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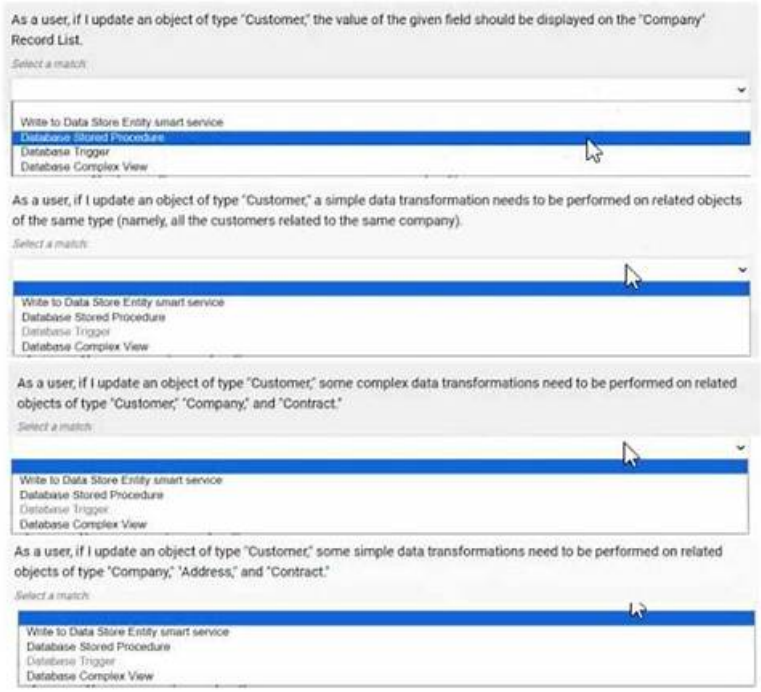

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Appian ACD301 Exam Syllabus Topics:

Topic	Details
Topic 1	• Data Management: This section of the exam measures skills of Data Architects and covers analyzing, designing, and securing data models. Candidates must demonstrate an understanding of how to use Appian's data fabric and manage data migrations. The focus is on ensuring performance in high-volume data environments, solving data-related issues, and implementing advanced database features effectively.

Topic 2	• Proactively Design for Scalability and Performance: This section of the exam measures skills of Application Performance Engineers and covers building scalable applications and optimizing Appian components for performance. It includes planning load testing, diagnosing performance issues at the application level, and designing systems that can grow efficiently without sacrificing reliability.
Topic 3	• Project and Resource Management: This section of the exam measures skills of Agile Project Leads and covers interpreting business requirements, recommending design options, and leading Agile teams through technical delivery. It also involves governance, and process standardization.

Appian Lead Developer Sample Questions (Q21-Q26):

NEW QUESTION # 21
You need to design a complex Appian integration to call a RESTful API. The RESTful API will be used to update a case in a customer's legacy system.
What are three prerequisites for designing the integration?

- A. Understand the content of the expected body, including each field type and their limits.
- B. Understand the different error codes managed by the API and the process of error handling in Appian.
- C. Understand the business rules to be applied to ensure the business logic of the data.
- D. Define the HTTP method that the integration will use.
- E. Understand whether this integration will be used in an interface or in a process model.

