MuleSoft

Exam Questions MCPA-Level-1-Maintenance

MuleSoft Certified Platform Architect - Level 1 MAINTENANCE

NEW QUESTION 1
A company wants to move its Mule API implementations into production as quickly as possible. To protect access to all Mule application data and metadata, the company requires that all Mule applications be deployed to the company's customer-hosted infrastructure within the corporate firewall. What combination of runtime plane and control plane options meets these project lifecycle goals?

A. Manually provisioned customer-hosted runtime plane and customer-hosted control plane
B. MuleSoft-hosted runtime plane and customer-hosted control plane
C. Manually provisioned customer-hosted runtime plane and MuleSoft-hosted control plane
D. iPaaS provisioned customer-hosted runtime plane and MuleSoft-hosted control plane

Answer: A

Explanation:
Correct Answer::
Manually provisioned customer-hosted runtime plane and customer-hosted control plane
****
There are two key factors that are to be taken into consideration from the scenario given in the question.
>> Company requires both data and metadata to be resided within the corporate firewall
>> Company would like to go with customer-hosted infrastructure.
Any deployment model that is to deal with the cloud directly or indirectly (Mulesoft-hosted or Customer's own cloud like Azure, AWS) will have to share atleast the metadata.
Application data can be controlled inside firewall by having Mule Runtimes on customer hosted runtime plane. But if we go with Mulsoft-hosted/ Cloud-based control plane, the control plane required atleast some minimum level of metadata to be sent outside the corporate firewall.
As the customer requirement is pretty clear about the data and metadata both to be within the corporate firewall, even though customer wants to move to production as quickly as possible, unfortunately due to the nature of their security requirements, they have no other option but to go with manually provisioned customer-hosted runtime plane and customer-hosted control plane.

NEW QUESTION 2
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

Answer: D

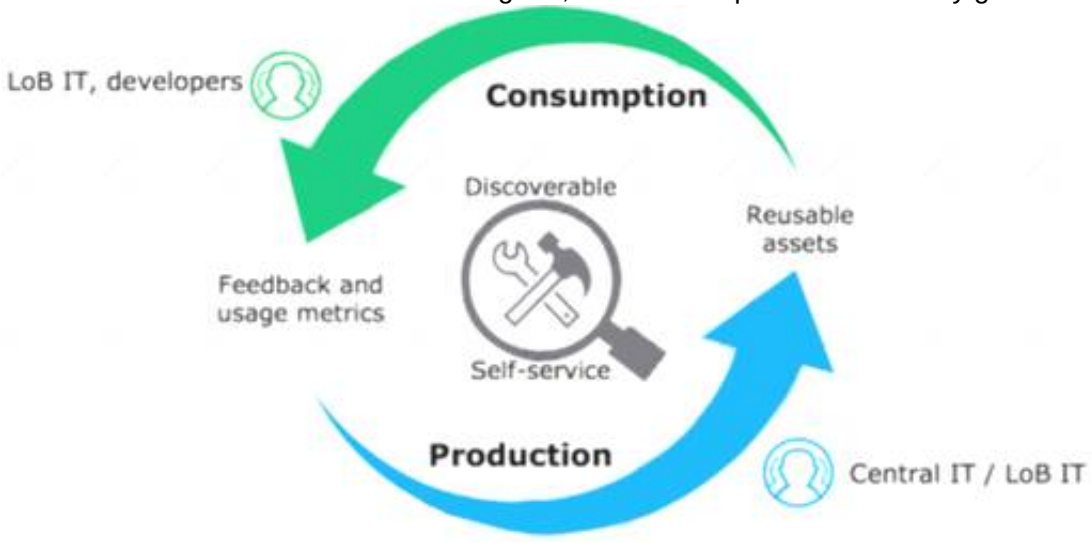
Explanation:
Correct Answer:: They are typically written using MUnit to run in an embedded Mule runtime that does not require external connectivity.
****
Below TWO are characteristics of Integration Tests but NOT unit tests:
>> They test the validity of input and output of source and target systems.
>> 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

NEW QUESTION 3
Which of the below, when used together, makes the IT Operational Model effective?

