

SAP Integration Suite

C_CPI_2506

SAP Certified Associate – Integration Developer

- Exam: C_CPI_2506
 - Questions: 60
 - Duration: 2 hours
 - Cut Score: 75%
-
- <https://learning.sap.com/certifications/sap-certified-associate-integration-developer>

How to Prepare

Developing with SAP Integration Suite	10 hours

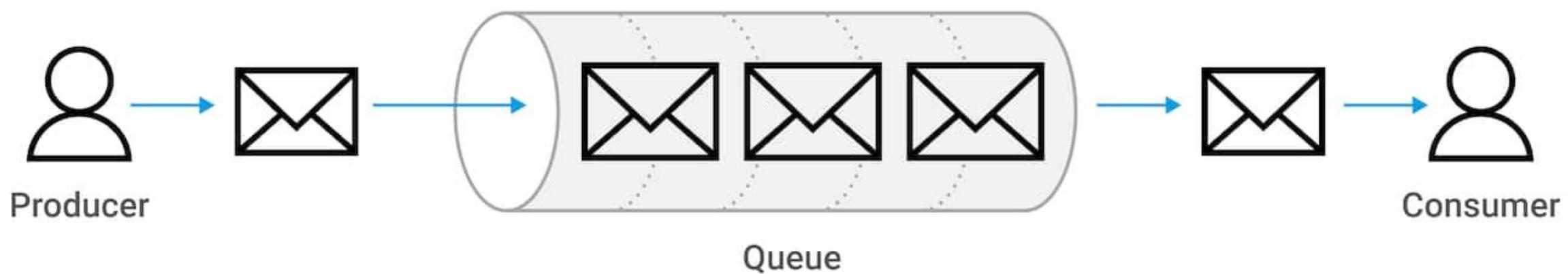
Topic Areas

SAP Integration Suite Overview	11 – 20 %
Managing APIs	21 - 30 %
Implementing Cloud Integration	31 – 40 %
SAP Event Mesh	21 - 30 %

In Event Mesh, which object is responsible for holding messages until they can be consumed?

- A. Queue
- B. Topic
- C. Event Bridge
- D. Event Catalog

What is a message queue?



In Event Mesh, what binds a topic to a queue so messages are stored for later retrieval?

- A. Topic Subscription
- B. Service Key
- C. Event API
- D. Namespace Mapping

What Are Topics?

In an event-driven architecture (EDA), events are published to topics and endpoints can subscribe to one or more topics to attract events from publishers. Technically, topics are simply strings composed of one or more levels added as metadata in a message header that let publishers classify messages and let subscribers specify what they want to receive messages about. This publish-subscribe model enables event brokers to use topics as routing information to send event messages everywhere they need to go.

However, a topic is more than just a string providing routing info. You can also think of a topic as a hierarchical definition of the subject of an event message. A topic can both route events to the appropriate recipients and categorize and describe the event itself. A well-defined topic contains details specific to the instance of an event and subscribers can receive only the event instances that are relevant to them rather than receiving messages about all instances and then processing the payloads before discarding messages they don't need. A well-defined topic structure can make your topics *smart*.

Defining Topics

A topic is a string with the format `a/b/c/.../n`, where `a`, `b`, `c` and so on are levels in a hierarchy that you design to describe your events. For example, if you're publishing information for Example Airline (EA), you might need topics like `flight/boarding/ea1234/jfk` and `flight/departed/ea321/yow` to organize the events you're publishing. You can learn about the full syntactical rules, construction, and encoding in [Solace Message Format Topics](#).

One or more topic levels can be defined using variables that are replaced with properties specific to the event when it occurs. Using variables allows topics to define the event itself and not just the category of the event. Variables could be used to include a location, an order id, and other data about the event within the topic. Both of the event instances for our airline, `flight/boarding/ea1234/jfk` and `flight/departed/ea321/yow` can be sent by an application using the topic `flight/[status]/[flightNumber]/[origin]`.

