

Mullesoft.Premium.MCPA-LEVEL-1-MAINTENANCE.30q - DEMO

Number: MCPA-LEVEL-1-M
Passing Score: 800
Time Limit: 120 min



Exam Code: MCPA-LEVEL-1-MAINTENANCE

Exam Name: MuleSoft Certified Platform Architect - Level 1 MAINTENANCE

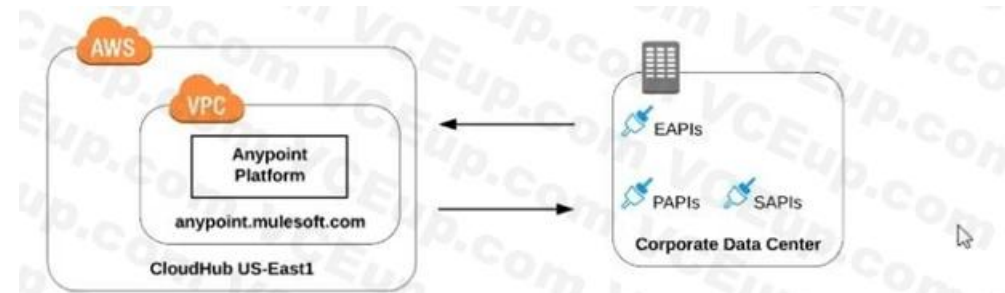
Website: <https://VCEup.com/>

Team-Support: <https://VCEplus.io/>



QUESTION 1

Refer to the exhibit.



what is true when using customer-hosted Mule runtimes with the MuleSoft-hosted Anypoint Platform control plane (hybrid deployment)?

- A. Anypoint Runtime Manager initiates a network connection to a Mule runtime in order to deploy Mule applications
- B. The MuleSoft-hosted Shared Load Balancer can be used to load balance API invocations to the Mule runtimes
- C. API implementations can run successfully in customer-hosted Mule runtimes, even when they are unable to communicate with the control plane
- D. Anypoint Runtime Manager automatically ensures HA in the control plane by creating a new Mule runtime instance in case of a node failure

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: API implementations can run successfully in customer-hosted Mule

Explanation:runtimes, even when they are unable to communicate with the control plane.

>> We CANNOT use Shared Load balancer to load balance APIs on customer hosted runtimes

• Load balancing

Load balancing is not provided for hybrid deployments. You can manage load balancing with the tools connected to your on-premises resources.

>> For Hybrid deployment models, the on-premises are first connected to Runtime Manager using Runtime Manager agent. So, the connection is initiated first from On-premises to Runtime Manager. Then all control can be done from Runtime Manager.

>> Anypoint Runtime Manager CANNOT ensure automatic HA. Clusters/Server Groups etc should be configured before hand.

Only TRUE statement in the given choices is, API implementations can run successfully in customerhosted Mule runtimes, even when they are unable to communicate with the control plane. There are several references below to justify this statement.

Reference:

<https://docs.mulesoft.com/runtime-manager/deployment-strategies#hybrid-deployments>

<https://help.mulesoft.com/s/article/On-Premise-Runtimes-Disconnected-From-US-Control-Plane-June-18th-2018>

<https://help.mulesoft.com/s/article/Runtime-Manager-cannot-manage-On-Prem-Applications-and-Servers-from-US-Control-Plane-June-25th-2019>

<https://help.mulesoft.com/s/article/On-premise-Runtimes-Appear-Disconnected-in-Runtime-Manager-May-29th-2018>

On-Premise Runtimes Disconnected From US Control Plane - June 18th 2018

Jun 19, 2018 - RCA

Content

Impacted Platforms	Impacted Duration
Anypoint Runtime Manager / On-Prem Runtimes	During this time frame, on-prem runtimes appeared disconnected from the US Anypoint Control Plane: June 18, 2018 10:35 AM PST to June 18, 2018 11:12 AM PST

Incident Description

On-premises applications weren't able to connect to Anypoint Runtime Manager during the length of the incident, which made on-premises runtimes to throw errors in their logs because they received network disconnect messages from the control plane. Other than generating the log as mentioned above entries, on-premises runtimes and applications were not impacted.

Runtime Manager cannot manage On-Prem Applications and Servers from US Control Plane - June 25th 2019

Jul 3, 2019 - RCA

Content**Incident Summary**

Between 2:51 p.m. PT June 25th and 12:41 a.m. PT June 26th, customers were not able to manage their On-Prem applications and servers. The availability of running applications and runtimes were not impacted.

Impacted Platforms	Impact Duration
US-Prod	9 hours and 50 minutes

On-premise Runtimes Appear Disconnected in Runtime Manager - May 29th 2018

Jun 2, 2018 - RCA

Content

Impacted Platforms	Impacted Duration
Anypoint Runtime Manager / On-Prem Runtimes	During this time frame, on-prem runtimes appeared disconnected from the US Anypoint Control Plane: Tuesday, May 29, 2018, 3:35 AM PDT to 4:27 AM PDT

Incident Description

During the incident time frame, managed Runtimes running on-premises disconnected from the US Anypoint Platform Control Plane and may have encountered recurrent re-connection errors. Customers were unable to manage applications running on those runtimes or register new ones during this time. Runtimes and Applications continued to operate without impact.

QUESTION 2

A System API is designed to retrieve data from a backend system that has scalability challenges. What API policy can best safeguard the backend system?

- A. IPwhitelist
- B. SLA-based rate limiting
- C. Auth 2 token enforcement
- D. Client ID enforcement

Correct Answer: B
Section: (none)
Explanation

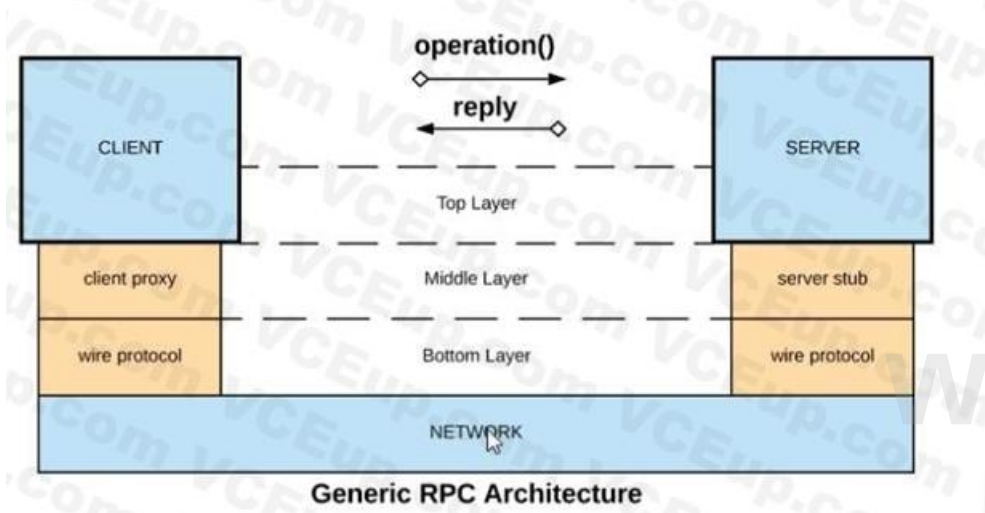
Explanation/Reference:

Explanation:
 Correct Answer: SLA-based rate limiting
 Explanation:

>> Client Id enforcement policy is a "Compliance" related NFR and does not help in maintaining the "Quality of Service (QoS)". It CANNOT and NOT meant for protecting the backend systems from scalability challenges.
 >> IP Whitelisting and OAuth 2.0 token enforcement are "Security" related NFRs and again does not help in maintaining the "Quality of Service (QoS)". They CANNOT and are NOT meant for protecting the backend systems from scalability challenges.
 Rate Limiting, Rate Limiting-SLA, Throttling, Spike Control are the policies that are "Quality of Service (QoS)" related NFRs and are meant to help in protecting the backend systems from getting overloaded.
<https://dzone.com/articles/how-to-secure-apis>

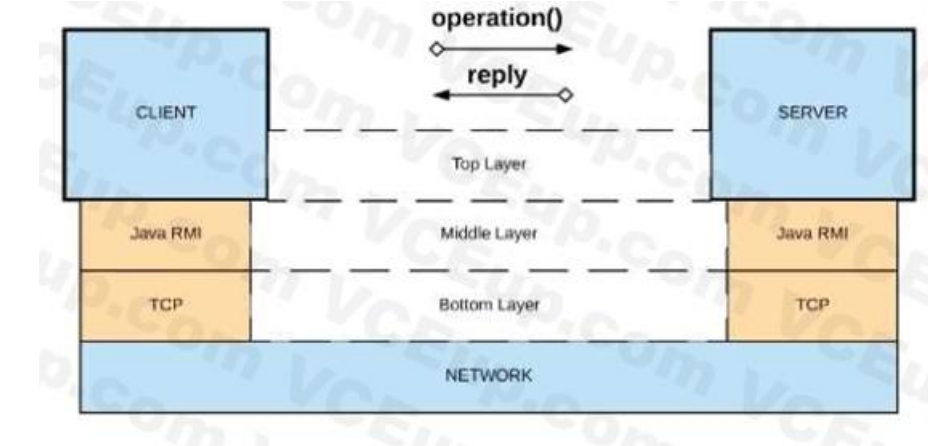
QUESTION 3

Refer to the exhibit.

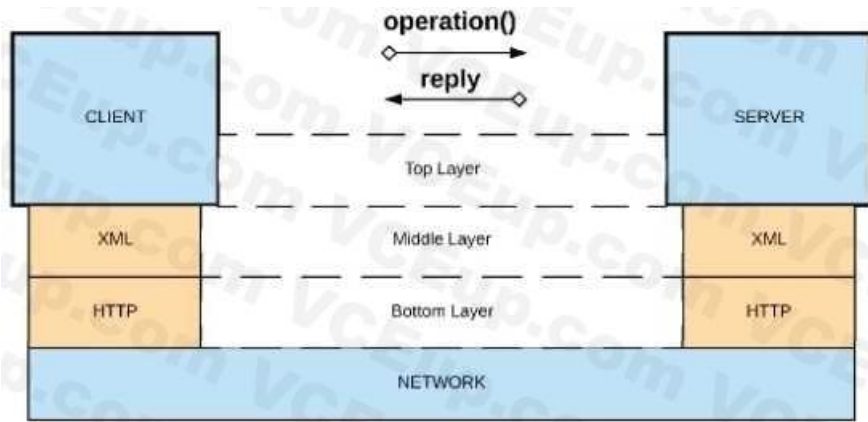


What is a valid API in the sense of API-led connectivity and application networks?

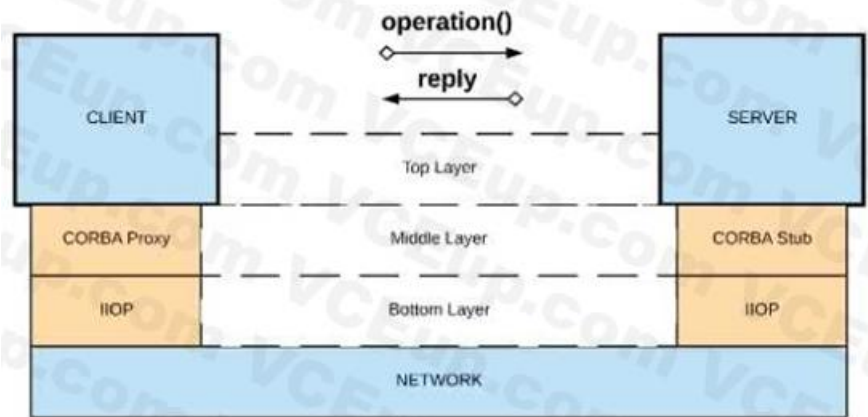
A. Java RMI over TCP



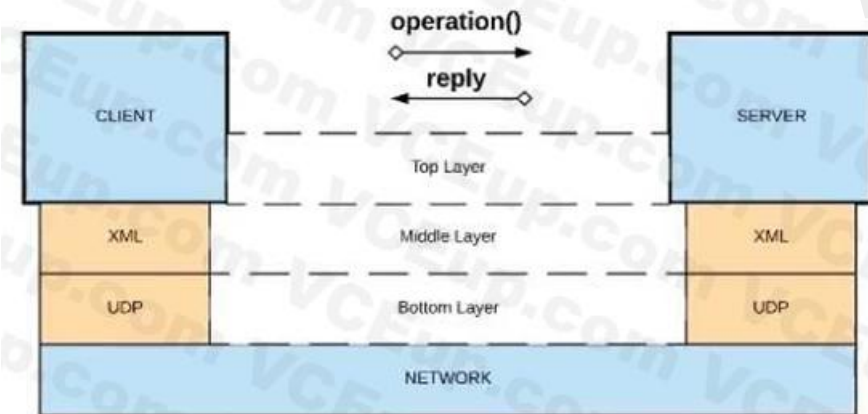
B. Java RMI over TCP



C. CORBA over HOP



D. XML over UDP



Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

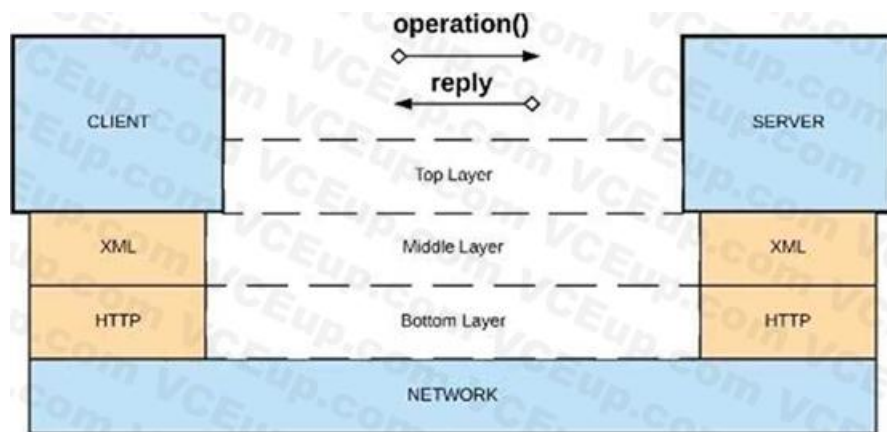
Correct Answer: XML over HTTP

Explanation:

>> API-led connectivity and Application Networks urge to have the APIs on HTTP based protocols for building most effective APIs and networks on top of them.