A. Create reusable assets, Do marketing on the created assets across organization, Arrange time to time LOB reviews to ensure assets are being consumed or not
B. Create reusable assets, Make them discoverable so that LOB teams can self-serve and browse the APIs, Get active feedback and usage metrics
C. Create resuable assets, make them discoverable so that LOB teams can self-serve and browse the APIs

Answer: C

Explanation:
Correct Answer:: Create reusable assets, Make them discoverable so that LOB teams can self-serve and browse the APIs, Get active feedback and usage metrics.
********** Diagram, arrow Description automatically generated



NEW QUESTION 4
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

Answer: B

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

NEW QUESTION 5
A company has created a successful enterprise data model (EDM). The company is committed to building an application network by adopting modern APIs as a core enabler of the company's IT operating model. At what API tiers (experience, process, system) should the company require reusing the EDM when designing modern API data models?

A. At the experience and process tiers
B. At the experience and system tiers
C. At the process and system tiers
D. At the experience, process, and system tiers

Answer: C

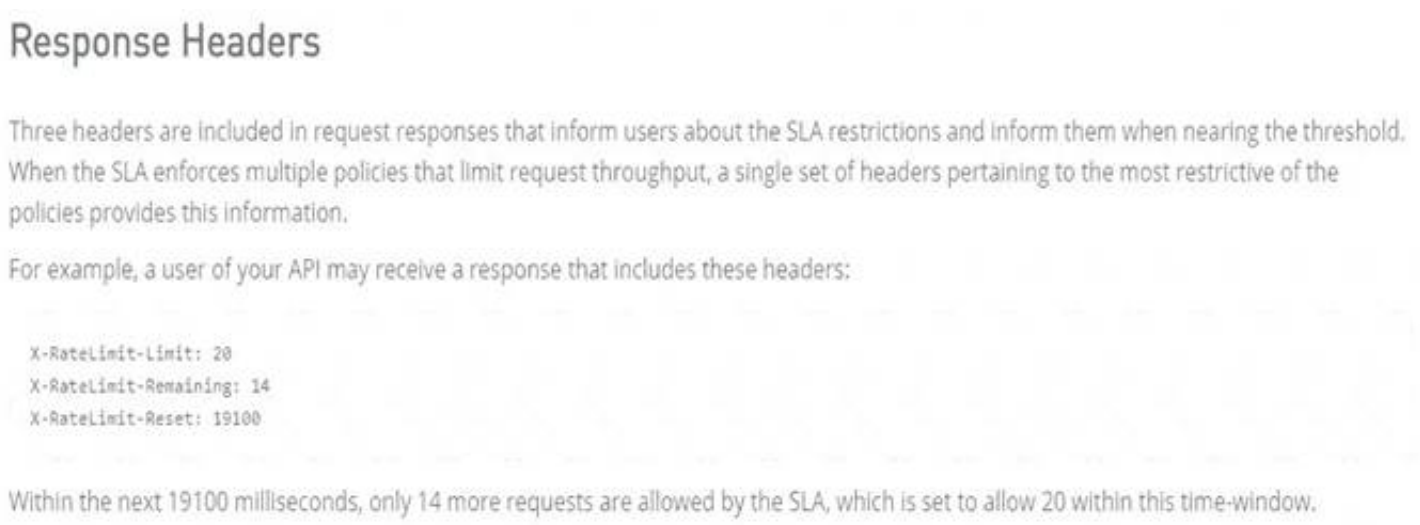
Explanation:
Correct Answer:: At the process and system tiers
****
>> Experience Layer APIs are modeled and designed exclusively for the end user's experience. So, the data models of experience layer vary based on the nature and type of such API consumer. For example, Mobile consumers will need light-weight data models to transfer with ease on the wire, where as web-based consumers will need detailed data models to render most of the info on web pages, so on. So, enterprise data models fit for the purpose of canonical models but not of good use for experience APIs.
>> That is why, EDMs should be used extensively in process and system tiers but NOT in experience tier.

NEW QUESTION 6
Skipped
An API implementation returns three X-RateLimit-* HTTP response headers to a requesting API client. What type of information do these response headers indicate to the API client?

