b	Traditional campus interoperating with SD-Access						BRKENS-2827	
1.5	Interpret wired and wireless QoS configurations				CCNP and CCIE Enterprise Core ENCOR Official Cert Guide	Implementing and Operating Cisco Enterprise Network Core Technologies	BRKCRS-2501	Quality of Service (QoS) Configuration Guide
1.5.a	QoS components							
1.5.b	QoS policy							
1.6	Describe hardware and software switching mechanisms such as CEF, CAM, and TCAM				CCNP and CCIE Enterprise Core ENCOR Official Cert Guide	Implementing and Operating Cisco Enterprise Network Core Technologies (ENCOR)		RIB FIB CAM TCAM CEF

Preparing for your exams



Exam Blueprint

<https://learningnetwork.cisco.com>

The Cisco Learning Network



Certifications ▾Communities ▾Webinars & Videos ▾Study Resources ▾

Certifications / CCNP Enterprise / 350-401 ENCOR Exam Topics

350-401 ENCOR Exam: Implementing Cisco Enterprise Network Core Technologies

Exam Description

Implementing Cisco Enterprise Network Core Technologies v1.0 (ENCOR 350-401) is a 120-minute exam associated with the CCNP and CCIE Enterprise Certifications. This exam tests a candidate's knowledge of implementing core enterprise network technologies including dual stack (IPv4 and IPv6) architecture, virtualization, infrastructure, network assurance, security and automation. The course, Implementing Cisco Enterprise Network Core Technologies, helps candidates to prepare for this exam.

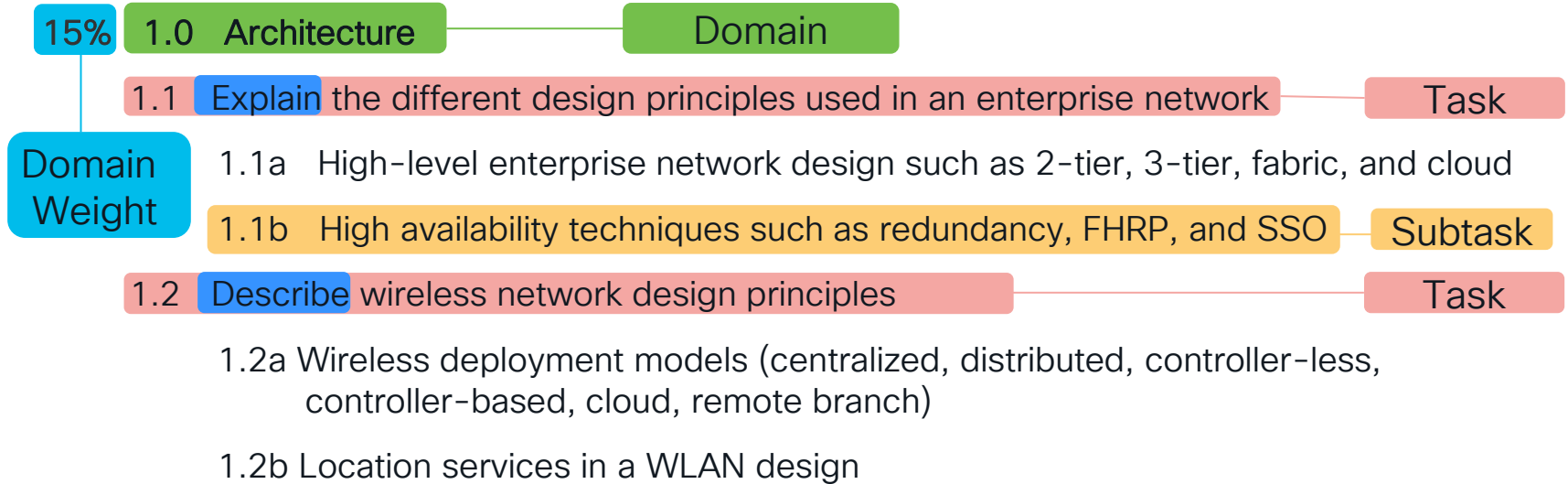
The following topics are general guidelines for the content likely to be included on the exam. However, other related topics may also appear on any specific delivery of the exam. To better reflect the contents of the exam and for clarity purposes, the guidelines below may change at any time without notice.

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

1.0 Architecture	15%	▾
2.0 Virtualization	10%	▾
3.0 Infrastructure	30%	▾
4.0 Network Assurance	10%	▾
5.0 Security	20%	▾
6.0 Automation	15%	▾

Deciphering the Blueprint:

Implementing Cisco Enterprise Network Core Technologies (350-401)



Blueprint Verbs

Describe/Explain/Understand

Compare/Differentiate

Configure/Interpret/Implement/Construct

Diagnose/Troubleshoot/Determine/Analyze

Design

Depth of Knowledge



Types of questions

Multiple
choice

Drag and
drop

Labs

Tasks

Domain 1: Architecture

- 1.1 Explain the different design principles used in an enterprise network
 - 1.1.a Enterprise network design such as 2 Tier, 3 Tier, and Fabric Capacity planning
 - 1.1.b High availability techniques such as redundancy, FHRP, and SSO
- 1.2 Describe design principles of a WLAN deployment
 - 1.2.a Wireless deployment models (centralized, distributed, controller-less, controller-based, cloud, remote branch)
 - 1.2.b Location services in a WLAN design

Multiple Choice “Describe”

Task



Question

1.2 Describe wireless network design principles

1.2.a Wireless deployment models (centralized, distributed, controller-less, controller-based, cloud, remote branch)

A customer with multiple stores around the country needs a wireless solution that will provide easy installation, visibility, and easy to manage. Which solution matches the requirements?