>> The HTTP based APIs allow the platform to apply various varieties of policies to address many NFRs

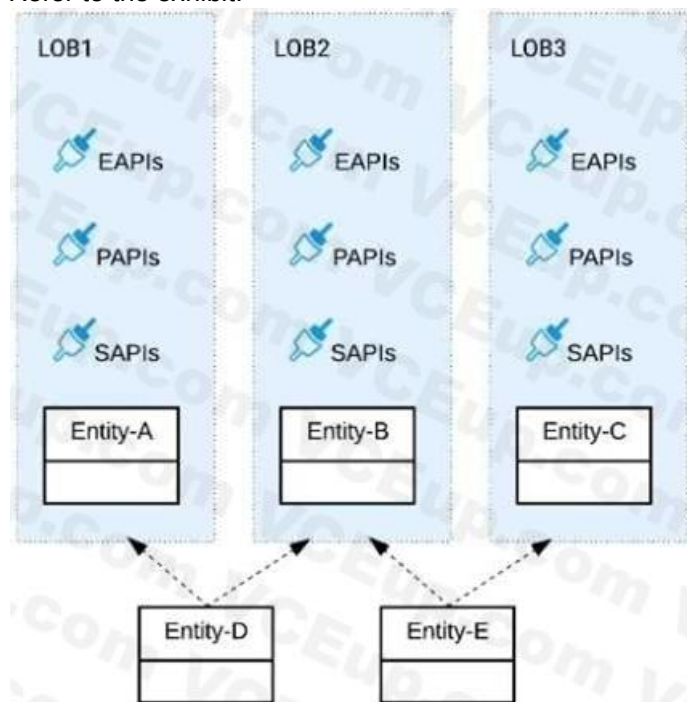
>> The HTTP based APIs also allow to implement many standard and effective implementation patterns that adhere to HTTP based w3c rules.



Bottom of Form
Top of Form

QUESTION 4

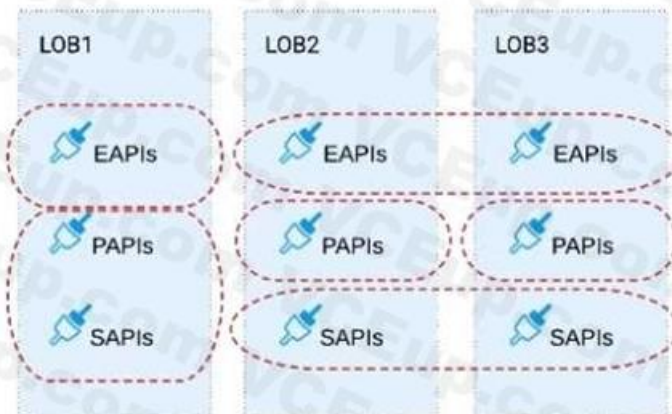
Refer to the exhibit.



Three business processes need to be implemented, and the implementations need to communicate with several different SaaS applications.

These processes are owned by separate (siloe) LOBs and are mainly independent of each other, but do share a few business entities. Each LOB has one development team and their own budget In this organizational context, what is the most effective approach to choose the API data models for the APIs that will implement these business processes with minimal redundancy of the data models?

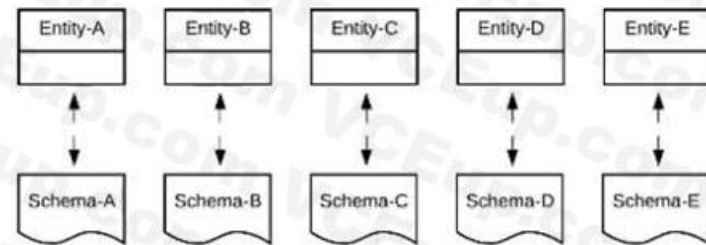
A. Build several Bounded Context Data Models that align with coherent parts of the business processes and the definitions of associated business entities



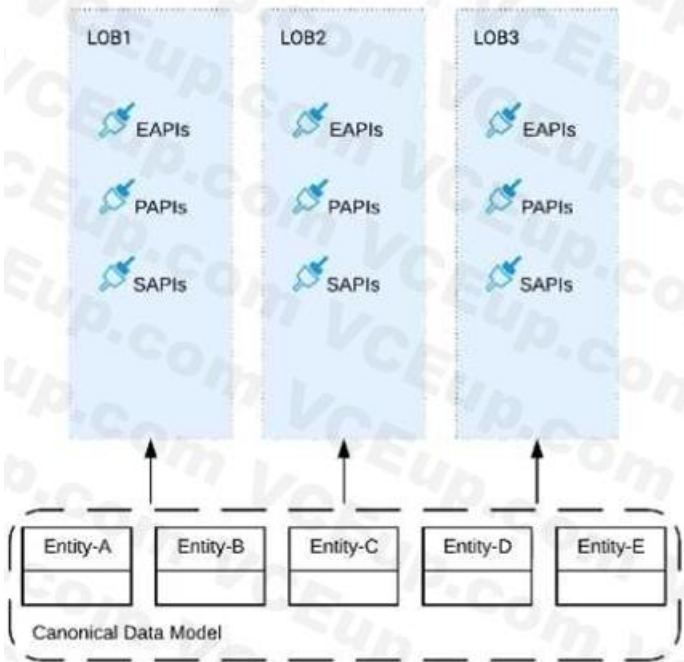
B. Build distinct data models for each API to follow established micro-services and Agile API-centric practices



C. Build all API data models using XML schema to drive consistency and reuse across the organization



D. Build one centralized Canonical Data Model (Enterprise Data Model) that unifies all the data types from all three business processes, ensuring the data model is consistent and non-redundant



Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

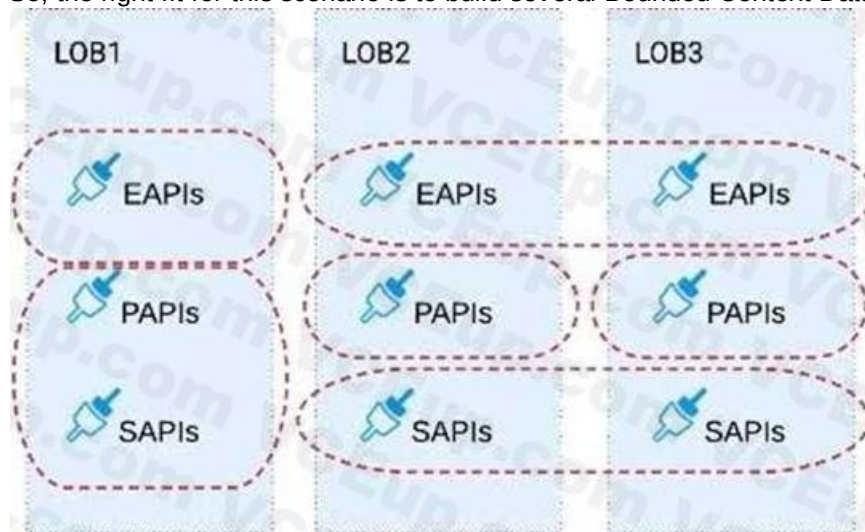
Explanation:

Correct Answer: Build several Bounded Context Data Models that align with coherent parts

Explanation: of the business processes and the definitions of associated business entities.

>> The options w.r.t building API data models using XML schema/ Agile API-centric practices are irrelevant to the scenario given in the question. So these two are INVALID.

>> Building EDM (Enterprise Data Model) is not feasible or right fit for this scenario as the teams and LOBs work in silo and they all have different initiatives, budget etc.. Building EDM needs intensive coordination among all the team which evidently seems not possible in this scenario.
So, the right fit for this scenario is to build several Bounded Context Data Models that align with coherent parts of the business processes and the definitions of associated business entities.



QUESTION 5

What best describes the Fully Qualified Domain Names (FQDNs), also known as DNS entries, created when a Mule application is deployed to the CloudHub Shared Worker Cloud?