A. The error codes that result from throttling
B. A correlation ID that should be sent in the next request
C. The HTTP response size
D. The remaining capacity allowed by the API implementation

Answer: D

Explanation:
Correct Answer:: The remaining capacity allowed by the API implementation.
****
>> Reference:
https://docs.mulesoft.com/api-manager/2.x/rate-limiting-and-throttling-sla-based-policies#response-headers



Response Headers

Three headers are included in request responses that inform users about the SLA restrictions and inform them when nearing the threshold. When the SLA enforces multiple policies that limit request throughput, a single set of headers pertaining to the most restrictive of the policies provides this information.

For example, a user of your API may receive a response that includes these headers:

```
X-RateLimit-Limit: 20
X-RateLimit-Remaining: 14
X-RateLimit-Reset: 19100
```

Within the next 19100 milliseconds, only 14 more requests are allowed by the SLA, which is set to allow 20 within this time-window.

NEW QUESTION 7
An API has been updated in Anypoint exchange by its API producer from version 3.1.1 to 3.2.0 following accepted semantic versioning practices and the changes have been communicated via the APIs public portal. The API endpoint does NOT change in the new version. How should the developer of an API client respond to this change?

A. The API producer should be requested to run the old version in parallel with the new one
B. The API producer should be contacted to understand the change to existing functionality
C. The API client code only needs to be changed if it needs to take advantage of the new features
D. The API clients need to update the code on their side and need to do full regression

Answer: C

NEW QUESTION 8
An API has been updated in Anypoint Exchange by its API producer from version 3.1.1 to 3.2.0 following accepted semantic versioning practices and the changes have been communicated via the API's public portal.
The API endpoint does NOT change in the new version.
How should the developer of an API client respond to this change?

A. The update should be identified as a project risk and full regression testing of the functionality that uses this API should be run
B. The API producer should be contacted to understand the change to existing functionality
C. The API producer should be requested to run the old version in parallel with the new one
D. The API client code ONLY needs to be changed if it needs to take advantage of new features