- A. centralized
- B. distributed
- C. controller-less
- D. cloud



Study resources

Cisco U. For You Explore Community View Plans

Implementing and Operating Cisco Enterprise Network Core Technologies | ENCOR

Gain the knowledge and skills needed to install, configure, operate, and troubleshoot an enterprise network.

The Cisco Learning Network Store

Home / Cisco Study Bundles



ENCOR E-Learning and Exam Bundle

Continuing Education Credits: 64



Cisco Press

Official Cert Guides & certification titles for the latest Cisco exams ciscopress.com

A grid of four book covers from Cisco Press. Top left: 'CCNP and CCIE Enterprise Core ENCOR 350-401 2nd Edition'. Top right: 'CCNP Enterprise Advanced Routing ENARSI 300-410 2nd Edition'. Bottom left: 'CCNP Enterprise Core ENCOR 350-401 and Advanced Routing ENARSI 300-410 2nd Edition'. Bottom right: 'CCIE Enterprise Infrastructure Foundation'.

On-Demand Library

Registration now open for Cisco Live 2022. Join us in Las Vegas or online from June 12-16. [Register Now](#)

Filters: Clear **"SD-Access"** 170 sessions

☐ My Favorites
☐ Recommended for you

Featured: **Cisco SD-Access - A Look Under the Hood - BRKCRS-2810** ☆
Event: 2018 Barcelona
Shawn Wargo, PRINCIPAL ENGINEER, TECHNICAL MARKETING, Cisco Systems, Inc. - **Distinguished Speaker**
Are you facing some, or all, of these challenges?
• Host Mobility (w/o stretching VLANs)
• Network Segmentation (w/o implementing MPLS)

Featured: **Real World Use Cases for Deploying and Operating Cisco SD-Access - BRKEMT-2102** ☆
Event: 2021 Digital
Ivan Caduff, Technical Solutions Architect, Cisco Systems, Inc. - **Distinguished Speaker**
Patrick Mosimann, Technical Solutions Architect, Cisco Systems, Inc. - **Distinguished Speaker**
This Session gives you the possibility to understand how the Cisco DNA can help you towards an intent based operations. A common challenge in today's networks is manageability of the network elements and applications installed on Customers...

cisco *Live!*

Domain 2: Virtualization

Tasks

- 2.1 Describe device virtualization technologies
 - 2.1.a Hypervisor type 1 and 2
 - 2.1.b Virtual machine
 - 2.1.c Virtual switching
- 2.2 Configure and verify data path virtualization technologies
 - 2.2.a VRF
 - 2.2.b GRE and IPsec tunneling
- 2.3 Describe network virtualization concepts
 - 2.3.a LISP
 - 2.3.b VXLAN

Multiple Choice “Configure”

Task



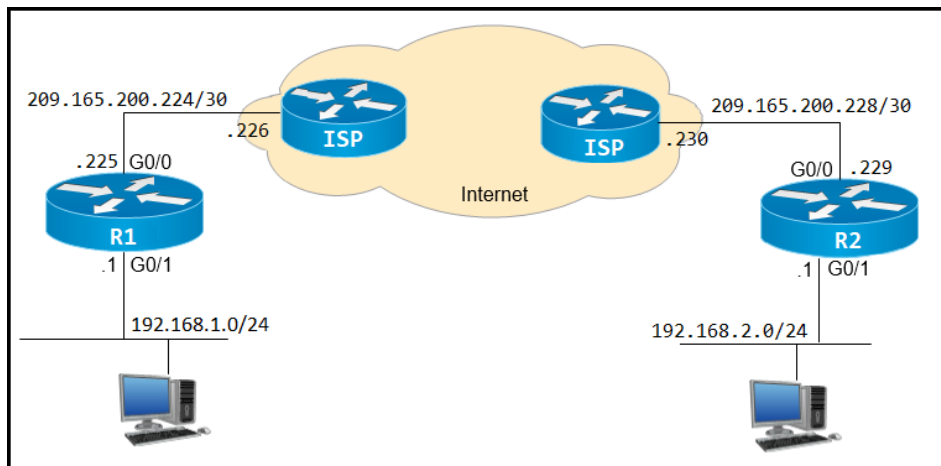
2.2 **Configure** and verify data path
virtualization technologies

