



**Vendor:** Cisco

**Exam Code:** 200-901

**Exam Name:** Developing Applications and Automating  
Workflows using Cisco Core Platforms (DEVASC)

**Version:** DEMO

### QUESTION 1

What is the outcome of executing this command?

```
git clone ssh:/john@example.com/path/to/my-project.git
```

- A. Creates a local copy of a repository called "my-project"
- B. Creates a copy of a branch called "my-project"
- C. Initiates a new Git repository called "my-project"
- D. Creates a new branch called "my-project"

**Answer: A**

**Explanation:**

git clone is primarily used to point to an existing repo and make a clone or copy of that repo at in a new directory, at another location. The original repository can be located on the local filesystem or on remote machine accessible supported protocols. The git clone command copies an existing Git repository.

### QUESTION 2

Refer to the exhibit. What does the python function do?

```
def get_result()

    url = "https://sandboxdnac.cisco.com/dna/system/api/v1/auth/token"

    resp = requests.post(url, auth=HTTPBasicAuth(DNAC_USER, DNAC_PASSWORD))

    result = resp.json()['Token']

    return result
```

- A. It returns DNAC user and password.
- B. It returns HTTP Basic Authentication.
- C. It returns an authorization token.
- D. It reads a token from a local JSON file and posts the token to the DNAC URL.

**Answer: C**

**Explanation:**

You need to retrieve information through the API, so we need to do a GET request; don't forget the X-Auth-Token header containing the authorization token.

<https://developer.cisco.com/learning/lab/dnav3-dnac-nbapi-hello-world/step/4>

### QUESTION 3

Which two statements describe the traits of an asynchronous API call? (Choose two.)

- A. The order in which API calls return can be guaranteed
- B. A call to an API does not block the code, but rather it allows application processing to continue
- C. The end user can experience latency or performance lag while waiting for the API call to return
- D. Code execution blocks or waits for the call to an API to return.
- E. A callback function typically is used to process the response from an API call

**Answer:** BE

**Explanation:**

Asynchronous calls do not block (or wait) for the API call to return from the server. Execution continues on in your program, and when the call returns from the server, a “callback” function is executed.

<https://medium.com/codebuddies/getting-to-know-asynchronous-javascript-callbacks-promises-and-async-await-17e0673281ee>

#### QUESTION 4

Which REST architectural constraint indicates that no client context should be stored on the server between requests?

- A. stateless
- B. uniform interface
- C. cacheable
- D. client-server

**Answer:** A

**Explanation:**

RESTful constraints are described as follows:

- Client/server - clients and servers are fully separated and communicate only via the RESTful interface.
- Stateless - no client context or state is stored on the server between requests, and each client request must contain all of the information needed for the server to service the request.
- Cacheable - clients can cache responses, and servers must define the cacheability of the response.
- Layered - a client should not be able to tell whether it is connected to a server or to an intermediate that provides functionality such as security, caching, or load-balancing.
- Code on Demand (Optional) - servers can at times extend the capabilities of a client through the transfer of executable code or scripts.
- Uniform Interface - both client and server must adhere to a uniform interface that allows for the independent development of functionality.
- Resource Identification - individual resources are identified using URIs in requests. Representations of resources are distinct from the actual resources and may be provided in formats such as HTML, XML, or JSON.

#### QUESTION 5

Which two statements describe the advantages of using a version control system? (Choose two.)

- A. It allows for branching and merging so that different tasks are worked on in isolation before they are merged into a feature or master branch.
- B. It allows multiple engineers to work against the same code and configuration files and manage differences and conflicts.
- C. It provides tooling to automate application builds and infrastructure provisioning.
- D. It allows developers to write effective unit tests.
- E. It provides a system to track User Stories and allocate to backlogs.