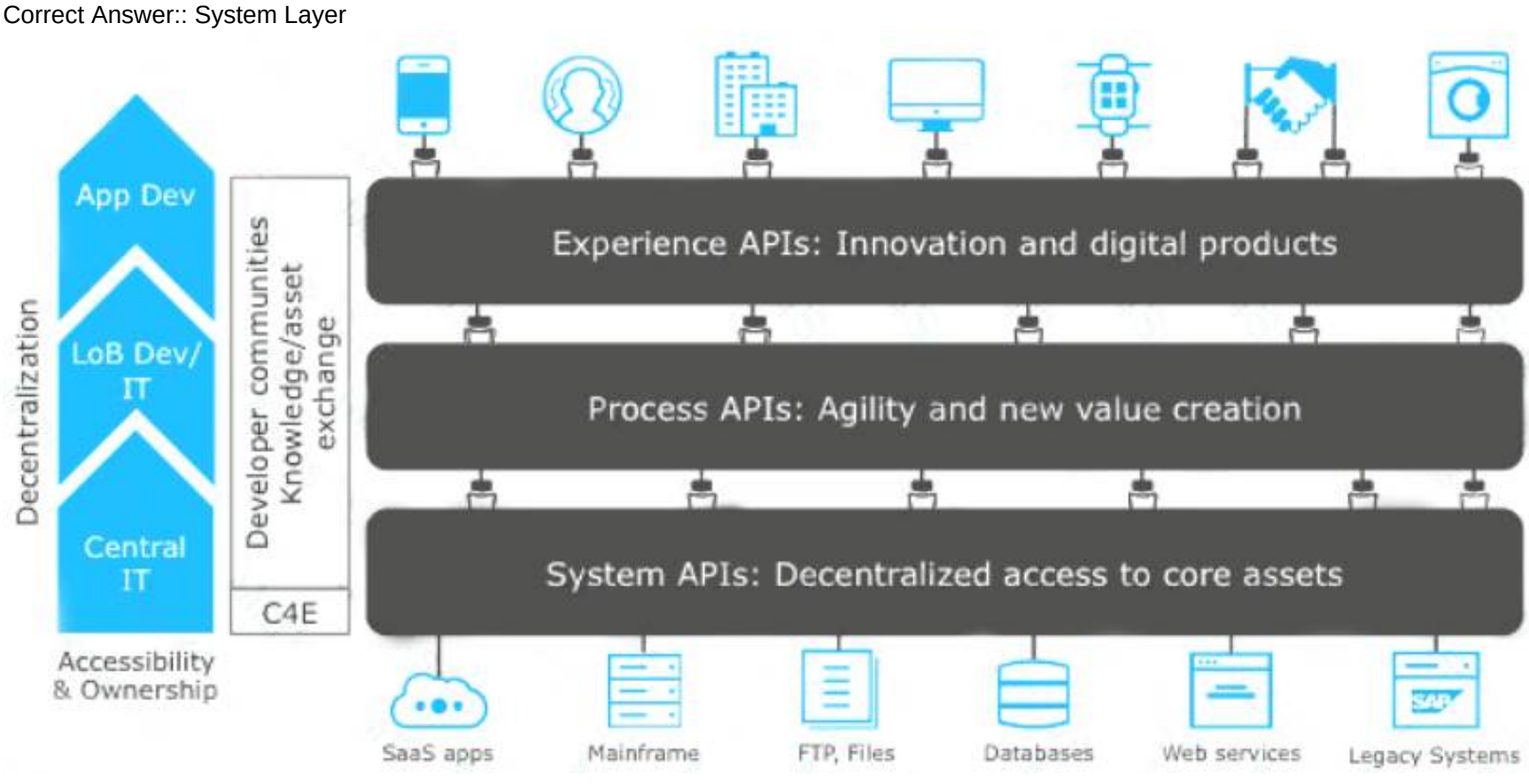
Answer: D

NEW QUESTION 9
Which layer in the API-led connectivity focuses on unlocking key systems, legacy systems, data sources etc and exposes the functionality?

A. Experience Layer
B. Process Layer
C. System Layer

Answer: C

Explanation:
Correct Answer:: System Layer



The APIs used in an API-led approach to connectivity fall into three categories:
System APIs – these usually access the core systems of record and provide a means of insulating the user from the complexity or any changes to the underlying

systems. Once built, many users, can access data without any need to learn the underlying systems and can reuse these APIs in multiple projects.
Process APIs – These APIs interact with and shape data within a single system or across systems (breaking down data silos) and are created here without a dependence on the source systems from which that data originates, as well as the target channels through which that data is delivered.
Experience APIs – Experience APIs are the means by which data can be reconfigured so that it is most easily consumed by its intended audience, all from a common data source, rather than setting up separate
point-to-point integrations for each channel. An Experience API is usually created with API-first design principles where the API is designed for the specific user experience in mind.

NEW QUESTION 10
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

Answer: B

Explanation:

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

NEW QUESTION 11
An organization has created an API-led architecture that uses various API layers to integrate mobile clients with a backend system. The backend system consists of a number of specialized components and can be accessed via a REST API. The process and experience APIs share the same bounded-context model that is different from the backend data model. What additional canonical models, bounded-context models, or anti-corruption layers are best added to this architecture to help process data consumed from the backend system?

A. Create a bounded-context model for every layer and overlap them when the boundary contexts overlap, letting API developers know about the differences between upstream and downstream data models
B. Create a canonical model that combines the backend and API-led models to simplify and unify data models, and minimize data transformations.
C. Create a bounded-context model for the system layer to closely match the backend data model, and add an anti-corruption layer to let the different bounded contexts cooperate across the system and process layers
D. Create an anti-corruption layer for every API to perform transformation for every data model to match each other, and let data simply travel between APIs to avoid the complexity and overhead of building canonical models

Answer: C

Explanation:

Correct Answer:: Create a bounded-context model for the system layer to closely match the backend data model, and add an anti-corruption layer to let the different bounded contexts cooperate across the system and process layers
****
>> Canonical models are not an option here as the organization has already put in efforts and created bounded-context models for Experience and Process APIs.
>> Anti-corruption layers for ALL APIs is unnecessary and invalid because it is mentioned that experience and process APIs share same bounded-context model. It is just the System layer APIs that need to choose their approach now.
>> So, having an anti-corruption layer just between the process and system layers will work well. Also to speed up the approach, system APIs can mimic the backend system data model.