2.2.b GRE and IPsec tunneling

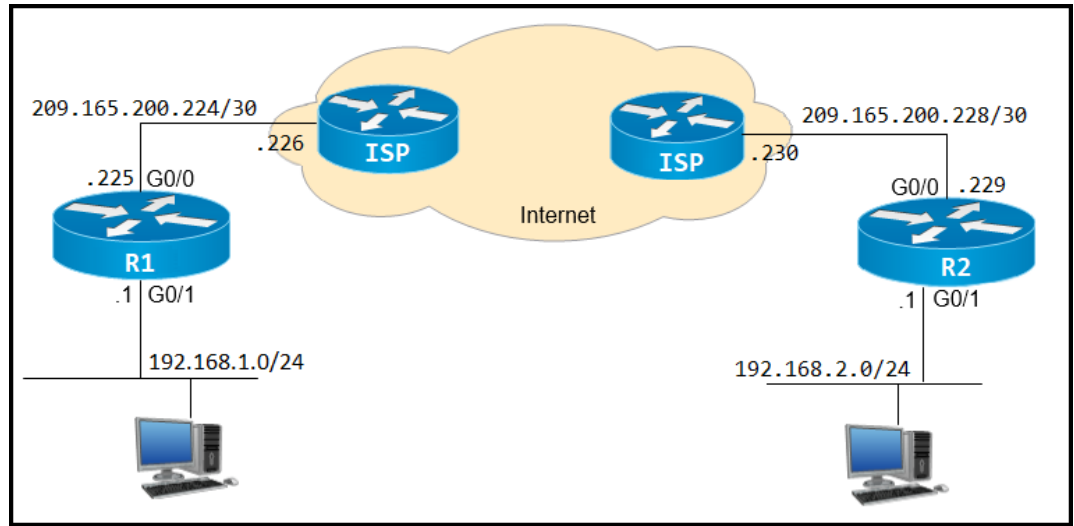
Question



Which configuration is required on R1 to
configure a GRE tunnel between R1 and R2?



Which configuration is required on R1 to configure a GRE tunnel between R1 and R2?



A. interface Tunnel1



```
ip address 192.168.5.1 255.255.255.0  
tunnel source GigabitEthernet0/0  
tunnel destination 209.165.200.229
```

B. interface Tunnel1

```
ip address 192.168.1.2 255.255.255.0  
tunnel source GigabitEthernet0/0  
tunnel destination 209.165.200.230
```

C. interface Tunnel1

```
ip address 209.165.200.225 255.255.255.252  
tunnel source GigabitEthernet0/0  
tunnel destination 209.165.200.229
```

D. interface Tunnel1

```
ip address 192.168.1.1 255.255.255.0  
tunnel source GigabitEthernet0/0  
tunnel destination 172.16.1.1
```

Cisco e-Learning (Self Paced Training)

Cisco U.

For YouExploreCertificationsCommunityView Plans

encor

GK

Implementing and Operating Cisco Enterprise Network Core Technologies (New) | ENCOR

Gain the skills you need to configure and manage enterprise networks while you prepare to take 350-401 ENCOR v1.1 exam.

Intermediate47h 45m32 Courses31 Labs14 Assessments64 Creditsv1.3

DESCRIPTION

The Implementing and Operating Cisco Enterprise Network Core Technologies (ENCOR) learning path provides you with the knowledge and skills needed to install, configure, operate, and troubleshoot an enterprise network. It introduces you to overlay network design through SD-Access and SD-WAN solutions and teaches you to implement security principles and automation and programmability within an enterprise network. This learning path helps prepare you to take the 350-401 ENCOR exam, which is part of the CCIE Enterprise Infrastructure and CCIE Enterprise Wireless certifications. This version is aligned to the updated version of the 350-401 exam, version 1.1, first date to test September 20, 2023.

Implementing and Operating Cisco Enterprise Network Core Technologies (New)

Learning Path Completion 0%

Learning Path CurriculumExpand All

Labs

Assessments

Courses

1

Network Switching7h 25m

2

Network Routing12h 10m

3

Network Security5h 30m

4

Wireless Networking6h 15m

5

Virtualization and Networking Services6h 20m

6

Programmability4h 30m

7

Software-Defined Networking5h 35m

ENCOR

[Return to Learning Path Overview](#)

Lab

Configure Standard and Extended ACLs

Through this discovery, you will review the implementation of standard and extended ACLs using both numbered and named configuration methods. SRV2 is a public DNS server. The domain names of the devices are the same as their hostnames. SRV1 and SRV2 are also HTTP/HTTPS servers.

The diagram illustrates a network topology divided into two spaces by a dashed line. On the left, the 'Private IP Address Space' contains PC1, SW1, SRV1, and SW2. PC1 is connected to SW1 (Eth0/0 to Eth0/1). SW1 is connected to R1 (Eth0/0 to Eth0/1). SRV1 is connected to SW2 (Eth0/0 to Eth0/1). SW2 is connected to R1 (Eth0/0 to Eth0/1). On the right, the 'Public IP Address Space' contains R2, SW3, PC2, and SRV2. R1 is connected to R2 (Eth0/3 on both sides). R2 is connected to SW3 (Eth0/0 to Eth0/2). SW3 is connected to PC2 (Eth0/0 to Eth0/1) and SRV2 (Eth0/0 to Eth0/1).

5% complete

- ▶ Introduction
- ≡ ACL Overview
- ▶ ACL Wildcard Masking
- ▶ Types of ACLs
- ≡ Configure Numbered Access Li...
- ≡ Use ACLs to Filter Network Tra...
- ≡ Apply ACLs to Interfaces
- ≡ Configure Named Access Lists
- ▶ **Configure Standard and Exten...**
- ≡ Control Plane Overview
- ▶ Control Plane Policing
- ▶ Configure Control Plane Policing
- ≡ Summary

Blueprint
structure



Hands-on Labs



Lab help

Cisco U.