- A. A fixed number of FQDNs are created, IRRESPECTIVE of the environment and VPC design
- B. The FQDNs are determined by the application name chosen, IRRESPECTIVE of the region
- C. The FQDNs are determined by the application name, but can be modified by an administrator after deployment
- D. The FQDNs are determined by both the application name and the Anypoint Platform organization

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: The FQDNs are determined by the application name chosen,

Explanation:IRRESPECTIVE of the region

>> When deploying applications to Shared Worker Cloud, the FQDN are always determined by application name chosen.

>> It does NOT matter what region the app is being deployed to.

>> Although it is fact and true that the generated FQDN will have the region included in it (Ex: expsalesorder- api.au-s1.cloudhub.io), it does NOT mean that the same name can be used when deploying to another CloudHub region.

>> Application name should be universally unique irrespective of Region and Organization and solely determines the FQDN for Shared Load Balancers.

QUESTION 6

When using CloudHub with the Shared Load Balancer, what is managed EXCLUSIVELY by the API implementation (the Mule application) and NOT by Anypoint Platform?

- A. The assignment of each HTTP request to a particular CloudHub worker
- B. The logging configuration that enables log entries to be visible in Runtime Manager
- C. The SSL certificates used by the API implementation to expose HTTPS endpoints
- D. The number of DNS entries allocated to the API implementation

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: The SSL certificates used by the API implementation to expose

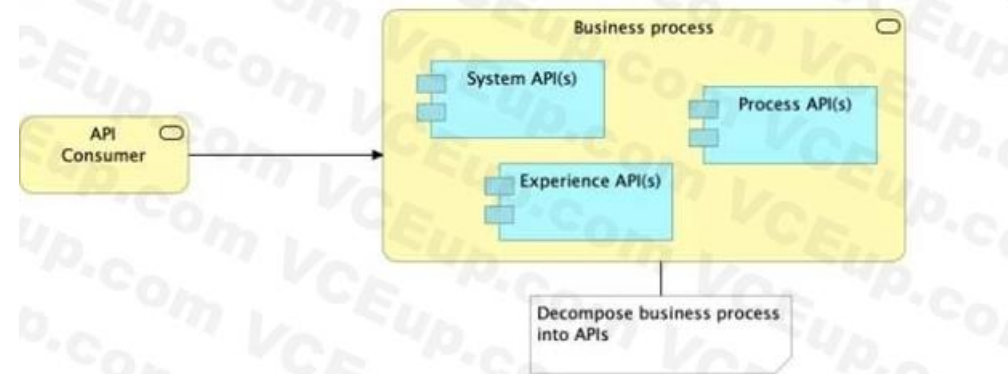
Explanation:HTTPS endpoints

>> The assignment of each HTTP request to a particular CloudHub worker is taken care by AnypointPlatform itself. We need not manage it explicitly in the API implementation and in fact we CANNOTmanage it in the API implementation.

>> The logging configuration that enables log entries to be visible in Runtime Manager is ALWAYS managed in the API implementation and NOT just for SLB. So this is not something we do EXCLUSIVELY when using SLB.
 >> We DO NOT manage the number of DNS entries allocated to the API implementation inside the code. Anypoint Platform takes care of this.
 It is the SSL certificates used by the API implementation to expose HTTPS endpoints that is to be managed EXCLUSIVELY by the API implementation. Anypoint Platform does NOT do this when using SLBs.

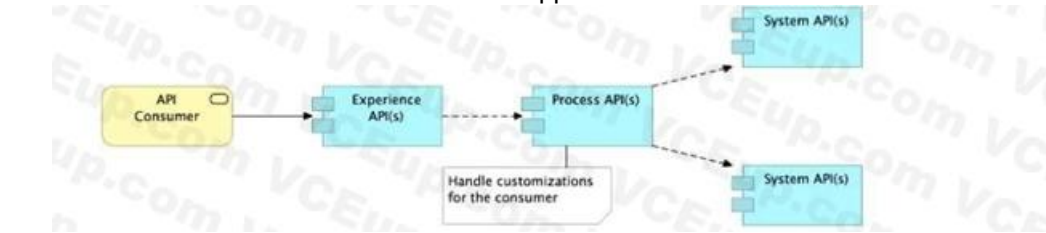
QUESTION 7

Refer to the exhibit.

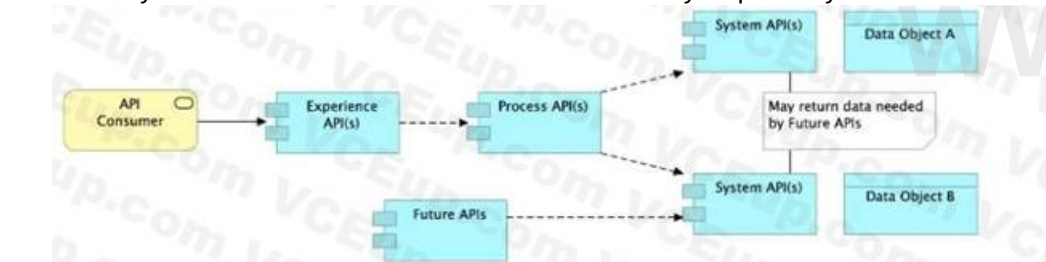


What is the best way to decompose one end-to-end business process into a collaboration of Experience, Process, and System APIs?

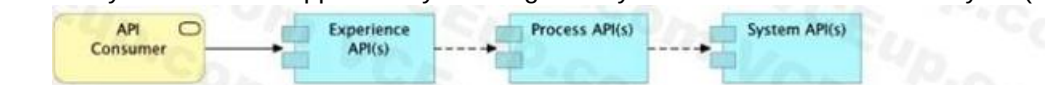
A. Handle customizations for the end-user application at the Process API level rather than the Experience API level



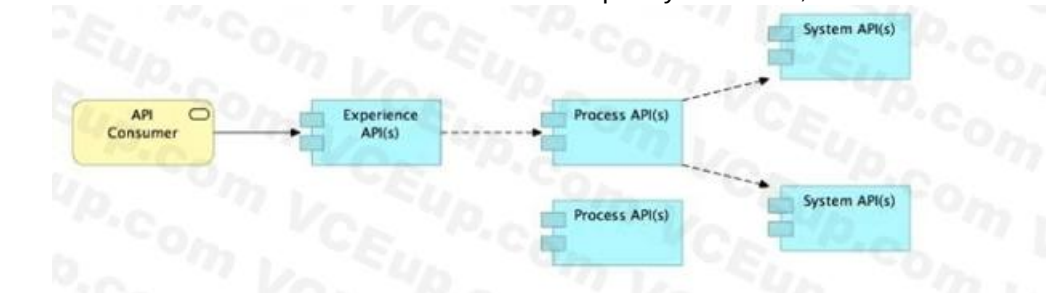
B. Allow System APIs to return data that is NOT currently required by the identified Process or Experience APIs



C. Always use a tiered approach by creating exactly one API for each of the 3 layers (Experience, Process and System APIs)



D. Use a Process API to orchestrate calls to multiple System APIs, but NOT to other Process APIs



Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: Allow System APIs to return data that is NOT currently required by

Explanation: the identified Process or Experience APIs.