NEW QUESTION 12
An organization wants to make sure only known partners can invoke the organization's APIs. To achieve this security goal, the organization wants to enforce a Client ID Enforcement policy in API Manager so that only registered partner applications can invoke the organization's APIs. In what type of API implementation does MuleSoft recommend adding an API proxy to enforce the Client ID Enforcement policy, rather than embedding the policy directly in the application's JVM?

A. A Mule 3 application using APIkit
B. A Mule 3 or Mule 4 application modified with custom Java code
C. A Mule 4 application with an API specification
D. A Non-Mule application

Answer: D

Explanation:
Correct Answer:: A Non-Mule application
****
>> All type of Mule applications (Mule 3/ Mule 4/ with APIkit/ with Custom Java Code etc) running on Mule Runtimes support the Embedded Policy Enforcement on them.
>> The only option that cannot have or does not support embedded policy enforcement and must have API Proxy is for Non-Mule Applications.

So, Non-Mule application is the right answer.

NEW QUESTION 13
An Order API must be designed that contains significant amounts of integration logic and involves the invocation of the Product API.
The power relationship between Order API and Product API is one of "Customer/Supplier", because the Product API is used heavily throughout the organization and is developed by a dedicated development team located in the office of the CTO.
What strategy should be used to deal with the API data model of the Product API within the Order API?

A. Convince the development team of the Product API to adopt the API data model of the Order API such that the integration logic of the Order API can work with one consistent internal data model
B. Work with the API data types of the Product API directly when implementing the integration logic of the Order API such that the Order API uses the same (unchanged) data types as the Product API
C. Implement an anti-corruption layer in the Order API that transforms the Product API data model into internal data types of the Order API
D. Start an organization-wide data modeling initiative that will result in an Enterprise Data Model that will then be used in both the Product API and the Order API

Answer: C

Explanation:
Correct Answer:: Convince the development team of the product API to adopt the API data model of the Order API such that integration logic of the Order API can work with one consistent internal data model
********** Key details to note from the given scenario:
>> Power relationship between Order API and Product API is customer/supplier
So, as per below rules of "Power Relationships", the caller (in this case Order API) would request for features to the called (Product API team) and the Product API team would need to accomodate those requests.

NEW QUESTION 14
Say, there is a legacy CRM system called CRM-Z which is offering below functions:
* 1. Customer creation
* 2. Amend details of an existing customer
* 3. Retrieve details of a customer
* 4. Suspend a customer

A. Implement a system API named customerManagement which has all the functionalities wrapped in it as various operations/resources
B. Implement different system APIs named createCustomer, amendCustomer, retrieveCustomer and suspendCustomer as they are modular and has seperation of concerns
C. Implement different system APIs named createCustomerInCRMZ, amendCustomerInCRMZ, retrieveCustomerFromCRMZ and suspendCustomerInCRMZ as they are modular and has seperation of concerns

Answer: B

Explanation:
Correct Answer:: Implement different system APIs named createCustomer, amendCustomer, retrieveCustomer and suspendCustomer as they are modular and has seperation of concerns
****
>> It is quite normal to have a single API and different Verb + Resource combinations. However, this fits well for an Experience API or a Process API but not a best architecture style for System APIs. So, option with just one customerManagement API is not the best choice here.
>> The option with APIs in createCustomerInCRMZ format is next close choice w.r.t modularization and less maintenance but the naming of APIs is directly coupled with the legacy system. A better foreseen approach would be to name your APIs by abstracting the backend system names as it allows seamless replacement/migration of any backend system anytime. So, this is not the correct choice too.
>> createCustomer, amendCustomer, retrieveCustomer and suspendCustomer is the right approach and is the best fit compared to other options as they are both modular and same time got the names decoupled from backend system and it has covered all requirements a System API needs.