Answer: A,B,D

Explanation:
Comprehensive and Detailed In-Depth Explanation:
As an Appian Lead Developer, designing a complex integration to a RESTful API for updating a case in a legacy system requires a structured approach to ensure reliability, performance, and alignment with business needs. The integration involves sending a JSON payload (implied by the context) and handling responses, so the focus is on technical and functional prerequisites. Let's evaluate each option:
A . Define the HTTP method that the integration will use:
This is a primary prerequisite. RESTful APIs use HTTP methods (e.g., POST, PUT, GET) to define the operation-here, updating a case likely requires PUT or POST. Appian's Connected System and Integration objects require specifying the method to configure the HTTP request correctly. Understanding the API's method ensures the integration aligns with its design, making this essential for design. Appian's documentation emphasizes choosing the correct HTTP method as a foundational step.
B . Understand the content of the expected body, including each field type and their limits:
This is also critical. The JSON payload for updating a case includes fields (e.g., text, dates, numbers), and the API expects a specific structure with field types (e.g., string, integer) and limits (e.g., max length, size constraints). In Appian, the Integration object requires a dictionary or CDT to construct the body, and mismatches (e.g., wrong types, exceeding limits) cause errors (e.g., 400 Bad Request). Appian's best practices mandate understanding the API schema to ensure data compatibility, making this a key prerequisite.
C . Understand whether this integration will be used in an interface or in a process model:
While knowing the context (interface vs. process model) is useful for design (e.g., synchronous vs. asynchronous calls), it's not a prerequisite for the integration itself-it's a usage consideration. Appian supports integrations in both contexts, and the integration's design (e.g., HTTP method, body) remains the same. This is secondary to technical API details, so it's not among the top three prerequisites.
D . Understand the different error codes managed by the API and the process of error handling in Appian:
This is essential. RESTful APIs return HTTP status codes (e.g., 200 OK, 400 Bad Request, 500 Internal Server Error), and the customer's API likely documents these for failure scenarios (e.g., invalid data, server issues). Appian's Integration objects can handle errors via error mappings or process models, and understanding these codes ensures robust error handling (e.g., retry logic, user notifications). Appian's documentation stresses error handling as a core design element for reliable integrations, making this a primary prerequisite.
E . Understand the business rules to be applied to ensure the business logic of the data:
While business rules (e.g., validating case data before sending) are important for the overall application, they aren't a prerequisite for designing the integration itself-they're part of the application logic (e.g., process model or interface). The integration focuses on technical interaction with the API, not business validation, which can be handled separately in Appian. This is a secondary concern, not a core design requirement for the integration.
Conclusion: The three prerequisites are A (define the HTTP method), B (understand the body content and limits), and D (understand error codes and handling). These ensure the integration is technically sound, compatible with the API, and resilient to errors-critical

for a complex RESTful API integration in Appian.
Reference:
Appian Documentation: "Designing REST Integrations" (HTTP Methods, Request Body, Error Handling).
Appian Lead Developer Certification: Integration Module (Prerequisites for Complex Integrations).
Appian Best Practices: "Building Reliable API Integrations" (Payload and Error Management).
To design a complex Appian integration to call a RESTful API, you need to have some prerequisites, such as:
Define the HTTP method that the integration will use. The HTTP method is the action that the integration will perform on the API, such as GET, POST, PUT, PATCH, or DELETE. The HTTP method determines how the data will be sent and received by the API, and what kind of response will be expected.
Understand the content of the expected body, including each field type and their limits. The body is the data that the integration will send to the API, or receive from the API, depending on the HTTP method. The body can be in different formats, such as JSON, XML, or form data. You need to understand how to structure the body according to the API specification, and what kind of data types and values are allowed for each field.
Understand the different error codes managed by the API and the process of error handling in Appian. The error codes are the status codes that indicate whether the API request was successful or not, and what kind of problem occurred if not. The error codes can range from 200 (OK) to 500 (Internal Server Error), and each code has a different meaning and implication. You need to understand how to handle different error codes in Appian, and how to display meaningful messages to the user or log them for debugging purposes.
The other two options are not prerequisites for designing the integration, but rather considerations for implementing it.
Understand whether this integration will be used in an interface or in a process model. This is not a prerequisite, but rather a decision that you need to make based on your application requirements and design. You can use an integration either in an interface or in a process model, depending on where you need to call the API and how you want to handle the response. For example, if you need to update a case in real-time based on user input, you may want to use an integration in an interface. If you need to update a case periodically based on a schedule or an event, you may want to use an integration in a process model.
Understand the business rules to be applied to ensure the business logic of the data. This is not a prerequisite, but rather a part of your application logic that you need to implement after designing the integration. You need to apply business rules to validate, transform, or enrich the data that you send or receive from the API, according to your business requirements and logic. For example, you may need to check if the case status is valid before updating it in the legacy system, or you may need to add some additional information to the case data before displaying it in Appian.