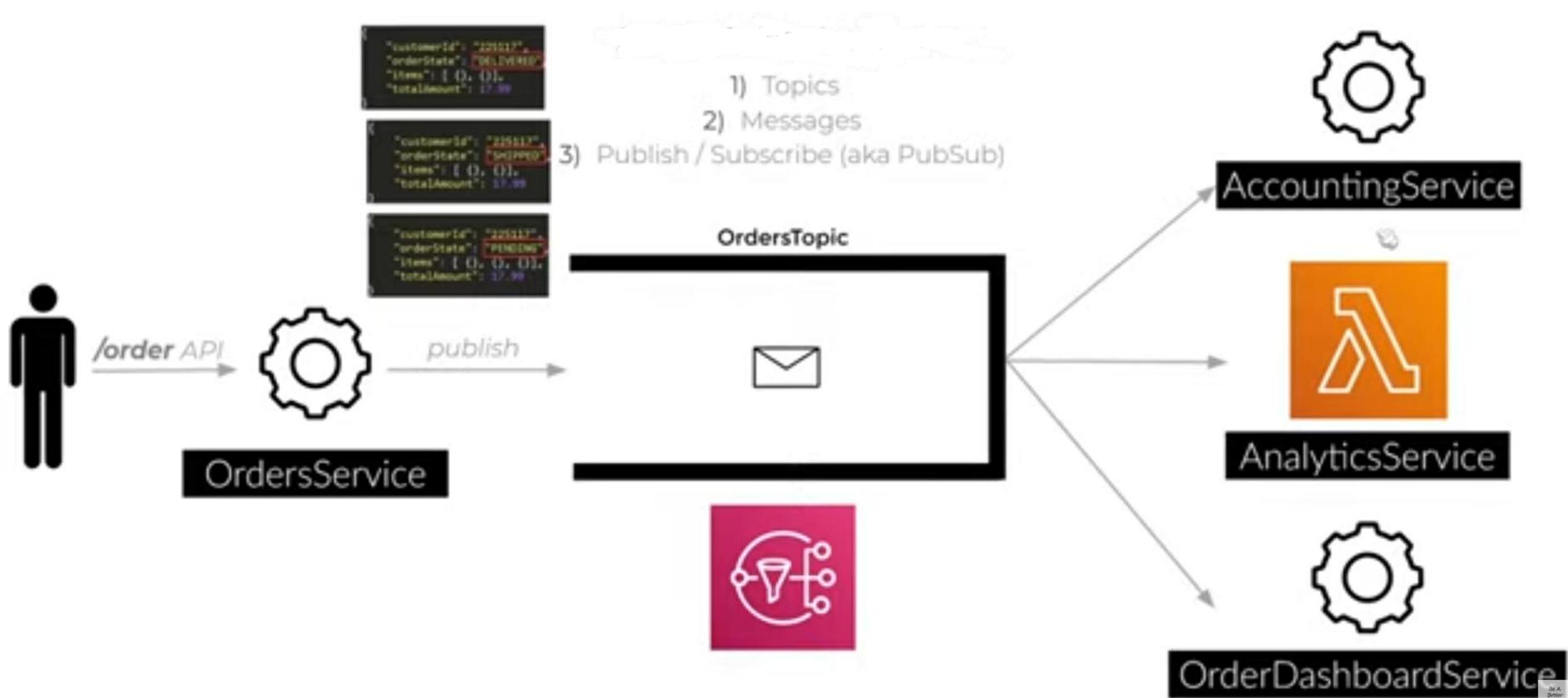
To learn more about defining topics, read about [Topic Architecture Best Practices](#).