NEW QUESTION 15
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?

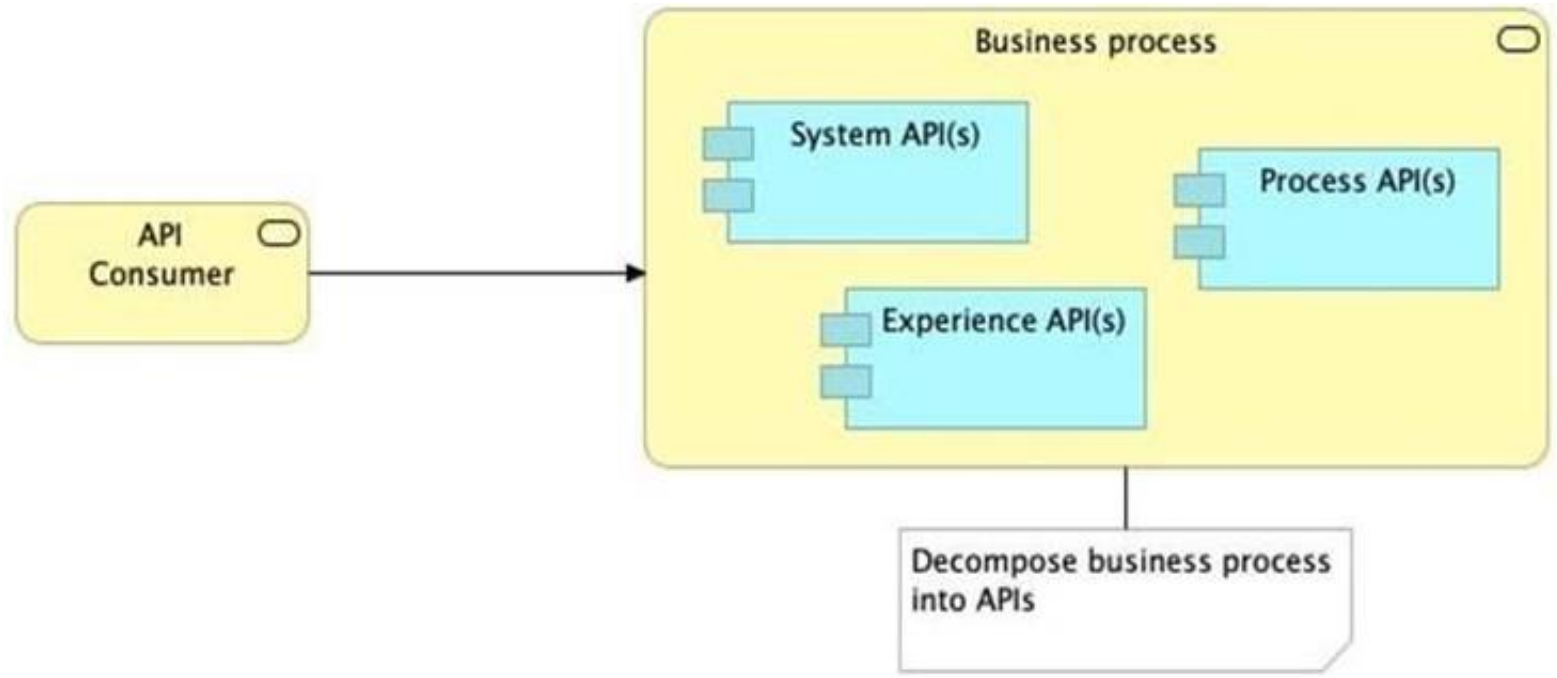
A. When the API is invoked by an unrecognized API client
B. When a particular API client invokes the API too often within a given time period
C. When the response time of API invocations exceeds a threshold
D. When the API receives a very high number of API invocations