**Answer:** AB

**Explanation:**

If you have a team of developers working on a project, all writing new code or changing previously written code, losing those files could set you back weeks or months. Version control

can protect your code by allowing changes to be checked in (through a process known as a code commit) to a hierarchical tree structure of folders with files in them. You often don't know what a developer might need to change or has changed, but the version control system does. Each check-in is tagged with who made the change and what the person changed within the code. Instead of using inefficient techniques such as file locking, a version control system handles concurrent check-ins, allowing two programmers to commit code at the same time. [...] Another aspect of a version control system is the ability to branch and merge code built independently. This is very useful if you are writing code on a part of an application that could conflict with another part written by another team.

<https://www.agileconnection.com/article/picking-right-branch-merge-strategy>

#### QUESTION 6

Which platform has an API that can be used to obtain a list of vulnerable software on user devices?

- A. Cisco Umbrella
- B. Cisco Firepower
- C. Cisco Identity Services Engine
- D. Cisco Advanced Malware Protection

**Answer: D**

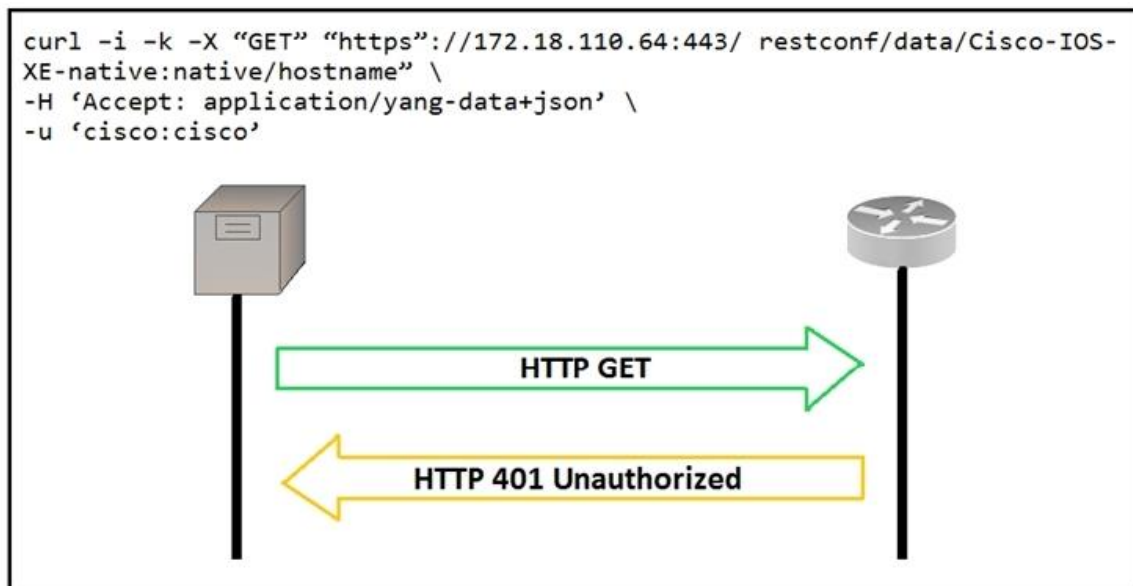
#### Explanation:

AMP for Endpoints identifies vulnerable software across your environment to help reduce the attack surface. Endpoints running vulnerable software are listed out and are given priority based on industry CVE (Common Vulnerabilities and Exposures) scoring.

#### QUESTION 7

Refer to the exhibit. An administrator attempts to perform a GET using the Cisco IOS XE RESTCONF API to return the hostname of a device. The sequence diagram illustrates the HTTP messages observed.

Which change to the API request resolves the issue?



- A. Add Content-Type HTTP header with 'application/yang-data+json' using -H 'Content-Type: application/yang-data+json'
- B. Use -u cisco:cisco instead of -u 'cisco:cisco'
- C. Change the request method from -X "GET" to -X' POST".
- D. Remove the -H 'Accept: application/yang-data+json' HTTP header because it is not required.

**Answer: B**

**Explanation:**

In bash, we can use either convention: 'cisco:cisco' or cisco:cisco (without quotes). However, 401 auth error mostly points to either an authentication header missing or that credentials are incorrect. Hence B is probably the closes choice in this case.

