

Cisco DevNet Associate

(200-901 DEVASC)

WEEK 1

Welcome to Cisco Certified DevNet Associate (200-901)

3 min.

- 1 Welcome to Cisco Certified DevNet Associate (200-901)

3 min.

Software Development Practices for all IT Professionals

3 min.

- 2 Software Development Practices for all IT Professionals

3 min.

Network Automation - Where Network and Software Come Together

3 min.

- 3 Network Automation - Where Network and Software Come Together

3 min.

Prepare a VS Code Development Environment

39 min.

- 4 Choosing Visual Studio Code as Your IDE
5 Picking a Theme and Font
6 Configuring the Interface
7 Using the Extensions Gallery
8 Understanding Files, Folders, and Workspaces
9 Using the Debugger
10 Reviewing Visual Studio Code

7 min.

8 min.

5 min.

5 min.

8 min.

5 min.

1 min.

Basic Programming Control Flow

34 min.

- 11 Why we Use Code Organizing Structures
12 Control Flow Statements
13 Conditionals Statements
14 Loops and Iterators
15 Functions and Methods

3 min.

4 min.

4 min.

4 min.

5 min.



STUDY PLAN

16	Why use Object-Oriented Programming?	5 min.
17	Class State and Behavior	8 min.
18	Basic Programming Control Flow Summary	1 min.

Determine When to Use Design Patterns 21 min.

19	Understanding Design Patterns	2 min.
20	Singleton Design Pattern	5 min.
21	Observer Design Pattern	5 min.
22	Model View Controller	7 min.
23	Design Patterns Summary	2 min.

Getting Started with Git 10 min.

24	Understanding Version Control Systems and Git	5 min.
25	Installing Git	5 min.

WEEK 2

Getting Started with Git 54 min.

26	Creating your First Repository	8 min.
27	Staging and Committing Files	9 min.
28	Viewing Repository History	8 min.
29	Comparing Changes with Git Diff	6 min.
30	Checking Out Previous Commits	9 min.
31	Git Reset and Revert to Undo Changes	10 min.
32	Untracking and Unstaging Files	4 min.

Collaborate with Git 34 min.

33	Using Git for Collaboration	3 min.
34	Initializing a Repository with Clone	6 min.

35	Synchronizing with Remote Repositories	6 min.
36	Working With Branches	7 min.
37	Merging Branches and Resolving Conflicts	11 min.
38	Git Collaboration Summary	1 min.

XML, JSON, and YAML Data Formats 34 min.

39	Why Use Plain Text Data Formats?	6 min.
40	XML, JSON, and YAML Data Formats	5 min.
41	XML Syntax	4 min.
42	XML Elements, Tags, and Attributes	5 min.
43	XML Document Object Model (DOM)	4 min.
44	JSON Syntax	5 min.
45	JSON Strings, Numbers, and Booleans	5 min.

WEEK 3

XML, JSON, and YAML Data Formats 17 min.

46	JSON Objects and Arrays	6 min.
47	YAML Syntax	4 min.
48	YAML Strings, Numbers, Floats, and Booleans	6 min.
49	Data Formats Summary	1 min.

Parse Data Formats into Python Structures 27 min.

50	Parsing Data Formats with Python	1 min.
51	Parsing XML with Python	8 min.
52	XML Libraries in Action	7 min.
53	Parsing JSON with Python	5 min.
54	Parsing YAML with Python	5 min.
55	Parsing Data Formats in Summary	1 min.

REST API Fundamentals

20 min.

56	Introducing RESTful APIs	5 min.
57	RESTful API Constraints	4 min.
58	REST vs. SOAP	4 min.
59	REST Tools	6 min.
60	RESTful API Summary	1 min.

REST API Requests and Responses

21 min.

61	Introducing REST API Requests and Responses	1 min.
62	Request and Response	6 min.
63	HTTP Request Method	4 min.
64	HTTP Response Codes	5 min.
65	HTTP Headers	4 min.
66	HTTP Requests and Responses Summary	1 min.