 **Lab** | Configure Standard and Extended ACLs

 Exit Lab Mode 



← |

PC1



| →

Step 3

Show Me

Standard ACLs can filter traffic based on source IP address only. A typical best practice is to configure a standard ACL as close to the destination as possible. In this step, you are configuring a numbered standard ACL on R1. The ACL is designed to block traffic from host 10.10.1.10 to the 10.10.2.0/24 network on R1. This ACL will be applied outbound on the R1 Ethernet 0/1 interface.

Step 4

Show Me

Test the ACL by pinging from PC1 to SRV1. Since the ACL is designed to block traffic with source addresses from the 10.10.1.10 host, PC1 should not be able to ping SRV1. Perform a similar test from PC2 to ensure that other devices still have access to SRV1. Verify the ACL using the `show access-list` command.

PC1

DEVICES

1 PC1

2 PC2

3 R1

4 R2

5 SRV1

6 SRV2

7 SW1

8 SW2

9 SW3

RESOURCES

Scenario

Topology

Job Aid

Lab help

Cisco U.

 **Lab** | Configure Standard and Extended ACLs



Exit Lab Mode X

 Get Help

Step 4

Test the ACL by pinging from PC1 to SRV1. Since the ACL is designed to block traffic with source addresses from the 10.10.1.10 host, PC1 should not be able to ping SRV1. Perform a similar test from PC2 to ensure that other devices still have access to SRV1. Verify the ACL using the `show access-list` command.

Answer

On PC1, enter the following command:

```
PC1# ping srv1
Translating "srv1"...domain server (203.0.113.30)

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.10.2.20, timeout is 2 seconds:
U.U.U
Success rate is 0 percent (0/5)
```

First, notice that the DNS requests sent to SRV2 are still functional. SRV2 has resolved the "srv1" domain name and returned the 10.10.2.20 address to PC1. PC1 then sends five echo-request messages to SRV1 but R1 drops the packets and returns ICMP destination unreachable messages to PC1 because of the deny statement in the ACL.

PC1

DEVICES

- 1 PC1
- 2 PC2
- 3 R1
- 4 R2
- 5 SRV1
- 6 SRV2
- 7 SW1
- 8 SW2
- 9 SW3

RESOURCES

-  Scenario
-  Topology
-  Job Aid

Instructor-Led Labs

- **LTRCART-2002**
CCNP Enterprise Hands-On Troubleshooting
- **LTRCART-2011**
CCNP Enterprise Cloud Connectivity
- **LTRCART-1101**
CCNP Enterprise Implementing Network Assurance

Domain 3: Infrastructure

Tasks

3.1 Layer 2

3.1.a Troubleshoot static and dynamic 802.1q trunking protocols

3.1.b Troubleshoot static and dynamic EtherChannels

3.1.c Configure and verify common Spanning Tree Protocols (RSTP, MST) and Spanning Tree enhancements such as root guard and BPDU guard

3.2 Layer 3

3.2.a Compare routing concepts of EIGRP and OSPF (advanced distance vector vs. link state, load balancing, path selection, path operations, metrics, and area types)

3.2.b Configure and verify simple OSPF environments, including multiple normal areas, summarization, and filtering

Labs

- ➡ Configure
- ➡ Construct
- ➡ Diagnose
- ➡ Troubleshoot

Lablet - Candidate Name

Time Remaining 01:26:03

1 of 1

Comment

GuidelinesTopologyTasks

OSPF Process ID 200
Area 0

Lo0:
1.1.1.1 /32


R1

10.1.1.0/24

E0/0 .1 — E0/0 .2

Lo0:
2.2.2.2 /32


R2

R1R2

R1>

Next ➡

Task



Question

3.2 Layer 3

3.2.b Configure and verify simple OSPF environments

Lablet - Candidate Name Time Remaining 01:17:16 1 of 1

Comment

Guidelines Topology **Tasks**

R1 R2

Task 1:
Configure OSPF according to the topology. Match the network mask of each interface and ensure that all routers use Lo0 for the router ID.

Task 2:
Configure OSPF MD5 authentication between R1 and R2.

Next →

Task



Question

3.1 Layer 2

3.1.b Troubleshoot static and dynamic EtherChannels

Tablet - Candidate Name Time Remaining 01:17:16 1 of 1

[Comment](#)

Guidelines Topology **Tasks**

S1 S2

Task:
The port channel between Switch1 and Switch2 is not operational. Resolve the issue so that the switches actively negotiate an LACP port channel.

[Next](#)

Live DEMO

Let's try a real Lablet

More about lablets

FULL CONFERENCE

Labs in Cisco's CCNA and CCNP Certification Programs - IBOCRT-2002



DevNet Sandbox

Cisco Modeling Labs Demo

<https://developer.cisco.com>

ALWAYS-ON

or

RESERVE

cisco *Live!*

Networking Sandbox Highlights

 Version 2.0



Cisco Modeling Labs Enterprise
Start your Network DevOps journey

RESERVATION SANDBOX

Cisco Modeling Labs Enterprise

Cisco Modeling Labs is a tool for building virtual network simulations (or labs) for you to test out new topologies, protocols, and config changes; automate network tests via CI/CD pipeline integration; and learn new things about the cool world of networking. This sandbox provides access to a Cisco Modeling Labs system that can be used to explore the capabilities of the newest release of Cisco Modeling Labs Personal and Enterprise.