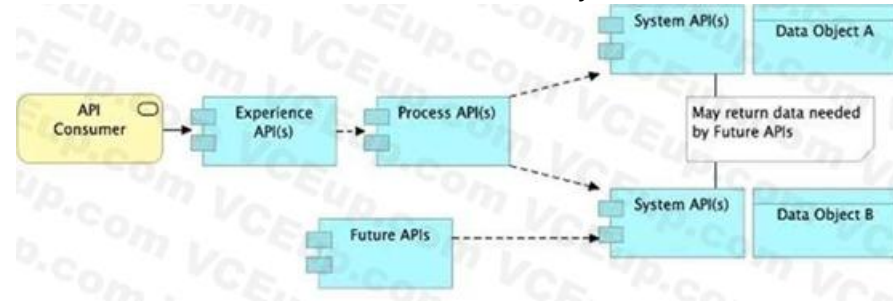
>> All customizations for the end-user application should be handled in "Experience API" only. Not in Process API

>> We should use tiered approach but NOT always by creating exactly one API for each of the 3 layers. Experience APIs might be one but Process APIs and System APIs are often more than one.

System APIs for sure will be more than one all the time as they are the smallest modular APIs built in front of end systems.

>> Process APIs can call System APIs as well as other Process APIs. There is no such anti-design pattern in API-Led connectivity saying Process APIs should not call other Process APIs.

So, the right answer in the given set of options that makes sense as per API-Led connectivity principles is to allow System APIs to return data that is NOT currently required by the identified Process or Experience APIs. This way, some future Process APIs can make use of that data from System APIs and we need NOT touch the System layer APIs again and again.



QUESTION 8

What is true about where an API policy is defined in Anypoint Platform and how it is then applied to API instances?

- A. The API policy is defined in Runtime Manager as part of the API deployment to a Mule runtime, and then ONLY applied to the specific API Instance
- B. The API policy is defined in API Manager for a specific API Instance, and then ONLY applied to the specific API instance
- C. The API policy is defined in API Manager and then automatically applied to ALL API instances
- D. The API policy is defined in API Manager, and then applied to ALL API instances in the specified environment

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: The API policy is defined in API Manager for a specific API

Explanation: instance, and then ONLY applied to the specific API instance.

>> Once our API specifications are ready and published to Exchange, we need to visit API Manager and register an API instance for each API.

>> API Manager is the place where management of API aspects takes place like addressing NFRs by enforcing policies on them.

>> We can create multiple instances for a same API and manage them differently for different purposes.

>> One instance can have a set of API policies applied and another instance of same API can have different set of policies applied for some other purpose.

>> These APIs and their instances are defined PER environment basis. So, one needs to manage them separately in each environment.

>> We can ensure that same configuration of API instances (SLAs, Policies etc..) gets promoted when promoting to higher environments using platform feature. But this is optional only. Still one can change them per environment basis if they have to.

>> Runtime Manager is the place to manage API Implementations and their Mule Runtimes but NOT APIs itself. Though API policies get executed in Mule Runtimes, We CANNOT enforce API policies in Runtime Manager. We would need to do that via API Manager only for a cherry-picked instance in an environment.

So, based on these facts, right statement in the given choices is - "The API policy is defined in API Manager for a specific API instance, and then ONLY applied to the specific API instance".

Reference: <https://docs.mulesoft.com/api-manager/2.x/latest-overview-concept>

QUESTION 9

An API implementation is deployed to CloudHub.

What conditions can be alerted on using the default Anypoint Platform functionality, where the alert conditions depend on the end-to-end request processing of the API implementation?

- A. When the API is invoked by an unrecognized API client
- B. When a particular API client invokes the API too often within a given time period
- C. When the response time of API invocations exceeds a threshold
- D. When the API receives a very high number of API invocations

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: When the response time of API invocations exceeds a threshold

Explanation:

>> Alerts can be setup for all the given options using the default Anypoint Platform functionality

>> However, the question insists on an alert whose conditions depend on the end-to-end request processing of the API implementation.

>> Alert w.r.t "Response Times" is the only one which requires end-to-end request processing of API implementation in order to determine if the threshold is exceeded or not.

Reference: <https://docs.mulesoft.com/api-manager/2.x/using-api-alerts>**QUESTION 10**

A Mule application exposes an HTTPS endpoint and is deployed to the CloudHub Shared WorkerCloud. All traffic to that Mule application must stay inside the AWS VPC.

To what TCP port do API invocations to that Mule application need to be sent?

- A. 443
- B. 8081
- C. 8091
- D. 8082

Correct Answer: D**Section:** (none)**Explanation****Explanation/Reference:**

Explanation:

Correct Answer: 8082

Explanation:

>> 8091 and 8092 ports are to be used when keeping your HTTP and HTTPS app private to the LOCALVPC respectively.

>> Above TWO ports are not for Shared AWS VPC/ Shared Worker Cloud.

>> 8081 is to be used when exposing your HTTP endpoint app to the internet through Shared LB

>> 8082 is to be used when exposing your HTTPS endpoint app to the internet through Shared LBSo, API invocations should be sent to port 8082 when calling this HTTPS based app.

Reference:

<https://docs.mulesoft.com/runtime-manager/cloudhub-networking-guide><https://help.mulesoft.com/s/article/Configure-Cloudhub-Application-to-Send-a-HTTPS-Request-Directly-to-Another-Cloudhub-Application><https://help.mulesoft.com/s/question/0D52T00004mXXULSA4/multiple-http-listeners-oncloudhub-one-with-port-9090>**QUESTION 11**

What is a key requirement when using an external Identity Provider for Client Management in Anypoint Platform?

- A. Single sign-on is required to sign in to Anypoint Platform
- B. The application network must include System APIs that interact with the Identity Provider
- C. To invoke OAuth 2.0-protected APIs managed by Anypoint Platform, API clients must submit access tokens issued by that same Identity Provider
- D. APIs managed by Anypoint Platform must be protected by SAML 2.0 policies

Correct Answer: C**Section:** (none)**Explanation****Explanation/Reference:**

Explanation:

<https://www.folkstalk.com/2019/11/mulesoft-integration-and-platform.html>

Correct Answer: To invoke OAuth 2.0-protected APIs managed by Anypoint

Explanation: Platform, API clients must submit access tokens issued by that same Identity Provider *****

>> It is NOT necessary that single sign-on is required to sign in to Anypoint Platform because we are using an external Identity Provider for Client Management

>> It is NOT necessary that all APIs managed by Anypoint Platform must be protected by SAML 2.0 policies because we are using an external Identity Provider for Client Management

>> Not TRUE that the application network must include System APIs that interact with the Identity Provider because we are using an external Identity Provider for Client Management Only TRUE statement in the given options is - "To invoke

OAuth 2.0-protected APIs managed by Anypoint Platform, API clients must submit access tokens issued by that same Identity Provider"

Reference:

<https://docs.mulesoft.com/api-manager/2.x/external-oauth-2.0-token-validation-policy><https://blogs.mulesoft.com/dev/api-dev/api-security-ways-to-authenticate-and-authorize/>

QUESTION 12

The responses to some HTTP requests can be cached depending on the HTTP verb used in therequest. According to the HTTP specification, for what HTTP verbs is this safe to do?

- A. PUT, POST, DELETE
- B. GET, HEAD, POST
- C. GET, PUT, OPTIONS
- D. GET, OPTIONS, HEAD

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: GET, OPTIONS, HEAD

APIs use HTTP-based protocols: cached HTTP responses from previous HTTP requests may potentially be returned if the same HTTP request is seen again.

Safe HTTP methods are ones that do not alter the state of the underlying resource. That is, the HTTP responses to requests using safe HTTP methods may be cached.

The HTTP standard requires the following HTTP methods on any resource to be safe:

- GET
- HEAD
- OPTIONS

Safety must be honored by REST APIs (but not by non-REST APIs like SOAP APIs): It is the responsibility of every API implementation to implement GET, HEAD or OPTIONS methods such that they never change the state of a resource.