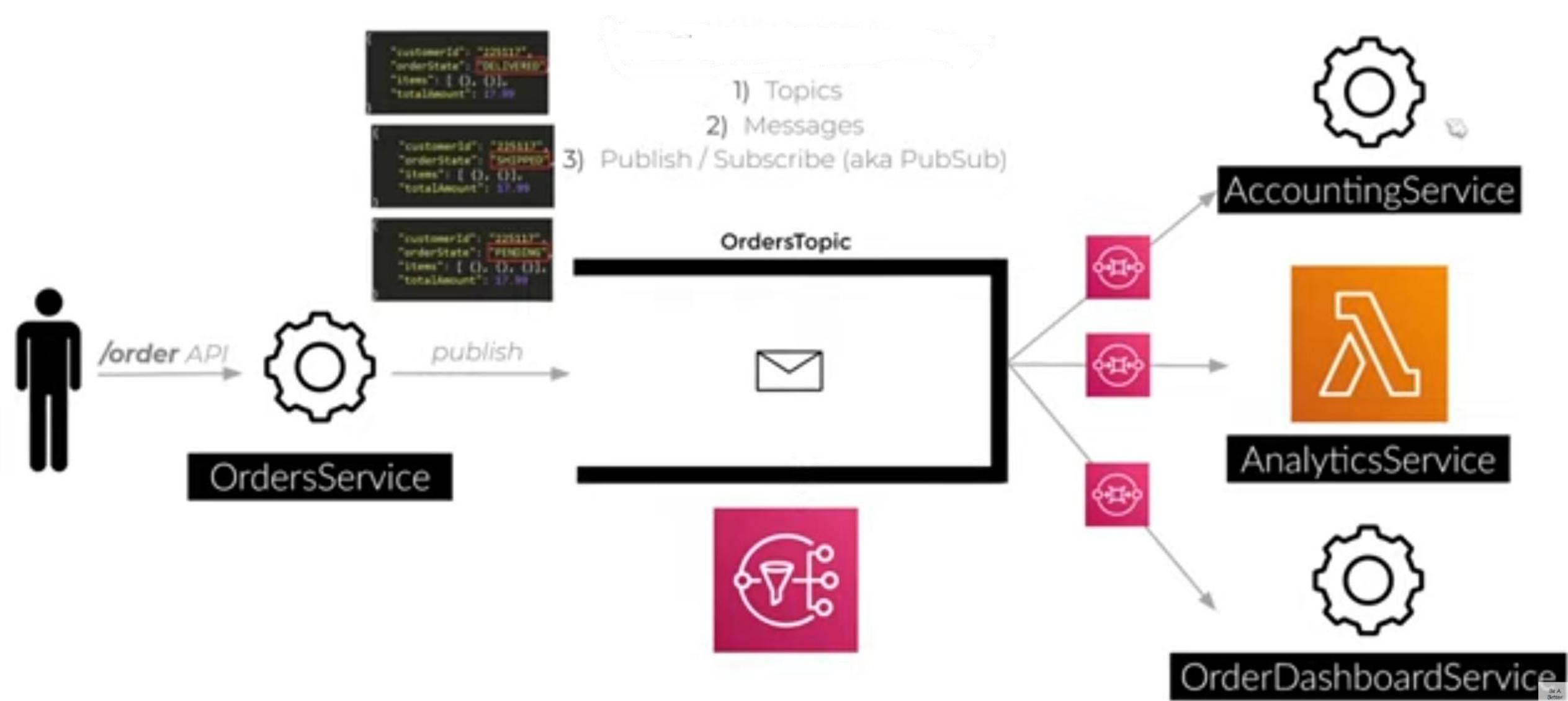
Topic Subscriptions

A topic subscription is a string used to attract published events. Topic subscriptions can contain wildcards to match with multiple topics. The `*` and `>` characters can be used as wildcards in topic subscriptions.

- `*`
When `*` appears by itself at a level within a topic subscription, it indicates a wildcard match at that level. For example, `flight/*/ea1234` matches the topics `flight/boarding/ea1234` and `flight/departed/ea1234`.
- `>`
The `>` character is used at the last level of a subscription to indicate a “one or more” wildcard match. For example, `flight/boarding/>` doesn't match the topic `flight/boarding`, but it does match `flight/boarding/ea1234` and `flight/boarding/ea321/yow/fra`.

To learn more about wildcard rules and their use in topic subscriptions, see [Wildcard Characters in Topic Subscriptions](#).



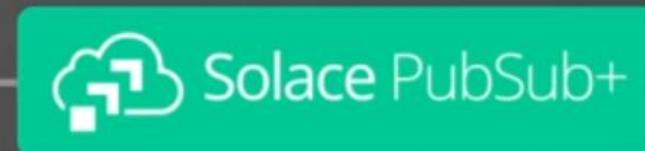


Topic Structure for Payments

```
<app>/<stage>/<country>/<version>/<channel>/  
<bank>/<merchant type>/<merchant>
```

Pay/init/US/v1/creditcard/BofA/Taxi/ComfortCab

PRODUCERS



Pay/*/*/v1/creditcard/CapOne/>



CAPONE
CREDIT CARD
MICROSERVICE

Pay/*/*/v1/creditcard/BofA/>



BOFA
CREDIT CARD
MICROSERVICE

Pay/>



ALL PAYMENTS
SYSTEM OF
RECORD

PRODUCERS



Solace PubSub+

Pay/*/usa/>



USA

SYSTEM OF RECORD

Pay/*/can/>



CANADA

SYSTEM OF RECORD

Pay/*/uk/>



UK

SYSTEM OF RECORD

Pay/*/sg/>



SINGAPORE

SYSTEM OF RECORD

Pay/*/*/qr-code/>



QR CODE

MICROSERVICE

Which of the following is NOT a key benefit of Event-Driven Architectures?