Parameters and Payloads for REST APIs

17 min.

67	Introduction to HTTP Parameters and Payloads	1 min.
68	HTTP Query Strings	7 min.
69	HTTP Payloads	3 min.
70	Query Strings and Payloads in Action	5 min.
71	HTTP Parameters and Payloads Summary	1 min.

Authentication with HTTP and REST

13 min.

72	Introduction to REST Authentication	2 min.
73	Base64 Encoding vs. Encryption	5 min.
74	HTTP Basic Authentication	6 min.

WEEK 4

Authentication with HTTP and REST

11 min.

75	API Key Authentication	4 min.
76	Token Authentication	6 min.
77	HTTP Authentication Summary	1 min.

Use Postman for REST API Interaction

25 min.

78	Introduction to Postman	2 min.
79	Postman Requests and Responses	8 min.
80	HTTP Auth with Postman	4 min.
81	Postman Collections and Folders	2 min.
82	Postman Scripts	4 min.
83	Postman Environments	4 min.
84	Postman Summary	1 min.

Network Programmability and Automation

55 min.

85	Saying Goodbye to the CLI	1 min.
86	Why Network Automation?	10 min.
87	What Can You Automate?	13 min.
88	The Evolution of Network APIs	13 min.
89	Network Programmability vs. Network Automation	10 min.
90	Devices and Controllers in the Era of SDN	6 min.
91	Outro	2 min.

Prepare a DevNet Study Environment

30 min.

92	Setting Up Your DevNet Study Environment	1 min.
93	Installation Checklist	6 min.
94	Sandbox	6 min.
95	VIRL	11 min.
96	Code Exchange	6 min.

WEEK 5

Prepare a DevNet Study Environment 1 min.

97	Environment Prep Summary	1 min.
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Data Models and YANG 39 min.

98	Introducing Data Models and YANG	1 min.
99	What is a Data Model?	8 min.
100	How YANG Works	12 min.
101	YANG in Action	6 min.
102	YANG Tools to Make Your Life Easier, Win Friends, and Influence People	10 min.
103	This Nugget is Important	2 min.

Develop NETCONF Scripts for Cisco IOS-XE Devices 41 min.

104	Network Device Development the Modern Way	1 min.
105	NETCONF circa 2006	13 min.
106	Enabling NETCONF on an IOS-XE Device	9 min.
107	Getting NETCONF Data with NCCLIENT	13 min.
108	Automation with NETCONF and NCCLIENT	4 min.
109	NETCONF Summary	1 min.

Develop RESTCONF Scripts for Cisco IOS-XE 21 min.

110	Introducing RESTCONF — the New Kid on the Block	1 min.
111	RESTCONF circa 2017	9 min.
112	Enabling RESTCONF on IOS-XE Devices	1 min.
113	Exploring Device APIs and Models with Postman	6 min.
114	Developing RESTCONF in Python with Requests	3 min.
115	RESTCONF Summary	1 min.

Nexus Programmability with NX-API CLI 20 min.

116	Data Center Scenario	1 min.
117	Introducing NX-OS and NX-API CLI	10 min.
118	Enabling NX-API on a Nexus Device	2 min.
119	NX-API CLI Sandbox	7 min.

WEEK 6

Nexus Programmability with NX-API CLI 8 min.

120	NX-API CLI from Postman	3 min.
121	Scripting NX-API CLI Requests in Python	4 min.
122	Summarizing NX-API CLI	1 min.

Nexus Programmability with NX-API REST 32 min.

123	Introducing NX-API	1 min.
124	NX-API REST Object Model	11 min.
125	Exploring Objects with Visore	8 min.
126	Setting Up Postman Requests	6 min.
127	Scripting Python Requests	5 min.