Explanation: <http://restcookbook.com/HTTP%20Methods/idempotency/>

QUESTION 13

What is the most performant out-of-the-box solution in Anypoint Platform to track transaction state in an asynchronously executing long-running process implemented as a Mule application deployed to multiple CloudHub workers?

- A. Redis distributed cache
- B. java.util.WeakHashMap
- C. Persistent Object Store
- D. File-based storage

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: Persistent Object Store

Explanation:

>> Redis distributed cache is performant but NOT out-of-the-box solution in Anypoint Platform

>> File-storage is neither performant nor out-of-the-box solution in Anypoint Platform

>> java.util.WeakHashMap needs a completely custom implementation of cache from scratch using Java code and is limited to the JVM where it is running. Which means the state in the cache is not worker aware when running on multiple workers. This type of cache is local to the worker. So, this is neither out-of-the-box nor worker-aware among multiple workers on cloudhub.

<https://www.baeldung.com/java-weakhashmap>

>> Persistent Object Store is an out-of-the-box solution provided by Anypoint Platform which is performant as well as worker aware among multiple workers running on CloudHub.

<https://docs.mulesoft.com/object-store/So>, Persistent Object Store is the right answer.

QUESTION 14

How can the application of a rate limiting API policy be accurately reflected in the RAML definition of an API?

- A. By refining the resource definitions by adding a description of the rate limiting policy behavior

- B. By refining the request definitions by adding a remaining Requests query parameter with description, type, and example
- C. By refining the response definitions by adding the out-of-the-box Anypoint Platform rate-limitenforcement securityScheme with description, type, and example
- D. By refining the response definitions by adding the x-ratelimit-* response headers with description, type, and example

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: By refining the response definitions by adding the x-ratelimit-* response

Explanation:headers with description, type, and example



Reference:

<https://docs.mulesoft.com/api-manager/2.x/rate-limiting-and-throttling#response-headers>

<https://docs.mulesoft.com/api-manager/2.x/rate-limiting-and-throttling-sla-basedpolicies#response-headers>

QUESTION 15

An organization has several APIs that accept JSON data over HTTP POST. The APIs are all publiclyavailable and are associated with several mobile applications and web applications.

The organization does NOT want to use any authentication or compliance policies for these APIs, but at the same time, is worried that some bad actor could send payloads that could somehow compromise the applications or servers running the API implementations.

What out-of-the-box Anypoint Platform policy can address exposure to this threat?

- A. Shut out bad actors by using HTTPS mutual authentication for all API invocations
- B. Apply an IP blacklist policy to all APIs; the blacklist will include all bad actors
- C. Apply a Header injection and removal policy that detects the malicious data before it is used
- D. Apply a JSON threat protection policy to all APIs to detect potential threat vectors

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: Apply a JSON threat protection policy to all APIs to detect potential

Explanation:threat vectors

>> Usually, if the APIs are designed and developed for specific consumers (known consumers/customers) then we would IP Whitelist the same to ensure that traffic only comes from them.

>> However, as this scenario states that the APIs are publicly available and being used by so many mobile and web applications, it is NOT possible to identify and blacklist all possible bad actors.

>> So, JSON threat protection policy is the best chance to prevent any bad JSON payloads from such bad actors.

QUESTION 16

An API experiences a high rate of client requests (TPS) vwth small message payloads. How can usage limits be imposed on the API based on the type of client application?

- A. Use an SLA-based rate limiting policy and assign a client application to a matching SLA tier based on its type
- B. Use a spike control policy that limits the number of requests for each client application type
- C. Use a cross-origin resource sharing (CORS) policy to limit resource sharing between client applications, configured by the client application type
- D. Use a rate limiting policy and a client ID enforcement policy, each configured by the client application type

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: Use an SLA-based rate limiting policy and assign a client

Explanation: application to a matching SLA tier based on its type.

>> SLA tiers will come into play whenever any limits to be imposed on APIs based on client type

Reference: <https://docs.mulesoft.com/api-manager/2.x/rate-limiting-and-throttling-sla-basedpolicies>

QUESTION 17

A code-centric API documentation environment should allow API consumers to investigate and execute API client source code that demonstrates invoking one or more APIs as part of representative scenarios. What is the most effective way to provide this type of code-centric API documentation environment using Anypoint Platform?

- A. Enable mocking services for each of the relevant APIs and expose them via their Anypoint Exchange entry
- B. Ensure the APIs are well documented through their Anypoint Exchange entries and API Consoles and share these pages with all API consumers
- C. Create API Notebooks and include them in the relevant Anypoint Exchange entries
- D. Make relevant APIs discoverable via an Anypoint Exchange entry

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: Create API Notebooks and Include them in the relevant Anypoint exchange

Explanation: entries

>> API Notebooks are the one on Anypoint Platform that enable us to provide code-centric API documentation

Reference: <https://docs.mulesoft.com/exchange/to-use-api-notebook>

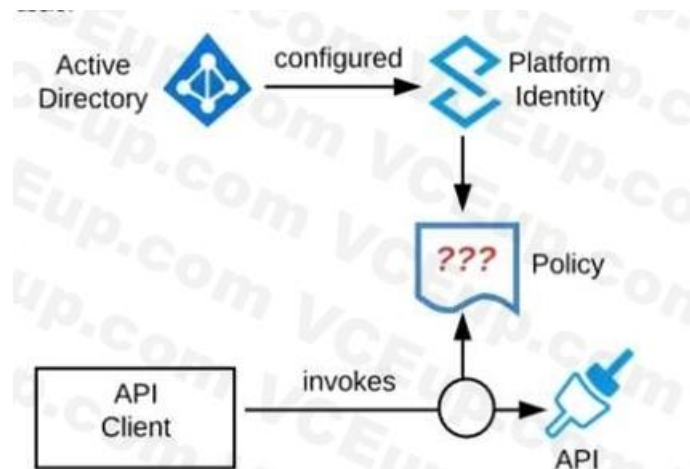


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QUESTION 18

Refer to the exhibit. An organization is running a Mule standalone runtime and has configured Active Directory as the Anypoint Platform external Identity Provider. The organization does not have budget for other system components.



What policy should be applied to all instances of APIs in the organization to most effectively restrict access to a specific group of internal users?

- A. Apply a basic authentication - LDAP policy; the internal Active Directory will be configured as the LDAP source for authenticating users
- B. Apply a client ID enforcement policy; the specific group of users will configure their client applications to use their specific client credentials
- C. Apply an IP whitelist policy; only the specific users' workstations will be in the whitelist
- D. Apply an OAuth 2.0 access token enforcement policy; the internal Active Directory will be configured as the OAuth server

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: Apply a basic authentication - LDAP policy; the internal Active

Directory will be configured as the LDAP source for authenticating users.

>> IP Whitelisting does NOT fit for this purpose. Moreover, the users workstations may not necessarily have static IPs in the network.

>> OAuth 2.0 enforcement requires a client provider which isn't in the organizations system components.

>> It is not an effective approach to let every user create separate client credentials and configure those for their usage.

The effective way is to apply a basic authentication - LDAP policy and the internal Active Directory will be configured as the LDAP source for authenticating users.

Reference: <https://docs.mulesoft.com/api-manager/2.x/basic-authentication-ldap-concept>

QUESTION 19

What is a best practice when building System APIs?

- A. Document the API using an easily consumable asset like a RAML definition
- B. Model all API resources and methods to closely mimic the operations of the backend system
- C. Build an Enterprise Data Model (Canonical Data Model) for each backend system and apply it to System APIs
- D. Expose to API clients all technical details of the API implementation's interaction with the backend system

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: Model all API resources and methods to closely mimic the

operations of the backend system.