Multi Domain

RESERVATION SANDBOX

Multi Domain

This Sandbox was designed for developers to build applications and operational tools to manage the diverse set of platforms deployed across an enterprise. This Sandbox provides developers access to multiple domains and platforms, including Cisco HyperFlex, Cisco SD-WAN, Cisco Action Orchestrator, as well as open source tools like NetBox and GitLab.

 Version 19.2



Cisco SD-WAN
Cloud-delivered overlay WAN architecture

RESERVATION SANDBOX

Cisco SD-WAN

This sandbox consists a complete virtual SD-WAN environment and all of its components, that developers can utilize to develop, debug and test their sample SD-WAN applications. The developer can also interact with the SD-WAN API calls using a variety of REST clients such as POSTMAN.

Tasks

Domain 4: Network Assurance

- 4.1 Diagnose network problems using tools such as debugs, conditional debugs, trace route, ping, SNMP, and syslog
- 4.2 Configure and verify Flexible NetFlow
- 4.3 Configure and verify SPAN/RSPAN/ERSPAN
- 4.4 Configure and verify IPSLA
- 4.5 Describe Cisco DNA Center workflows to apply network configuration, monitoring, and management
- 4.6 Configure and verify NETCONF and RESTCONF

Multiple Choice “Describe”

Task



Question

4.6 Describe Cisco DNA Center workflows to apply network configuration, monitoring, and management

How does Cisco DNA Center perform a network discovery?



- A. Through a network scan
- B. Through a DHCP server
- C. Using CDP with a seed address
- D. Using SNMP

dCloud Cisco DNA Center Demo (dcloud.cisco.com)

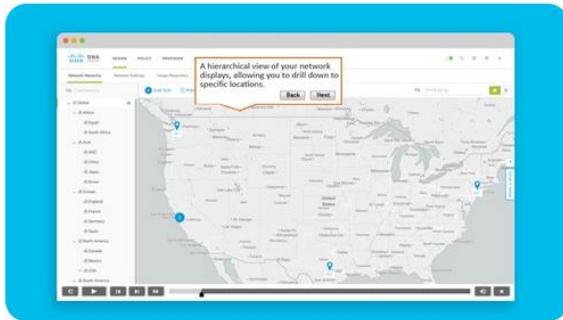
Cisco DNA Center Demos

Get 360-degree contextual insights across users, devices, and applications. Learn more and gain hands-on experience with Cisco DNA Center now.

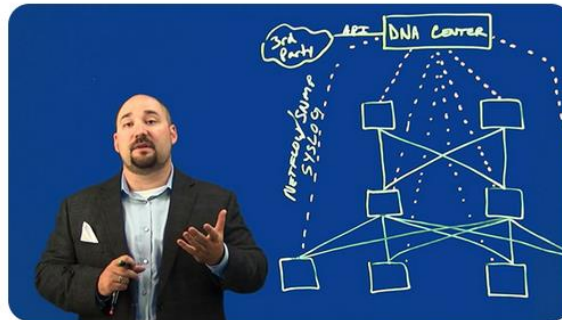
[Watch demo \(2:19\)](#)

[Explore live demo webinar](#)

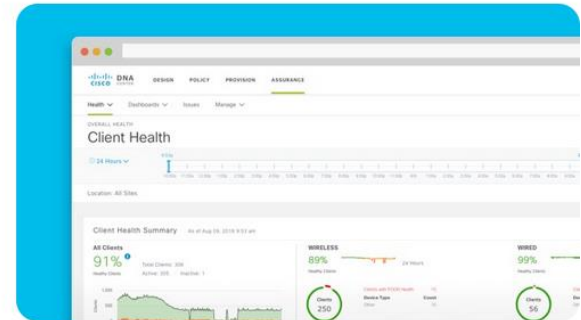
Take demos to the next level



Self-guided demo: Cisco DNA Center



Walk-through: Cisco DNA Center



Live instant demo: Cisco DNA Center

Domain 6: Automation

Tasks

- 6.1 Interpret basic Python components and scripts
- 6.2 Construct valid JSON encoded file
- 6.3 Describe the high-level principles and benefits of a data modeling language, such as YANG
- 6.4 Describe APIs for Cisco DNA Center and vManage
- 6.5 Interpret REST API response codes and results in payload using Cisco DNA Center and RESTCONF
- 6.6 Construct EEM applet to automate configuration, troubleshooting, or data collection
- 6.7 Compare agent vs. agentless orchestration tools, such as Chef, Puppet, Ansible, and SaltStack

Drag-and-Drop “Construct”

Task

6.2 Construct valid JSON encoded file

Question

Drag and drop the code snippets onto the blanks in the Python script to convert a Python object into a JSON string.