NEW QUESTION # 22
As part of your implementation workflow, users need to retrieve data stored in a third-party Oracle database on an interface. You need to design a way to query this information.
How should you set up this connection and query the data?

- A. Configure an expression-backed record type, calling an API to retrieve the data from the third-party database. Then, use a!queryRecordType to retrieve the data.
- B. Configure a timed utility process that queries data from the third-party database daily, and stores it in the Appian business database. Then use a!queryEntity using the Appian data source to retrieve the data.
- C. Configure a Query Database node within the process model. Then, type in the connection information, as well as a SQL query to execute and return the data in process variables.
- D. In the Administration Console, configure the third-party database as a "New Data Source." Then, use a queryEntity to retrieve the data.

Answer: D

Explanation:
Comprehensive and Detailed In-Depth Explanation:As an Appian Lead Developer, designing a solution to query data from a third-party Oracle database for display on an interface requires secure, efficient, and maintainable integration. The scenario focuses on real-time retrieval for users, so the design must leverage Appian's data connectivity features. Let's evaluate each option:
* A. Configure a Query Database node within the process model. Then, type in the connection information, as well as a SQL query to execute and return the data in process variables:The Query Database node (part of the Smart Services) allows direct SQL execution against a database, but it requires manual connection details (e.g., JDBC URL, credentials), which isn't scalable or secure for Production. Appian's documentation discourages using Query Database for ongoing integrations due to maintenance overhead, security risks (e.g., hardcoding credentials), and lack of governance. This is better for one-off tasks, not real-time interface queries, making it unsuitable.
* B. Configure a timed utility process that queries data from the third-party database daily, and stores it in the Appian business database. Then use a!queryEntity using the Appian data source to retrieve the data:
This approach syncs data daily into Appian's business database (e.g., via a timer event and Query Database node), then queries it with a!queryEntity. While it works for stale data, it introduces latency (up to 24 hours) for users, which doesn't meet real-time needs

on an interface. Appian's best practices recommend direct data source connections for up-to-date data, not periodic caching, unless latency is acceptable-making this inefficient here.
* C. Configure an expression-backed record type, calling an API to retrieve the data from the third-party database. Then, use a!queryRecordType to retrieve the data:Expression-backed record types use expressions (e.g., a!httpQuery()) to fetch data, but they're designed for external APIs, not direct database queries. The scenario specifies an Oracle database, not an API, so this requires building a custom REST service on the Oracle side, adding complexity and latency. Appian's documentation favors Data Sources for database queries over API calls when direct access is available, making this less optimal and over-engineered.
* D. In the Administration Console, configure the third-party database as a "New Data Source." Then, use a!queryEntity to retrieve the data:This is the best choice. In the Appian Administration Console, you can configure a JDBC Data Source for the Oracle database, providing connection details (e.g., URL, driver, credentials). This creates a secure, managed connection for querying via a!queryEntity, which is Appian's standard function for Data Store Entities. Users can then retrieve data on interfaces using expression-backed records or queries, ensuring real-time access with minimal latency. Appian's documentation recommends Data Sources for database integrations, offering scalability, security, and governance-perfect for this requirement.
Conclusion: Configuring the third-party database as a New Data Source and using a!queryEntity (D) is the recommended approach. It provides direct, real-time access to Oracle data for interface display, leveraging Appian's native data connectivity features and aligning with Lead Developer best practices for third-party database integration.
References:
* Appian Documentation: "Configuring Data Sources" (JDBC Connections and a!queryEntity).
* Appian Lead Developer Certification: Data Integration Module (Database Query Design).
* Appian Best Practices: "Retrieving External Data in Interfaces" (Data Source vs. API Approaches).

NEW QUESTION # 23
An existing integration is implemented in Appian. Its role is to send data for the main case and its related objects in a complex JSON to a REST API, to insert new information into an existing application. This integration was working well for a while. However, the customer highlighted one specific scenario where the integration failed in Production, and the API responded with a 500 Internal Error code. The project is in Post-Production Maintenance, and the customer needs your assistance. Which three steps should you take to troubleshoot the issue?