### QUESTION 8

What is the purpose of the Cisco VIRL software tool?

- A. To verify configurations against compliance standards
- B. To simulate and model networks
- C. To automate API workflows
- D. To test performance of an application

**Answer: B**

**Explanation:**

Cisco CML/VIRL is a powerful network simulation platform that is meant to be a flexible, all-in-one virtual networking lab. With Cisco CML/VIRL and virtual instances of network operating systems from Cisco, it is possible to build entire network simulations.

### QUESTION 9

Which statement about authentication a RESTCONF API session with a router that runs Cisco IOS XE software is true?

- A. OAuth must be used.
- B. A token must be retrieved and the associated string must be embedded in the X-Auth-Token header.
- C. Basic authentication must be used.
- D. No authentication is required.

**Answer: C**

**Explanation:**

Authentication is accomplished using typical HTTP authentication models, such as basic authentication, where usernames and passwords are Base64 encoded and transmitted from the client to the server via an Authentication header.

### QUESTION 10

Which way should be used to safely the API keys?

- A. In an environment variable unique to the system database
- B. Encrypted in a configuration file that is separate from the code
- C. Encrypted in the code in a function
- D. Plain text in the code as a constant

**Answer:** A

**Explanation:**

Storing the Meraki API Key as an environment variable

Once the API key is obtained, you'll need to store the Meraki dashboard API key as an environment variable:

```
export MERAKI_KEY = <YOUR MERAKI API KEY>
```

```
https://developer.cisco.com/codeexchange/github/repo/obrigg/meraki-channel-distribution/
```

**QUESTION 11**

Which two NETCONF operations cover the RESTCONF GET operation? (Choose two.)

- A. <get>
- B. <edit>
- C. <get-update>
- D. <modify-config>
- E. <get-config>

**Answer:** AE

**Explanation:**

NETCONF - Operations

<get> = Retrieve running configuration and device state information

<get-config> = Retrieve all or part of specified configuration data store

<edit-config> = Loads all or part of a configuration to the specified data store

<copy-config> = Replace an entire configuration data store with another

<delete-config> = Delete a configuration data store

<commit> = Copy candidate data store to running data store

<lock>/<unlock> = Lock or unlock the entire configuration data store system

<close-session> = Graceful termination of NETCONF session

<kill-session> = Forced termination of NETCONF session

**QUESTION 12**

FILL BLANK

Fill in the blanks to complete the Python script to request a service ticket using the APIC-EM REST API for the user "devnetuser".

```
import requests
import json
controller = 'devnetapi.cisco.com/sandbox/apic_em'
url = "https://" + controller + "api/va/ticket"
payload = {'username': '_____', 'password': '370940885'}
header = {'Content-type': 'application.json'}
response = _____.post(url, data=json.dumps(payload),
\
headers=_____, verify=False)
r_json = response.json()
print(r_json)
ticket = r_json["response"]["serviceTicket"]
print(ticket)
```

**Answer:** See explanation below

**Explanation:**

devnetuser

requests  
header

Reference: <https://developer.cisco.com/docs/apic-em/#!hello-world>

### QUESTION 13

Drag and Drop Question

Drag and drop the network automation interfaces from the left onto the transport protocols that they support on the right.

SSH	gRPC
HTTP	
HTTP/2	NETCONF
HTTPS	
	RESTCONF

Answer:

HTTP	gRPC
	HTTP/2
	NETCONF
	SSH
	RESTCONF
	HTTPS

Explanation:

Like other REST APIs, RESTCONF uses the HTTPS protocol to encapsulate and send messages. Authentication is accomplished using typical HTTP authentication models, such as basic authentication, where usernames and passwords are Base64 encoded and transmitted from the client to the server via an Authentication header.

#### QUESTION 15

Which status code is used by a REST API to indicate that the submitted payload is incorrect?