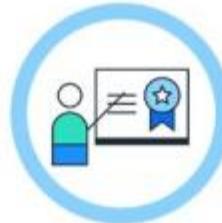
- A. Real-time processing of events as they occur
- B. Improved scalability through decoupled components
- C. Reduced dependency between services for higher reliability
- D. Requires tightly coupled services for faster performance

Key Benefits of Event-Driven Architectures



Real-time Processing

- Events are processed as they occur
- Enables organizations to respond quickly to business changes



Increased Reliability

- Reduced dependency between services
- Increased fault tolerance and stability



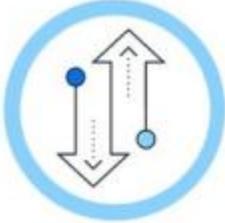
Scalability

- Decoupled components allow systems to scale flexibly and on demand



Efficient Resource Utilization

- Event-driven processing
- Avoid unnecessary workloads



Flexibility & Agility

- Loosely coupled services
- Easier to adapt and extend the architecture



Figure 1: Event-Driven Architectures - Key Benefits

What is the primary purpose of SAP Event Mesh EMIS?

- A. To provide the same functionality as standalone Event Mesh within the SAP Integration Suite
- B. To replace Solace PubSub+ with an SAP-built protocol
- C. To store large files for retrieval
- D. To act as an API management tool

Comparison of the Products Offered

Feature	SAP Event Mesh	SAP Integration Suite, SAP Event Mesh (EMIS)	SAP Integration Suite, Advanced Event Mesh
Functionality	Basic event processing and forwarding	Integration of events within the SAP Integration Suite	Advanced event streaming, management, and monitoring capabilities
Use Cases	Simple integration within the SAP ecosystem	Integration of SAP and non-SAP sources in hybrid landscapes	Complex, large-scale event-driven architectures
Deployment	Cloud-based on SAP BTP	Part of the SAP Integration Suite on SAP BTP	Flexible deployment across various public clouds, on-premises, or edge environments
Data Volume	Supports messages up to 1 MB with 10 GB storage	Matches the specifications of SAP Event Mesh	Supports messages up to 30 MB with up to 6 TB storage
Event Governance & Monitoring	Not supported	Basic integration into the SAP Integration Suite	Comprehensive event governance, design, publishing, and event discovery

Event Mesh EMIS Overview

In addition to the standalone SAP Event Mesh solution, Event Mesh is also available as an activated capability within the SAP Integration Suite. The functionality is identical to the standalone version, but implementation and usage differ.

Supported Patterns

SAP Event Mesh supports the following event-driven architecture (EDA) patterns:

- **Publish/Subscribe:** Core functionality that allows multiple subscribers to receive events, enabling loosely coupled systems.
- **Point-to-Point:** Direct messaging between sender and receiver via queues for targeted delivery.

Deployment Options

SAP Event Mesh is only available as a capability within the SAP Integration Suite.

Which product offers comprehensive event governance, design, publishing, and discovery features?

- A. SAP Event Mesh (Standalone)
- B. SAP Integration Suite, SAP Event Mesh (EMIS)
-  C. SAP Integration Suite, Advanced Event Mesh
- D. SAP Data Intelligence Messaging Hub

Comparison of the Products Offered

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Which protocols are supported by Advanced Event Mesh for maximum flexibility?

- A. Only HTTP and WebSocket
- B. MQTT, AMQP, JMS, REST**
- C. SFTP, SMTP, AMQP
- D. OData, SOAP, SFTP

Key Features

- **Distributed Event Mesh:** Enables event transmission across various applications and cloud environments.