A. json.dumps

B. json

C. json_string

```
import         

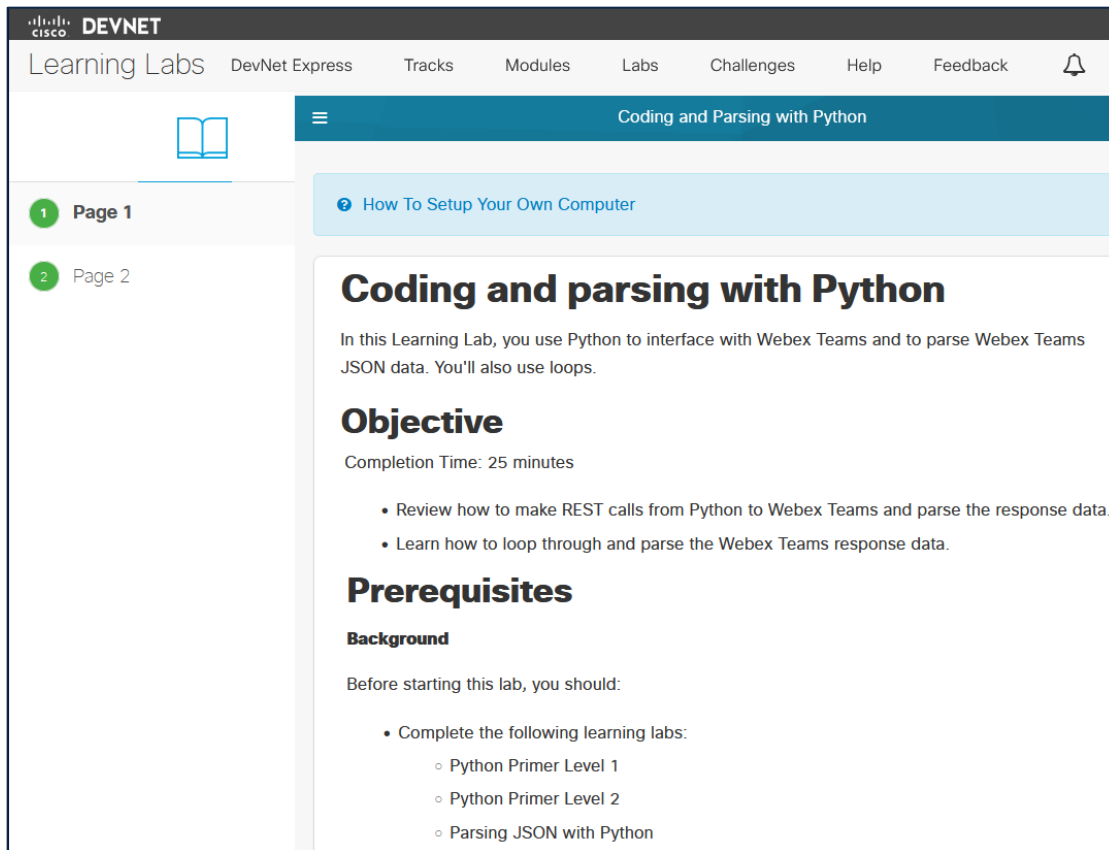
data = {
    "measurement": "freeMemory",
    "maxDataPoints": 30,
    "alert": True,
    "policy": "1.2.1",
    "devices": [{"model": "Cisco 9200", "ipv4": '10.10.10.1'}]
}
model = data["devices"][0]["model"]

json_string =                  (data)

print(                )
```

DevNet Learning Labs

<https://developer.cisco.com>



The screenshot shows the DevNet Learning Labs interface. The top navigation bar includes links for Learning Labs, DevNet Express, Tracks, Modules, Labs, Challenges, Help, and Feedback. The main header is 'Coding and Parsing with Python'. The left sidebar shows a list of pages: Page 1 (selected) and Page 2. The main content area displays the lab title 'Coding and parsing with Python', a description of the lab's purpose, an objective section with a completion time of 25 minutes, and prerequisites including a background section and a list of required learning labs.

DEVNET

Learning Labs DevNet Express Tracks Modules Labs Challenges Help Feedback

Coding and Parsing with Python

1 Page 1

2 Page 2

How To Setup Your Own Computer

Coding and parsing with Python

In this Learning Lab, you use Python to interface with Webex Teams and to parse Webex Teams JSON data. You'll also use loops.

Objective

Completion Time: 25 minutes

- Review how to make REST calls from Python to Webex Teams and parse the response data.
- Learn how to loop through and parse the Webex Teams response data.

Prerequisites

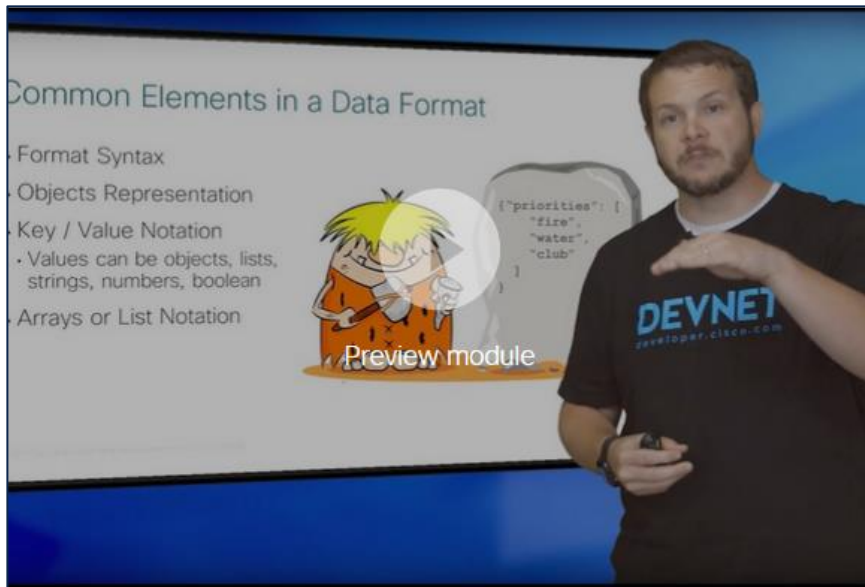
Background

Before starting this lab, you should:

- Complete the following learning labs:
 - Python Primer Level 1
 - Python Primer Level 2
 - Parsing JSON with Python

DevNet Video Courses

<https://developer.cisco.com>



Programming Fundamentals

Jumpstart your journey into Network Programmability with this quick introduction to the core programming fundamental topics you'll explore.



Play module

- | | | |
|---|--|-------|
| 1 | Data Formats: Understanding and using JSON, XML and YAML | 21:21 |
| 2 | APIs are Everywhere... but what are they? | 13:00 |

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 The Cisco Learning Network

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Home > Enterprise Networking Certifications Study Group

Enterprise Networking Certifications Study Group

Overview Content People

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Welcome to the Enterprise Networking Technology track Study Group, the place on the Cisco Learning Network where you can ask questions, share ideas and connect with other members as you prepare for your Certification exams.



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Member Created Documents
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Meet Your Community Managers

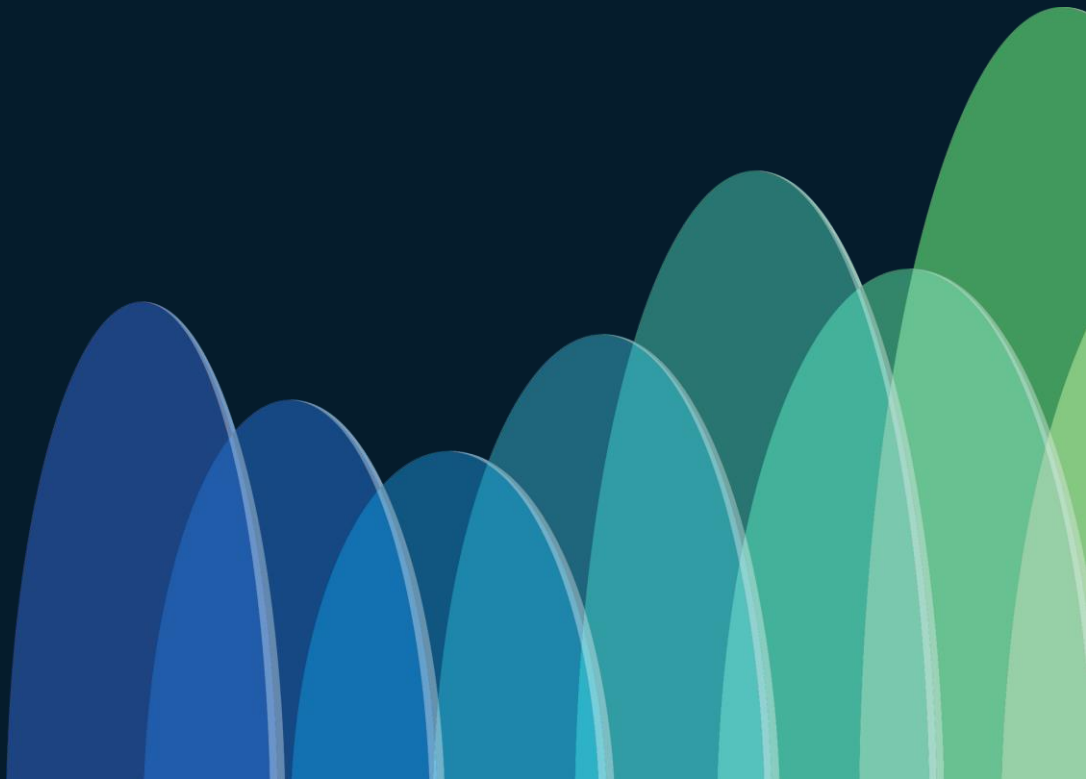
This team can help you locate the resources you need to meet your study goals and act as your advocate on the Cisco Learning Network.



Karlo Bobiles
[Connect with me!](#)

Q&A

CISCO *Live!*



Webex App

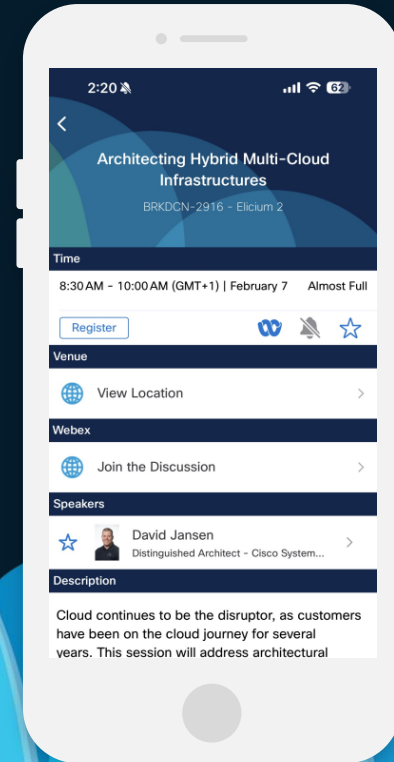
Questions?