128 Summarizing NX-API REST 1 min.

Real-World Nexus Automation for Real-World Network Engineers 23 min.

129 Real-World Automation with NX-API 1 min.
130 Show CDP Neighbors 3 min.
131 Getting the Data 2 min.
132 Creating The Token 3 min.
133 Handling the Data 6 min.
134 Setting the Configuration 7 min.
135 Script Summary 1 min.

Automate Cisco Meraki Networks 23 min.

136 Introducing Cisco Meraki Automation 1 min.
137 Cloud Networking, Controllers, and APIs 9 min.
138 Dashboard API 4 min.
139 Setting Up Postman for Meraki 5 min.
140 Python Automation with Meraki 3 min.
141 Summarizing Cisco Meraki Automation 1 min.

Automation with the Meraki Python SDK 20 min.

142 Scripting Made Easier with SDKs 1 min.
143 Exploring the Meraki SDK 5 min.
144 Getting Started with Scripting 4 min.
145 Diving Deeper with the Meraki SDK 4 min.
146 Updating Configs with the Meraki SDK 5 min.
147 Summarizing the Meraki SDK 1 min.

Automate the Data Center with ACI 12 min.

148 Code in the Data Center 1 min.
149 ACI Architecture 11 min.

WEEK 7

Automate the Data Center with ACI 28 min.

150 ACI Object Model 8 min.
151 ACI Programmability 6 min.
152 API Inspector 2 min.
153 ACI REST API with Postman 6 min.
154 ACI REST API with Python 5 min.
155 Summarizing ACI 1 min.

Easier ACI Automation with the Toolkit 21 min.

156 Toolkits and SDKs for ACI 1 min.
157 Getting Started with the Python ACI Toolkit 3 min.
158 Creating a Full Tenant with the ACI Toolkit 10 min.
159 Running Sample Code from the ACI Toolkit 3 min.
160 ACI Toolkit Applications 3 min.
161 Summarizing ACI Automation 1 min.

Automate the Campus with DNA Center Platform 34 min.

162	Code in the Enterprise	1 min.
163	DNA Center Platform Capabilities	9 min.
164	Exploring the Platform's API	6 min.
165	Setting up the Platform API Requests in Postman	5 min.
166	DNA Center Platform Assurance Calls in Python	12 min.
167	Summarizing DNA Center Platform Automation	1 min.

Easier DNA Center Automation with the SDK 18 min.

168	Using the DNA Center SDK	1 min.
169	Getting and Exploring the DNA Center SDK	2 min.
170	Authentication and Networks	7 min.
171	Devices	3 min.
172	Clients	4 min.
173	Summarizing the DNA Center SDK	1 min.

Automate Cisco Collaboration Platforms 20 min.

174	It's Not Just About Phones Anymore	1 min.
175	Cisco Collaboration Platform in the Modern Era	8 min.
176	CUCM: Getting Started with AXL and SoapUI	11 min.

WEEK 8

Automate Cisco Collaboration Platforms 8 min.

177	CUCM: Getting Started with UDS	5 min.
178	Scripting for UDS	2 min.

179	Summarizing the Collaboration Platform	1 min.
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Automate Your Teamwork with Webex Teams 26 min.

180	Automating Webex Teams	1 min.
181	Getting Started with Webex Teams for Free	8 min.
182	Creating a Team	5 min.
183	Creating a Room	3 min.
184	Posting Messages to the Room	2 min.
185	There's an SDK for That	6 min.
186	Summarizing Webex Teams	1 min.

Automate WAN Workloads with SD-WAN 17 min.

187	Controllers and WAN	1 min.
188	Cisco SD-WAN Platform	6 min.
189	Exploring the vManage API	2 min.
190	Setting Up SD-WAN in Postman	4 min.
191	Scripting SD-WAN	3 min.
192	Summarizing SD-WAN	1 min.

Automate the Cisco Security Platform 16 min.