- A. 400
- B. 403
- C. 405
- D. 429

**Answer: A**

**Explanation:**

<https://httpstatuses.com/>

400 Bad Request

403 Forbidden

405 Method Not Allowed

421 Misdirected Request

429 Too Many Requests

#### QUESTION 16

Drag and Drop Question

Drag and drop the requests from the left into the correct order on the right to create and check the path trace between two devices using Cisco DNA center API.

GET /api/v1/flow-analysis/{flowAnalysisId}	Step 1
POST /api/v1/flow-analysis	Step 2
POST /api/system/v1/auth/token	Step 3
GET /api/v1/network-device/ and choose IP of source and destination devices	Step 4

**Answer:**

POST /api/system/v1/auth/token
GET /api/v1/network-device/ and choose IP of source and destination devices
POST /api/v1/flow-analysis
GET /api/v1/flow-analysis/{flowAnalysisId}



**Explanation:**

1. POST for the token
2. Get the list of network devices
3. Use POST to put src/dst in payload to get a flow-analysis on them, which will return a analysis ID
4. Using the returned Analysis ID, Get the results

**QUESTION 17**

Which two concepts describe test-driven development? (Choose two.)

- A. It enables code refactoring.
- B. Write a test before writing code.
- C. Implementation is driven by incremental testing of release candidates.
- D. User acceptance testers development the test requirements.
- E. Tests are created when code is ready for release.

**Answer:** AB

**Explanation:**

<https://www.agilealliance.org/glossary/tdd/>

It can be succinctly described by the following set of rules:

- write a "single" unit test describing an aspect of the program
- run the test, which should fail because the program lacks that feature
- write "just enough" code, the simplest possible, to make the test pass
- refactor" the code until it conforms to the simplicity criteria
- repeat, "accumulating" unit tests over time

**QUESTION 18**

How does requesting a synchronous API operation differ from requesting an asynchronous API operation?

- A. clients poll for the status of the execution of operations
- B. clients subscribe to a webhook for operation results
- C. clients can access the results immediately
- D. clients receive responses with a task id for further processing

**Answer:** C

**Explanation:**

The main difference between synchronous and asynchronous APIs is that a synchronous API waits for other aspects of the code to complete prior to moving on and processing additional code.

**QUESTION 19**

The project is migrated to a new codebase, the "old\_project" directory must be deleted. The directory has multiple read-only files, and it must be deleted recursively without prompting for confirmation. Which bash command must be used?

- A. `rm -rf old_project`
- B. `rm -r old_project`
- C. `rmdir -p old_project`
- D. `rmdir old_project`

**Answer:** A

**Explanation:**

To remove non-empty directories and all the files without being prompted, use rm with the -r (recursive) and -f.

<https://linuxize.com/post/how-to-remove-files-and-directories-using-linux-command-line/>

#### QUESTION 20

How does a developer create and switch to a new branch called 'my-bug--fix', to develop a product fix?

- A. git checkout my-bug-fix
- B. git branch -b my-bug-fix
- C. git check -b my-bug-fix
- D. git branch my-bug fix

**Answer:** A

**Explanation:**

The git checkout command accepts a -b argument that acts as a convenience method which will create the new branch and immediately switch to it. You can work on multiple features in a single repository by switching between them with git checkout.

<https://www.shellhacks.com/git-create-new-branch-and-checkout/>

#### QUESTION 21

Refer to the exhibit. Which function does the EXPOSE line perform when building an image from this Dockerfile?

```
# base image
FROM alpine

# Install python and pip
RUN apk add --update py2-pip

# Install python modules needed by the python app
COPY requirements.txt /usr/src/app/
RUN pip install --no-cache-dir -r /usr/src/app/requirements.txt

#copy local files for the app to run
COPY app.py /usr/src/app/
COPY templates/index.html /usr/src/app/templates/

EXPOSE 8080

#run the application
CMD ["python", "/usr/src/app/app.py"]
```

- A. Local port 8080 of the container that launched with this docker image is accessible from co-hosted containers and external clients.
- B. Local port 8080 is not reachable at all because no IP address is specified along with the EXPOSE command of the Dockerfile.
- C. Local port 8080 is accessible from other containers running on the same docker host as the container that launched with this docker image.
- D. Local port 8080 of the container that launched with this docker image is accessible to external

clients.