>> There are NO fixed and straight best practices while opting data models for APIs. They are completely contextual and depends on number of factors. Based upon those factors, an enterprise can choose if they have to go with Enterprise Canonical Data Model or Bounded Context Model etc.

>> One should NEVER expose the technical details of API implementation to their API clients. Only the API interface/ RAML is exposed to API clients.

>> It is true that the RAML definitions of APIs should be as detailed as possible and should reflect most of the documentation. However, just that is NOT enough to call your API as best documented API. There should be even more documentation on Anypoint Exchange with API Notebooks etc. to make and create a developer friendly API and repository..

>> The best practice always when creating System APIs is to create their API interfaces by modeling their resources and methods to closely reflect the operations and functionalities of that backend system.

QUESTION 20

What CANNOT be effectively enforced using an API policy in Anypoint Platform?

- A. Guarding against Denial of Service attacks
- B. Maintaining tamper-proof credentials between APIs
- C. Logging HTTP requests and responses
- D. Backend system overloading

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: Guarding against Denial of Service attacks

Explanation:

>> Backend system overloading can be handled by enforcing "Spike Control Policy"

>> Logging HTTP requests and responses can be done by enforcing "Message Logging Policy"

>> Credentials can be tamper-proofed using "Security" and "Compliance" Policies However, unfortunately, there is no proper way currently on Anypoint Platform to guard against DOS attacks.

Reference: <https://help.mulesoft.com/s/article/DDos-Dos-at>

QUESTION 21

An organization makes a strategic decision to move towards an IT operating model that emphasizes consumption of reusable IT assets using modern APIs (as defined by MuleSoft).

What best describes each modern API in relation to this new IT operating model?

- A. Each modern API has its own software development lifecycle, which reduces the need for documentation and automation
- B. Each modern API must be treated like a product and designed for a particular target audience (for instance, mobile app developers)
- C. Each modern API must be easy to consume, so should avoid complex authentication mechanisms such as SAML or JWT D
- D. Each modern API must be REST and HTTP based

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answers:

1. Each modern API must be treated like a product and designed for a particular target audience (for instance mobile app developers) ***** Bottom of Form Top of Form

**QUESTION 22**

What API policy would be LEAST LIKELY used when designing an Experience API that is intended to work with a consumer mobile phone or tablet application?

- A. OAuth 2.0 access token enforcement
- B. Client ID enforcement
- C. JSON threat protection
- D. IPwhitelist

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: IP whitelist

Explanation:

>> OAuth 2.0 access token and Client ID enforcement policies are VERY common to apply on Experience APIs as API consumers need to register and access the APIs using one of these mechanisms

>> JSON threat protection is also VERY common policy to apply on Experience APIs to prevent bad or suspicious payloads hitting the API implementations.

>> IP whitelisting policy is usually very common in Process and System APIs to only whitelist the IP range inside the local VPC. But also applied occasionally on some experience APIs where the End User/ API Consumers are FIXED.

>> When we know the API consumers upfront who are going to access certain Experience APIs, then we can request for static IPs from such consumers and whitelist them to prevent anyone else hitting the API.

However, the experience API given in the question/ scenario is intended to work with a consumer mobile phone or tablet application. Which means, there is no way we can know all possible IPs that are to be whitelisted as mobile phones and tablets can so many in number and any device in the city/state/country/globe.

So, It is very LEAST LIKELY to apply IP Whitelisting on such Experience APIs whose consumers are typically Mobile Phones or Tablets.

QUESTION 23

A new upstream API is being designed to offer an SLA of 500 ms median and 800 ms maximum (99th percentile) response time. The corresponding API implementation needs to sequentially invoke 3 downstream APIs of very similar complexity.

The first of these downstream APIs offers the following SLA for its response time: median: 100 ms, 80th percentile: 500 ms, 95th percentile: 1000 ms.

If possible, how can a timeout be set in the upstream API for the invocation of the first downstream API to meet the new upstream API's desired SLA?

A. Set a timeout of 50 ms; this times out more invocations of that API but gives additional room for retries

B. Set a timeout of 100 ms; that leaves 400 ms for the other two downstream APIs to complete

C. No timeout is possible to meet the upstream API's desired SLA; a different SLA must be negotiated with the first downstream API or invoke an alternative API

D. Do not set a timeout; the invocation of this API is mandatory and so we must wait until it responds

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: Set a timeout of 100ms; that leaves 400ms for other two

Explanation:downstream APIs to complete

Key details to take from the given scenario:

>> Upstream API's designed SLA is 500ms (median). Lets ignore maximum SLA response times.

>> This API calls 3 downstream APIs sequentially and all these are of similar complexity.

>> The first downstream API is offering median SLA of 100ms, 80th percentile: 500ms; 95th percentile: 1000ms.

Based on the above details:

>> We can rule out the option which is suggesting to set 50ms timeout. Because, if the median SLA itself being offered is 100ms then most of the calls are going to timeout and time gets wasted in retried them and eventually gets exhausted with all retries. Even if some retries gets successful, the remaining time won't leave enough room for 2nd and 3rd downstream APIs to respond within time.

>> The option suggesting to NOT set a timeout as the invocation of this API is mandatory and so we must wait until it responds is silly. As not setting time out would go against the good implementation pattern and moreover if the first API is not responding within its offered median SLA 100ms then most probably it would either respond in 500ms (80th percentile) or 1000ms (95th percentile). In BOTH cases, getting a successful response from 1st downstream API does NO GOOD because already by this time the Upstream API SLA of 500 ms is breached. There is no time left to call 2nd and 3rd downstream APIs.

>> It is NOT true that no timeout is possible to meet the upstream APIs desired SLA.

As 1st downstream API is offering its median SLA of 100ms, it means MOST of the time we would get the responses within that time. So, setting a timeout of 100ms would be ideal for MOST calls as it leaves enough room of 400ms for remaining 2 downstream API calls.

QUESTION 24

What is true about automating interactions with Anypoint Platform using tools such as Anypoint Platform REST APIs, Anypoint CU, or the Mule Maven plugin?

A. Access to Anypoint Platform APIs and Anypoint CU can be controlled separately through the roles and permissions in Anypoint Platform, so that specific users can get access to Anypoint CLI while others get access to the platform APIs

B. Anypoint Platform APIs can ONLY automate interactions with CloudHub, while the Mule Maven plugin is required for deployment to customer-hosted Mule runtimes

C. By default, the Anypoint CLI and Mule Maven plugin are NOT included in the Mule runtime, so are NOT available to be used by deployed Mule applications

D. API policies can be applied to the Anypoint Platform APIs so that ONLY certain LOBs have access to specific functions

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: By default, the Anypoint CLI and Mule Maven plugin are NOT

Explanation:included in the Mule runtime, so are NOT available to be used by deployed Mule applications *****

>> We CANNOT apply API policies to the Anypoint Platform APIs like we can do on our custom written API instances. So, option suggesting this is FALSE.

>> Anypoint Platform APIs can be used for automating interactions with both CloudHub and customer-hosted Mule runtimes. Not JUST the CloudHub. So, option opposing this is FALSE.

>> Mule Maven plugin is NOT mandatory for deployment to customer-hosted Mule runtimes. It just helps your CI/CD to have smoother automation. But not a compulsory requirement to deploy. So, option opposing this is FALSE.

>> We DO NOT have any such special roles and permissions on the platform to separately control access for some users to have Anypoint CLI and others to have Anypoint Platform APIs. With proper general roles/permissions (API Owner, Cloudhub Admin etc.), one can use any of the options

(Anypoint CLI or Platform APIs). So, option suggesting this is FALSE.