193	Introducing SD-Security	1 min.
194	Cisco Security Platform	4 min.
195	Exploring the FirePower Management Center API	5 min.
196	FirePower Authentication in Postman	2 min.
197	FirePower Authentication in Python	3 min.
198	Summarizing Cisco Security	1 min.

Create Access Policies in FMC with Python

15 min.

199	Threat Targeting in FirePower Automatically	1 min.
200	Access Control Policy Overview	5 min.
201	Creating the Policy	4 min.
202	Creating the Rules and Cleaning Up our Policy	4 min.
203	Summarizing Threat-Centric Policy Creation	1 min.

Automate Cisco ASA Firewalls

16 min.

204	Introducing the Cisco ASA REST API	1 min.
205	Installing the REST API Package	6 min.
206	Exploring with On-Box Documentation	3 min.
207	Configuring a Postman Environment	3 min.
208	Scripting Your ASA with Python	2 min.
209	Summarizing ASA Automation	1 min.

Automate Cisco Compute and More with UCS

27 min.

210	Cisco Compute and Storage	1 min.
211	Introducing the Cisco UCS Platform	6 min.
212	UCS Manager: PowerTool	7 min.
213	UCS Manager: Python UCSM SDK	4 min.
214	UCS Director: Exploration and Postman	9 min.

WEEK 9

Automate Cisco Compute and More with UCS

1 min.

215	Summarizing Cisco Compute	1 min.
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Automate Everything with NSO

26 min.

216	Network Services Orchestrator (NSO)	1 min.
217	Understanding the NSO Architecture	8 min.
218	Installing and Configuring NSO	7 min.
219	Deeper Exploration of NSO Components	5 min.
220	Python Scripting for NSO	4 min.
221	Summarizing NSO	1 min.

Automate Cisco Platforms with PowerShell

23 min.

222	Why PowerShell?	1 min.
223	Getting PowerShell Core v7	2 min.
224	RESTCONF	7 min.
225	Meraki	4 min.
226	ACI	4 min.
227	DNA Center Platform	2 min.
228	SD-WAN	2 min.
229	Summarizing PowerShell Network Automation	1 min.

Computing and Application Deployment Models

28 min.

230	Introduction to Computing and Application Deployment Models	1 min.
231	Virtual Machines and Containers	7 min.
232	Edge Computing	8 min.
233	Cloud Computing	4 min.
234	Deployment Models	7 min.
235	Computing and Application Deployment Summary	1 min.

Understand the Basics of Docker

34 min.

236	Introducing Containers	1 min.
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237	Introducing Containers and Docker	5 min.
238	Installing Docker	5 min.
239	Containerize Your App with a Dockerfile	9 min.
240	Working with Docker Commands	9 min.
241	Pushing and Pulling with Docker Hub	4 min.
242	Summarizing Docker	1 min.

Describe the Components for a CI/CD Pipeline 8 min.

243	Introduction to CI/CD	1 min.
244	What is CI/CD?	7 min.

WEEK 10

Describe the Components for a CI/CD Pipeline 11 min.

245	Integrating, Building, and Testing	5 min.
246	Delivering and Deploying	5 min.
247	CI/CD Summary	1 min.

Secure Data in Your Applications 19 min.

248	Securing Data is a Big Deal	1 min.
249	Resting or Moving	3 min.
250	Secure Data in Transit	5 min.
251	Environment Variables	5 min.
252	Encrypting Data at Rest	4 min.
253	Summarizing Data Security	1 min.

Identify OWASP Standard Threats 16 min.

254	Threat Assessments of your Code	1 min.
255	What is OWASP?	4 min.
256	Cross-Site Scripting (XSS) Attacks	4 min.
257	SQL Injection Attacks	3 min.
258	Cross-Site Request Forgery (XSRF) Attacks	3 min.
259	Summarizing OWASP Common Threats	1 min.

Understanding the Basics of Linux and Bash 32 min.