Use the Webex app to chat with the speaker after the session

How

- 1 Find this session in the Cisco Events mobile app
- 2 Click “Join the Discussion”
- 3 Install the Webex app or go directly to the Webex space
- 4 Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until February 28, 2025.



Fill Out Your Session Surveys



Participants who fill out a minimum of 4 session surveys and the overall event survey will get a unique Cisco Live t-shirt.

(from 11:30 on Thursday, while supplies last)



All surveys can be taken in the Cisco Events mobile app or by logging in to the Session Catalog and clicking the 'Participant Dashboard'



Content Catalog

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- 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 ciscolive.com/on-demand. Sessions from this event will be available from March 3.

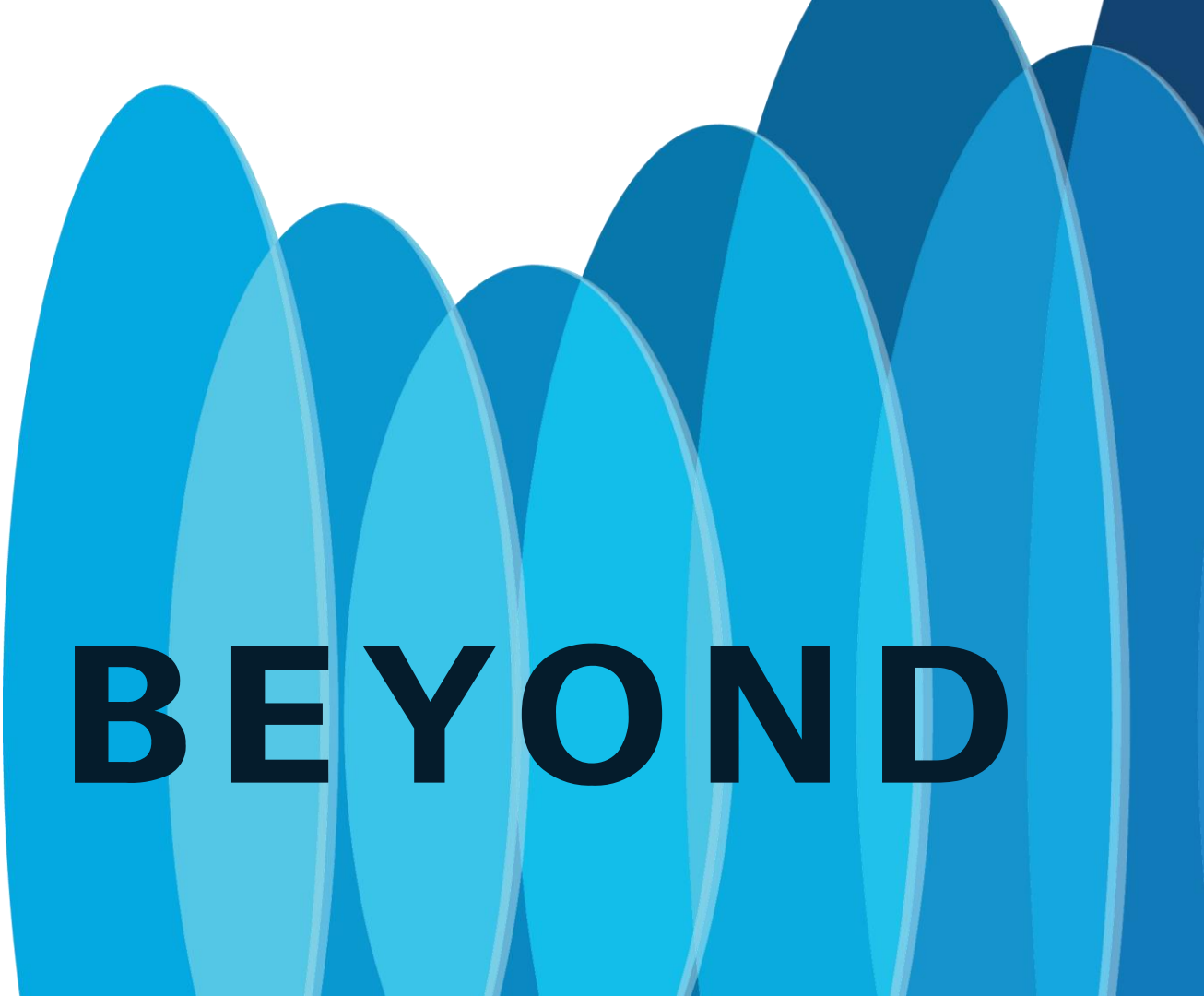


Thank you



CISCO *Live!*

GO BEYOND

The background of the slide features a series of overlapping, teardrop-shaped elements in various shades of blue, ranging from light sky blue to deep navy blue. These shapes are arranged in a way that creates a sense of depth and movement, resembling a stylized mountain range or a series of waves. The overall aesthetic is clean and modern.