Answer: C

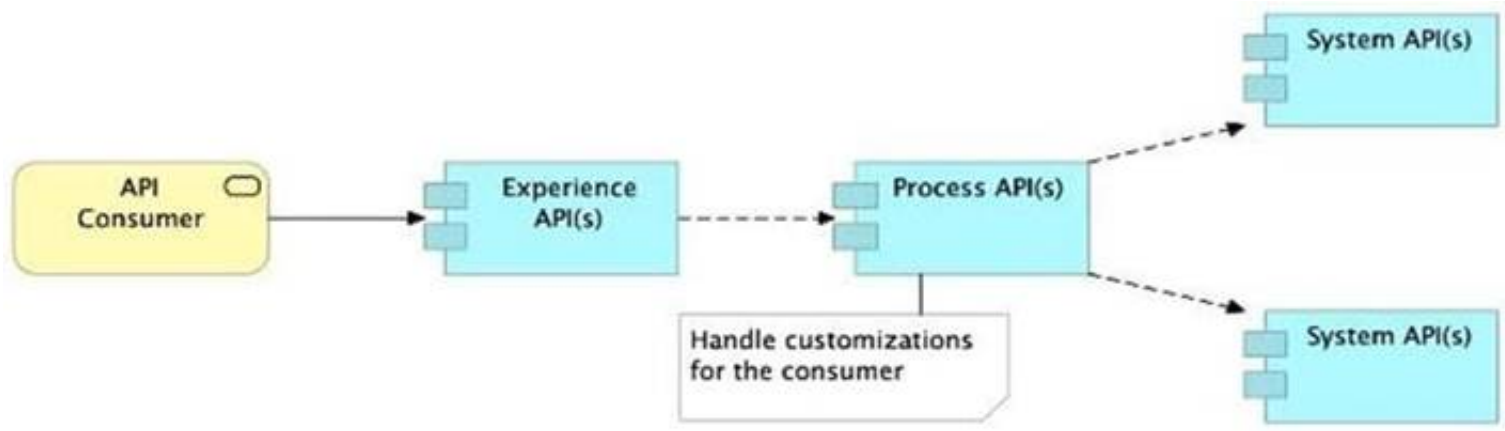
Explanation:

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

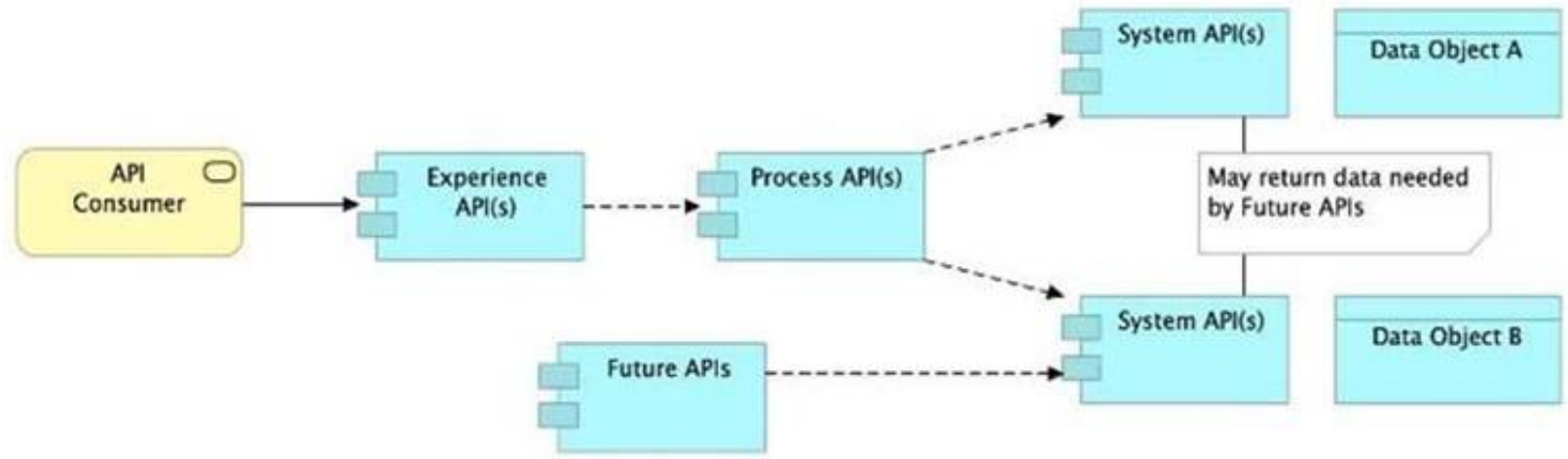
NEW QUESTION 16
Refer to the exhibit.