260	Welcome to Open Source OSs	1 min.
261	Linux Distro	7 min.
262	Filesystem	8 min.
263	Creating, Editing, Moving, and Deleting Files	6 min.
264	File Permissions	5 min.
265	Working with Packages	4 min.
266	Summarizing Linux	1 min.

Identify the Principles of DevOps Practices 16 min.

267	Introducing DevOps	2 min.
268	Iterative and Incremental	5 min.
269	Continuous and Automated	4 min.
270	End-To-End Responsibility	4 min.
271	DevOps Principles Summary	1 min.

Unit Tests and Test-Driven Development (TDD) 25 min.

272	Introduction to Unit Testing and Test-Driven Development	1 min.
273	Unit Testing	7 min.
274	Using the Python unittest Module	7 min.

275	Unit Testing with Postman	6 min.
276	Test-Driven Development (TDD)	4 min.

WEEK 11

Unit Tests and Test-Driven Development (TDD) 1 min.

277	Unit Testing and TDD Summary	1 min.
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Install and Configure Ansible 52 min.

278	Automation and Orchestration Foundations	1 min.
279	Infrastructure as Code	7 min.
280	CICD Pipeline	5 min.
281	Installing Ansible	4 min.
282	Configuring Remote Devices	6 min.
283	Inventory File	3 min.
284	Modules	5 min.
285	Playbook File	6 min.
286	Variables and Facts	7 min.
287	Conditionals	5 min.
288	Loops	2 min.
289	Summarizing Ansible Foundations	1 min.

Automate Your Entire Network with Ansible 48 min.

290	Using Ansible for Network Automation	1 min.
291	host_vars and group_vars	8 min.

292	Network Modules	7 min.
293	Creating Loopbacks on Nexus Devices	9 min.
294	Gather Facts and Issue CLI Commands to IOS-XE Devices	5 min.
295	RESTCONF and Connection Variables	3 min.
296	RESTCONF GET Playbooks	3 min.
297	Jinja Templates	4 min.
298	RESTCONF Config Playbooks	7 min.
299	Summarizing Ansible Network Automation	1 min.

Describe How a Switch Performs Layer 2 Forwarding 17 min.

300	Introducing Layer 2 Switches	1 min.
301	Benefits of Network Layers	4 min.
302	Ethernet L2 MAC Addresses	6 min.
303	How an Ethernet Switch Works	6 min.

WEEK 12

Describe How a Switch Performs Layer 2 Forwarding 13 min.

304	Using VLANs	7 min.
305	Using 802.1Q Trunks	5 min.
306	Reviewing Layer 2 Switches	1 min.

Describe How a Router Performs Layer 3 Forwarding 32 min.

307	Introducing Layer 3 Forwarding	1 min.
308	Network Layer – Layer 3	4 min.
309	IPv4 Basics	8 min.
310	Training an L3 Router	12 min.
311	Default Routes	6 min.
312	Router Review	1 min.

Describe Transport Layer Functions and Protocols 20 min.

313	Introducing Layer 4 of the TCP/IP Protocol Suite	1 min.
314	Transport Layer – Layer 4	4 min.
315	Transmission Control Protocol (TCP)	8 min.
316	User Datagram Protocol (UDP)	6 min.
317	Layer 4 Review	1 min.

Describe Application Layer Functions and Protocols 35 min.

318	Introducing the Application Layer	1 min.
319	Common Application Layer Services	6 min.
320	Ports Overview	9 min.
321	Common IP Services	6 min.
322	End-To-End IP Communications	6 min.
323	Multilayer Switches	6 min.
324	Application Layer Review	1 min.

Interpret and Describe a Basic Network Topology 24 min.

325	Intro to Interpret and Describe a Basic Network Topology	1 min.
326	Topology Overview and Lab	6 min.
327	Firewalls in the Network	6 min.
328	IDS and IPS Devices	4 min.
329	Network Redundancy	7 min.