- A. Send a test case to the Production API to ensure the service is still up and running.
- B. Analyze the behavior of subsequent calls to the Production API to ensure there is no global issue, and ask the customer to analyze the API logs to understand the nature of the issue.
- C. Obtain the JSON sent to the API and validate that there is no difference between the expected JSON format and the sent one.
- D. Ensure there were no network issues when the integration was sent.
- E. Send the same payload to the test API to ensure the issue is not related to the API environment.

Answer: B,C,E

Explanation:
Comprehensive and Detailed In-Depth Explanation:
As an Appian Lead Developer in a Post-Production Maintenance phase, troubleshooting a failed integration (HTTP 500 Internal Server Error) requires a systematic approach to isolate the root cause-whether it's Appian-side, API-side, or environmental. A 500 error typically indicates an issue on the server (API) side, but the developer must confirm Appian's contribution and collaborate with the customer. The goal is to select three steps that efficiently diagnose the specific scenario while adhering to Appian's best practices.
Let's evaluate each option:
A . Send the same payload to the test API to ensure the issue is not related to the API environment:
This is a critical step. Replicating the failure by sending the exact payload (from the failed Production call) to a test API environment helps determine if the issue is environment-specific (e.g., Production-only configuration) or inherent to the payload/API logic. Appian's Integration troubleshooting guidelines recommend testing in a non-Production environment first to isolate variables. If the test API succeeds, the Production environment or API state is implicated; if it fails, the payload or API logic is suspect. This step leverages Appian's Integration object logging (e.g., request/response capture) and is a standard diagnostic practice.
B . Send a test case to the Production API to ensure the service is still up and running:
While verifying Production API availability is useful, sending an arbitrary test case risks further Production disruption during maintenance and may not replicate the specific scenario. A generic test might succeed (e.g., with simpler data), masking the issue tied to the complex JSON. Appian's Post-Production guidelines discourage unnecessary Production interactions unless replicating the exact failure is controlled and justified. This step is less precise than analyzing existing behavior (C) and is not among the top three priorities.
C . Analyze the behavior of subsequent calls to the Production API to ensure there is no global issue, and ask the customer to analyze the API logs to understand the nature of the issue:
This is essential. Reviewing subsequent Production calls (via Appian's Integration logs or monitoring tools) checks if the 500 error is

isolated or systemic (e.g., API outage). Since Appian can't access API server logs, collaborating with the customer to review their logs is critical for a 500 error, which often stems from server-side exceptions (e.g., unhandled data). Appian Lead Developer training emphasizes partnership with API owners and using Appian's Process History or Application Monitoring to correlate failures-making this a key troubleshooting step.
D . Obtain the JSON sent to the API and validate that there is no difference between the expected JSON format and the sent one:
This is a foundational step. The complex JSON payload is central to the integration, and a 500 error could result from malformed data (e.g., missing fields, invalid types) that the API can't process. In Appian, you can retrieve the sent JSON from the Integration object's execution logs (if enabled) or Process Instance details. Comparing it against the API's documented schema (e.g., via Postman or API specs) ensures Appian's output aligns with expectations. Appian's documentation stresses validating payloads as a first-line check for integration failures, especially in specific scenarios.
E . Ensure there were no network issues when the integration was sent:
While network issues (e.g., timeouts, DNS failures) can cause integration errors, a 500 Internal Server Error indicates the request reached the API and triggered a server-side failure-not a network issue (which typically yields 503 or timeout errors). Appian's Connected System logs can confirm HTTP status codes, and network checks (e.g., via IT teams) are secondary unless connectivity is suspected. This step is less relevant to the 500 error and lower priority than A, C, and D.
Conclusion: The three best steps are A (test API with same payload), C (analyze subsequent calls and customer logs), and D (validate JSON payload). These steps systematically isolate the issue-testing Appian's output (D), ruling out environment-specific problems (A), and leveraging customer insights into the API failure (C). This aligns with Appian's Post-Production Maintenance strategies: replicate safely, analyze logs, and validate data.
Reference:
Appian Documentation: "Troubleshooting Integrations" (Integration Object Logging and Debugging).
Appian Lead Developer Certification: Integration Module (Post-Production Troubleshooting).
Appian Best Practices: "Handling REST API Errors in Appian" (500 Error Diagnostics).