Only TRUE statement given in the choices is that - Anypoint CLI and Mule Maven plugin are NOT included in the Mule runtime, so are NOT available to be used by deployed Mule applications.

Maven is part of Studio or you can use other Maven installation for development.

CLI is convenience only. It is one of many ways how to install app to the runtime.

These are definitely NOT part of anything except your process of deployment or automation.

QUESTION 25

What Mule application deployment scenario requires using Anypoint Platform Private Cloud Edition or Anypoint Platform for Pivotal Cloud Foundry?

- A. When it is required to make ALL applications highly available across multiple data centers
- B. When it is required that ALL APIs are private and NOT exposed to the public cloud
- C. When regulatory requirements mandate on-premises processing of EVERY data item, including meta-data
- D. When ALL backend systems in the application network are deployed in the organization's intranet

Correct Answer: C

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: When regulatory requirements mandate on-premises processing of

Explanation:EVERY data item, including meta-data.

We need NOT require to use Anypoint Platform PCE or PCF for the below. So these options are OUT.

>> We can make ALL applications highly available across multiple data centers using CloudHub too.

>> We can use Anypoint VPN and tunneling from CloudHub to connect to ALL backend systems in the application network that are deployed in the organization's intranet.

>> We can use Anypoint VPC and Firewall Rules to make ALL APIs private and NOT exposed to the public cloud.

Only valid reason in the given options that requires to use Anypoint Platform PCE/ PCF is - When regulatory requirements mandate on-premises processing of EVERY data item, including meta-data.

QUESTION 26

What is typically NOT a function of the APIs created within the framework called API-led connectivity?

- A. They provide an additional layer of resilience on top of the underlying backend system, thereby insulating clients from extended failure of these systems.
- B. They allow for innovation at the user Interface level by consuming the underlying assets without being aware of how data is being extracted from backend systems.
- C. They reduce the dependency on the underlying backend systems by helping unlock data from backend systems in a reusable and consumable way.
- D. They can compose data from various sources and combine them with orchestration logic to create higher level value.

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: They provide an additional layer of resilience on top of the

Explanation:underlying backend system, thereby insulating clients from extended failure of these systems.

In API-led connectivity,

>> Experience APIs - allow for innovation at the user interface level by consuming the underlying assets without being aware of how data is being extracted from backend systems.

>> Process APIs - compose data from various sources and combine them with orchestration logic to create higher level value

>> System APIs - reduce the dependency on the underlying backend systems by helping unlock data from backend systems in a reusable and consumable way.

However, they NEVER promise that they provide an additional layer of resilience on top of the underlying backend system, thereby insulating clients from extended failure of these systems.

<https://dzone.com/articles/api-led-connectivity-with-mule>

QUESTION 27

An organization has implemented a Customer Address API to retrieve customer address information.

This API has been deployed to multiple environments and has been configured to enforce client IDs everywhere.

A developer is writing a client application to allow a user to update their address. The developer has found the Customer Address API in Anypoint Exchange and wants to use it in their client application.

What step of gaining access to the API can be performed automatically by Anypoint Platform?

- A. Approve the client application request for the chosen SLA tier
- B. Request access to the appropriate API Instances deployed to multiple environments using the client application's credentials
- C. Modify the client application to call the API using the client application's credentials
- D. Create a new application in Anypoint Exchange for requesting access to the API

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: Approve the client application request for the chosen SLA tier

Explanation:

>> Only approving the client application request for the chosen SLA tier can be automated

>> Rest of the provided options are not valid

Reference: <https://docs.mulesoft.com/api-manager/2.x/defining-sla-tiers#defining-a-tier>

QUESTION 28

What is a typical result of using a fine-grained rather than a coarse-grained API deployment model to implement a given business process?

- A. A decrease in the number of connections within the application network supporting the business process
- B. A higher number of discoverable API-related assets in the application network
- C. A better response time for the end user as a result of the APIs being smaller in scope and complexity
- D. An overall tower usage of resources because each fine-grained API consumes less resources

Correct Answer: B

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: A higher number of discoverable API-related assets in the

Explanation:application network.

>> We do NOT get faster response times in fine-grained approach when compared to coarse-grained approach.

>> In fact, we get faster response times from a network having coarse-grained APIs compared to a network having fine-grained APIs model. The reasons are below.

Fine-grained approach:

1. will have more APIs compared to coarse-grained
2. So, more orchestration needs to be done to achieve a functionality in business process.
3. Which means, lots of API calls to be made. So, more connections will needs to be established. So, obviously more hops, more network i/o, more number of integration points compared to coarsegrained approach where fewer APIs with bulk functionality embedded in them.
4. That is why, because of all these extra hops and added latencies, fine-grained approach will have bit more response times compared to coarse-grained.
5. Not only added latencies and connections, there will be more resources used up in fine-grained approach due to more number of APIs.

That's why, fine-grained APIs are good in a way to expose more number of resuable assets in your network and make them discoverable. However, needs more maintenance, taking care of integration points, connections, resources with a little compromise w.r.t network hops and response times.

QUESTION 29

What correctly characterizes unit tests of Mule applications?

- A. They test the validity of input and output of source and target systems
- B. They must be run in a unit testing environment with dedicated Mule runtimes for the environment

- C. They must be triggered by an external client tool or event source
 D. They are typically written using MUnit to run in an embedded Mule runtime that does not require external connectivity

Correct Answer: D

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: They are typically written using MUnit to run in an embedded Mule

Explanation:runtime that does not require external connectivity.

Below TWO are characteristics of Integration Tests but NOT unit tests:

>> They test the validity of input and output of source and target systems.

>> They must be triggered by an external client tool or event source.

It is NOT TRUE that Unit Tests must be run in a unit testing environment with dedicated Mule runtimes for the environment.

MuleSoft offers MUnit for writing Unit Tests and they run in an embedded Mule Runtime without needing any separate/ dedicated Runtimes to execute them. They also do NOT need any external connectivity as MUnit supports mocking via stubs.

<https://dzone.com/articles/munit-framework>

QUESTION 30

An organization is deploying their new implementation of the OrderStatus System API to multiple workers in CloudHub. This API fronts the organization's on-premises Order Management System, which is accessed by the API implementation over an IPsec tunnel.

What type of error typically does NOT result in a service outage of the OrderStatus System API?

- A. A CloudHub worker fails with an out-of-memory exception
 B. API Manager has an extended outage during the initial deployment of the API implementation
 C. The AWS region goes offline with a major network failure to the relevant AWS data centers
 D. The Order Management System is Inaccessible due to a network outage in the organization's onpremises data center

Correct Answer: A

Section: (none)

Explanation

Explanation/Reference:

Explanation:

Correct Answer: A CloudHub worker fails with an out-of-memory exception.

Explanation:

>> An AWS Region itself going down will definitely result in an outage as it does not matter how many workers are assigned to the Mule App as all of those in that region will go down. This is a complete downtime and outage.

>> Extended outage of API manager during initial deployment of API implementation will of course cause issues in proper application startup itself as the API Autodiscovery might fail or API policy templates and policies may not be downloaded to embed at the time of applicaiton startup etc... there are many reasons that could cause issues.

>> A network outage onpremises would of course cause the Order Management System not accessible and it does not matter how many workers are assigned to the app they all will fail and cause outage for sure.

The only option that does NOT result in a service outage is if a cloudhub worker fails with an out-ofmemory exception. Even if a worker fails and goes down, there are still other workers to handle the requests and keep the API UP and Running. So, this is the right answer.