

Developing with Cisco Network Programmability Exam Topics v1.1

The Developing with Cisco Network Programmability exam (300-560) is a 90-minute, 65-75 questions assessment. The 300-560 exam tests a candidate's knowledge and skills related to the following:

- Programming Fundamentals
- Data handling and formats
- Network controller platforms and protocols
- Device programmability (NXOS-API, ASA-API, IOS (XE/XR))
- Application Programming Interfaces (APIs)
- Cisco Software Development Kits (SDKs)
- Networking Fundamentals

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. In order to better reflect the contents of the exam and for clarity purposes, the guidelines below may change at any time without notice.

*NOTE: This Developing with Cisco Network Programmability exam topics v1.1 should be referenced for written exams scheduled **on** June 26, 2018 and beyond.*

15%	1.0	Programming Fundamentals
	1.1	Construct Python code
	1.2	Construct Python code that properly handles exceptions
	1.3	Interpret Python code
	1.4	Interpret Python code that includes the following packages or modules:
	1.4.a	JSON
	1.4.b	XML
	1.4.c	requests
	1.4.d	ncclient
	1.5	Debug Python code
13%	2.0	Data Handling and Formats
	2.1	Construct a syntactically valid JSON or XML payload from a given data set
	2.2	Parse specific data from a JSON or XML payload
	2.3	Employ sorting, manipulation and storing of network entries (such as IPv4, IPv6, or MAC addresses)

- 2.4 Validate YANG models for semantics and syntax
- 2.5 Translate a YANG data model to a RESTCONF URI/JSON representation

14% 3.0 Network controller platforms and protocols

- 3.1 Describe the ACI policy model
- 3.2 Describe the ACI Application Profiles
- 3.3 Describe APIC-EM services
- 3.4 Describe the APIC-EM Network Information Database (NIDB)
- 3.5 Describe the purpose and handling of service tickets in APIC-EM
- 3.6 Compare and contrast Openflow and Opflex protocols
- 3.7 Describe how and when to rollback configuration changes in APIC, APIC-EM, or when using NETCONF
- 3.8 Evaluate the impact a piece of code has on controller / network element resource utilization

5% 4.0 Device programmability (NXOS-API, ASA-API, IOS (XE/XR))

- 4.1 Interpret or produce code to deploy configurations to multiple devices using RESTCONF
- 4.2 Interpret or produce code to deploy configurations to multiple devices using NETCONF
- 4.3 Describe ASA configuration constructs (network objects, access lists, security groups)
- 4.4 Construct a request to an ASA that performs multiple REST requests in a single POST
- 4.5 Evaluate the impact a piece of code has on network element resource utilization
- 4.6 Compare and contrast virtual platforms used to test network applications
 - 4.6.a VIRL
 - 4.6.b APIC Simulator
 - 4.6.c NX-OSv
 - 4.6.d DevNet sandboxes
 - 4.6.e ASAv
 - 4.6.f CSR1000v

20% 5.0 Application Programming Interfaces (APIs)

- 5.1 Describe how to establish a secure connection to a device that provides a RESTful API
- 5.2 Authenticate a connection or session against the controllers and platforms
 - 5.2.a APIC
 - 5.2.b APIC-EM
 - 5.2.c NXOS-API
 - 5.2.d ASA-API
 - 5.2.e IOS XE/XR
- 5.3 Construct a REST request to perform a specific create operation based on a set of requirements
 - 5.3.a APIC
 - 5.3.b APIC-EM
 - 5.3.c NXOS-API
 - 5.3.d ASA-API
 - 5.3.e IOS XE/XR
- 5.4 Construct a REST request to perform a specific read operation based on a set of requirements
 - 5.4.a APIC
 - 5.4.b APIC-EM
 - 5.4.c NXOS-API
 - 5.4.d ASA-API
 - 5.4.e IOS XE/XR

- 5.5 Construct a REST request to perform a specific update operation based on a set of requirements
 - 5.5.a APIC
 - 5.5.b APIC-EM
 - 5.5.c NXOS-API
 - 5.5.d ASA-API
 - 5.5.e IOS XE/XR
- 5.6 Decide how to properly handle HTTP response codes
- 5.7 Compare and contrast RESTCONF and NETCONF
- 5.8 Describe the features and functionality of RAML

12% 6.0 Cisco Software Development Kits (SDKs)

- 6.1 Compare and contrast abstract and concrete classes
- 6.2 Create objects using the COBRA SDK
- 6.3 Read objects using the COBRA SDK
- 6.4 Update objects using the COBRA SDK

11% 7.0 Networking Fundamentals

- 7.1 Compare and contrast OSI and TCP/IP models
- 7.2 Describe IPv4 addressing and subnetting
- 7.3 Describe IPv6 addressing and subnetting
- 7.4 Describe functions of infrastructure components in a network
 - 7.4.a Firewalls
 - 7.4.b Switches
 - 7.4.c Routers
 - 7.4.d Load Balancers
- 7.5 Describe Switching Concepts
 - 7.5.a MAC addresses
 - 7.5.b VLANs
 - 7.5.c VXLANs
- 7.6 Describe Routing Concepts
 - 7.6.a Routes
 - 7.6.b Host routes
 - 7.6.c Gateways
 - 7.6.d Routing Protocols
- 7.7 Describe DNS service records for the purpose of service discovery
- 7.8 Describe the components and concepts of Network Programmability
 - 7.8.a Function of a controller
 - 7.8.b Separation of control plane and data plane
 - 7.8.c Northbound and Southbound APIs

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

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