NEW QUESTION # 24
You are required to create an integration from your Appian Cloud instance to an application hosted within a customer's self-managed environment.
The customer's IT team has provided you with a REST API endpoint to test with: https://internal.network/api/api/ping.
Which recommendation should you make to progress this integration?

- A. Add Appian Cloud's IP address ranges to the customer network's allowed IP listing.
- B. Set up a VPN tunnel.
- C. Deploy the API/service into Appian Cloud.
- D. Expose the API as a SOAP-based web service.

Answer: B

Explanation:
Comprehensive and Detailed In-Depth Explanation:
As an Appian Lead Developer, integrating an Appian Cloud instance with a customer's self-managed (on-premises) environment requires addressing network connectivity, security, and Appian's cloud architecture constraints. The provided endpoint (https://internal.network/api/api/ping) is a REST API on an internal network, inaccessible directly from Appian Cloud due to firewall restrictions and lack of public exposure. Let's evaluate each option:
A . Expose the API as a SOAP-based web service:
Converting the REST API to SOAP isn't a practical recommendation. The customer has provided a REST endpoint, and Appian fully supports REST integrations via Connected Systems and Integration objects. Changing the API to SOAP adds unnecessary complexity, development effort, and risks for the customer, with no benefit to Appian's integration capabilities. Appian's documentation emphasizes using the API's native format (REST here), making this irrelevant.
B . Deploy the API/service into Appian Cloud:
Deploying the customer's API into Appian Cloud is infeasible. Appian Cloud is a managed PaaS environment, not designed to host customer applications or APIs. The API resides in the customer's self-managed environment, and moving it would require significant architectural changes, violating security and operational boundaries. Appian's integration strategy focuses on connecting to external systems, not hosting them, ruling this out.
C . Add Appian Cloud's IP address ranges to the customer network's allowed IP listing:
This approach involves whitelisting Appian Cloud's IP ranges (available in Appian documentation) in the customer's firewall to allow direct HTTP/HTTPS requests. However, Appian Cloud's IPs are dynamic and shared across tenants, making this unreliable for long-term integrations-changes in IP ranges could break connectivity. Appian's best practices discourage relying on IP whitelisting for cloud-to-on-premises integrations due to this limitation, favoring secure tunnels instead.
D . Set up a VPN tunnel:
This is the correct recommendation. A Virtual Private Network (VPN) tunnel establishes a secure, encrypted connection between

Appian Cloud and the customer's self-managed network, allowing Appian to access the internal REST API (https://internal.network/api/api/ping). Appian supports VPNs for cloud-to-on-premises integrations, and this approach ensures reliability, security, and compliance with network policies. The customer's IT team can configure the VPN, and Appian's documentation recommends this for such scenarios, especially when dealing with internal endpoints.
Conclusion: Setting up a VPN tunnel (D) is the best recommendation. It enables secure, reliable connectivity from Appian Cloud to the customer's internal API, aligning with Appian's integration best practices for cloud-to-on-premises scenarios.
Reference:
Appian Documentation: "Integrating Appian Cloud with On-Premises Systems" (VPN and Network Configuration).
Appian Lead Developer Certification: Integration Module (Cloud-to-On-Premises Connectivity).
Appian Best Practices: "Securing Integrations with Legacy Systems" (VPN Recommendations).

NEW QUESTION # 25
A customer wants to integrate a CSV file once a day into their Appian application, sent every night at 1:00 AM. The file contains hundreds of thousands of items to be used daily by users as soon as their workday starts at 8:00 AM. Considering the high volume of data to manipulate and the nature of the operation, what is the best technical option to process the requirement?