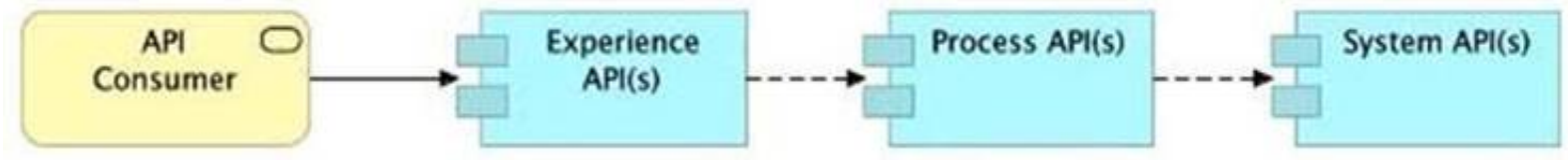
What is the best way to decompose one end-to-end business process into a collaboration of Experience, Process, and System APIs?
A) Handle customizations for the end-user application at the Process API level rather than the Experience API level



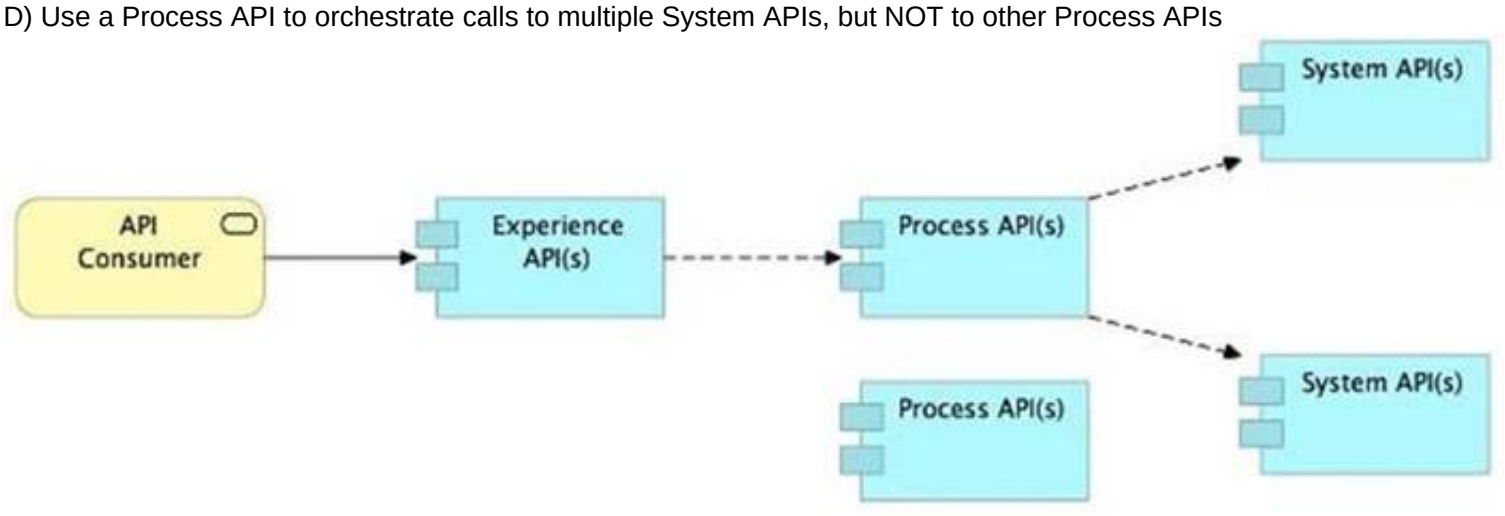
B) Allow System APIs to return data that is NOT currently required by the identified Process or Experience APIs



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



A. Option A
B. Option B
C. Option C
D. Option D

Answer: B

Explanation:

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

NEW QUESTION 17
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