**Answer: C**

**Explanation:**

The EXPOSE instruction informs Docker that the container listens on the specified network ports at runtime.

The EXPOSE instruction does not actually publish the port. It functions as a type of documentation between the person who builds the image and the person who runs the container, about which ports are intended to be published. To actually publish the port when running the container, use the -p flag on docker run to publish and map one or more ports, or the -P flag to publish all exposed ports and map them to high-order ports.

Regardless of the EXPOSE settings, you can override them at runtime by using the -p flag.

<https://docs.docker.com/engine/reference/builder/>

## QUESTION 22

What is a benefit of model-driven programmability?

- A. It addresses the static architecture of traditional networks being decentralized and complex.
- B. By modeling data, it ensures that vast quantities of data are usable for monitoring.
- C. It provides a programmatic and standards-based way of writing configurations to any network device.
- D. It simplifies management and operations by decoupling the networking hardware from its control mechanism.

**Answer: C**

**Explanation:**

Traditionally CLIs or SDK library functions are used to configure network devices. CLIs and scripts are almost always device-specific; they can only be used in the same type of devices that use the same CLIs from the same vendor. Moreover, those functions may not exist for all configuration commands, and where they do exist, it may be difficult to program a complex configuration.

The model-driven programming provides a standard way to describe the desired configuration of the network devices. Of course, the target device itself has to support the ability to use model-driven configuration.

## QUESTION 23

Which tool is used to block all traffic to the domain by using a single API call?

- A. Cisco ISE
- B. Cisco Firepower
- C. Cisco AMP
- D. Cisco Umbrella

**Answer: D**

**Explanation:**

Cisco Umbrella is a Domain Name System (DNS)-based security mechanism that can provide common security for both on-premises and off-premises to provide endpoint security. Cisco Umbrella on-premises deployments do not require an agent to be installed on the endpoint. The firewall is good for blocking inbound threats, but consider threats that originate inside the network. These threats cannot be stopped by perimeter security because they are already behind the firewall.

Cisco Umbrella can block client connections at the application layer, regardless of network connection or perimeter security, by preventing the client from resolving DNS for the remote destination. If the client cannot resolve DNS for the remote destination, it cannot establish a connection and download the malware. Cisco Umbrella can be used to prevent connections to malicious websites or to websites that violate corporate security policy.

#### QUESTION 24

What is a difference between a synchronous API and an asynchronous API?

- A. An asynchronous API can make offline calls while synchronous APIs do not have this capability.
- B. Synchronous API calls are returned immediately while asynchronous calls do not guarantee an immediate response.
- C. Synchronous API calls require an authentication header to be sent while asynchronous calls do not require authentication.
- D. An asynchronous API can make a larger number of calls in a specified time period than a synchronous API.

**Answer: D**

**Explanation:**

Synchronous API calls are blocking calls that do not return until either the change has been completed or there has been an error

Asynchronous the response to the API call is returned immediately with a polling URL while the request continues to be processed

<https://developer.cisco.com/docs/packaged-contact-center/#!/synchronous-vs-asynchronous-writes/synchronous-vs-asynchronous-writes>

#### QUESTION 25

What are two considerations when selecting the "best route" for a network device to reach its destination? (Choose two.)

- A. MAC address
- B. metrics
- C. administrative distance
- D. IP address
- E. subnet mask

**Answer: BC**

**Explanation:**

The main considerations while building the routing table are:

- Administrative distance
- Metrics
- Prefix length

<https://www.cisco.com/c/en/us/support/docs/ip/enhanced-interior-gateway-routing-protocol-eigrp/8651-21.html>

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