- A. Process what can be completed easily in a process model after each integration, and complete the most complex tasks using a set of stored procedures.
- B. Create a set of stored procedures to handle the volume and the complexity of the expectations, and call it after each integration.
- C. Use an Appian Process Model, initiated after every integration, to loop on each item and update it to the business requirements.
- D. Build a complex and optimized view (relevant indices, efficient joins, etc.), and use it every time a user needs to use the data.

Answer: B

Explanation:
Comprehensive and Detailed In-Depth Explanation:
As an Appian Lead Developer, handling a daily CSV integration with hundreds of thousands of items requires a solution that balances performance, scalability, and Appian's architectural strengths. The timing (1:00 AM integration, 8:00 AM availability) and data volume necessitate efficient processing and minimal runtime overhead. Let's evaluate each option based on Appian's official documentation and best practices:
A . Use an Appian Process Model, initiated after every integration, to loop on each item and update it to the business requirements:
This approach involves parsing the CSV in a process model and using a looping mechanism (e.g., a subprocess or script task with fn!forEach) to process each item. While Appian process models are excellent for orchestrating workflows, they are not optimized for high-volume data processing. Looping over hundreds of thousands of records would strain the process engine, leading to timeouts, memory issues, or slow execution-potentially missing the 8:00 AM deadline. Appian's documentation warns against using process models for bulk data operations, recommending database-level processing instead. This is not a viable solution.
B . Build a complex and optimized view (relevant indices, efficient joins, etc.), and use it every time a user needs to use the data:
This suggests loading the CSV into a table and creating an optimized database view (e.g., with indices and joins) for user queries via a!queryEntity. While this improves read performance for users at 8:00 AM, it doesn't address the integration process itself. The question focuses on processing the CSV ("manipulate" and "operation"), not just querying. Building a view assumes the data is already loaded and transformed, leaving the heavy lifting of integration unaddressed. This option is incomplete and misaligned with the requirement's focus on processing efficiency.
C . Create a set of stored procedures to handle the volume and the complexity of the expectations, and call it after each integration:
This is the best choice. Stored procedures, executed in the database, are designed for high-volume data manipulation (e.g., parsing CSV, transforming data, and applying business logic). In this scenario, you can configure an Appian process model to trigger at 1:00 AM (using a timer event) after the CSV is received (e.g., via FTP or Appian's File System utilities), then call a stored procedure via the "Execute Stored Procedure" smart service. The stored procedure can efficiently bulk-load the CSV (e.g., using SQL's BULK INSERT or equivalent), process the data, and update tables-all within the database's optimized environment. This ensures completion by 8:00 AM and aligns with Appian's recommendation to offload complex, large-scale data operations to the database layer, maintaining Appian as the orchestration layer.
D . Process what can be completed easily in a process model after each integration, and complete the most complex tasks using a set of stored procedures:
This hybrid approach splits the workload: simple tasks (e.g., validation) in a process model, and complex tasks (e.g., transformations) in stored procedures. While this leverages Appian's strengths (orchestration) and database efficiency, it adds unnecessary complexity. Managing two layers of processing increases maintenance overhead and risks partial failures (e.g., process model timeouts before stored procedures run). Appian's best practices favor a single, cohesive approach for bulk data integration, making this less efficient than a pure stored procedure solution (C).

Conclusion: Creating a set of stored procedures (C) is the best option. It leverages the database's native capabilities to handle the high volume and complexity of the CSV integration, ensuring fast, reliable processing between 1:00 AM and 8:00 AM. Appian orchestrates the trigger and integration (e.g., via a process model), while the stored procedure performs the heavy lifting-aligning with Appian's performance guidelines for large-scale data operations.
Reference:
Appian Documentation: "Execute Stored Procedure Smart Service" (Process Modeling > Smart Services).
Appian Lead Developer Certification: Data Integration Module (Handling Large Data Volumes).
Appian Best Practices: "Performance Considerations for Data Integration" (Database vs. Process Model Processing).

NEW QUESTION # 26
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