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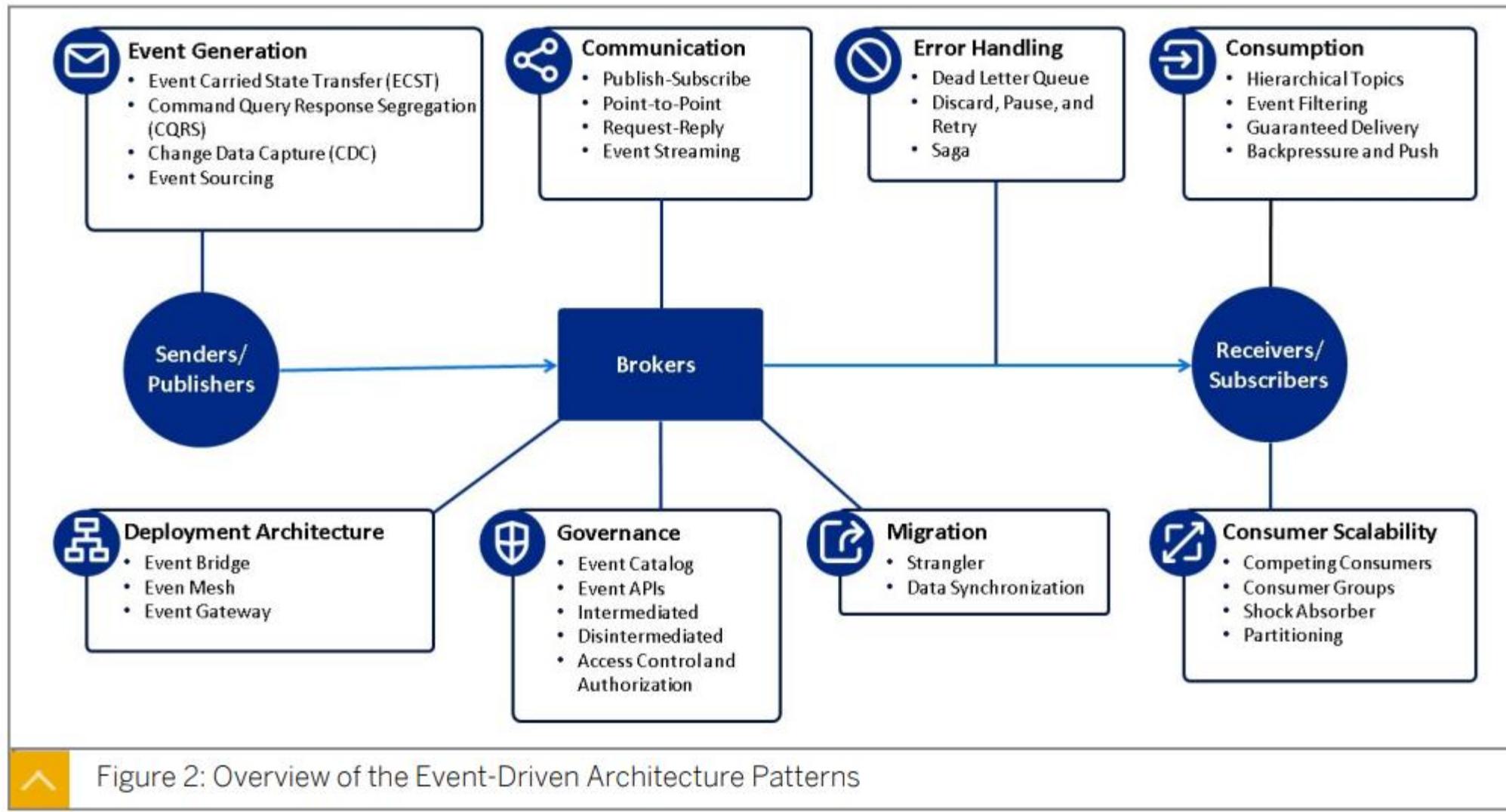


Exploring Event Mesh

- **Hierarchical Topics and Event Routing:** Supports dynamic event routing based on topic hierarchies.
- **Guaranteed Delivery and Persistence:** Ensures events are stored and reliably processed.
- **Multi-Protocol Support:** Supports MQTT, AMQP, JMS, and REST for maximum flexibility.
- **Hybrid Integration:** Compatible with on-premise, cloud, and hybrid deployments.

Which Event-Driven Architecture component mediates events between different systems?

- A. Event Bridge
- B. Event Gateway
- C. Event Catalog
- D. Event API



What is an Event Broker

- Receives events from publishers and delivers them to subscribers based on predefined rules
- Examples of Event Brokers
 - SAP Integration Suite, Advanced Event Mesh (based on Solace PubSub+)
 - Apache Kafka
 - AWS EventBridge
 - Azure Event Grid

Details of the architecture

The graphic shows the **Event-Driven Architecture** with various architecture patterns depending on the components. We are only interested in the patterns implemented by the broker. The most important ones are:

1. Communication

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Exploring Event Mesh

- **Publish-Subscribe:** Multiple recipients can subscribe to an event
- **Point-to-Point:** Direct communication between two parties
- **Request-Reply:** Event-based requests with response mechanism
- **Event Streaming:** Continuous processing of real-time events

2. Deployment Architecture

- **Event Bridge:** Mediation of events between different systems
- **Event Mesh:** Fully distributed event network
- **Event Gateway:** Control of the event flow

Which feature in Advanced Event Mesh supports dynamic event routing based on topic hierarchies?

- A. Protocol Bridging
- B. Hierarchical Topics**
- C. Guaranteed Delivery
- D. Durability Mode

Key Features

- **Distributed Event Mesh:** Enables event transmission across various applications and cloud environments.

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Exploring Event Mesh

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- **Hybrid Integration:** Compatible with on-premise, cloud, and hybrid deployments.

Which pattern allows multiple consumers to process messages from the same queue, improving scalability?

- A. Publish/Subscribe
- B. Competing Consumers**
- C. Event Bridge
- D. Event Gateway

Supported Patterns

Advanced Event Mesh supports a wide range of EDA patterns, including:

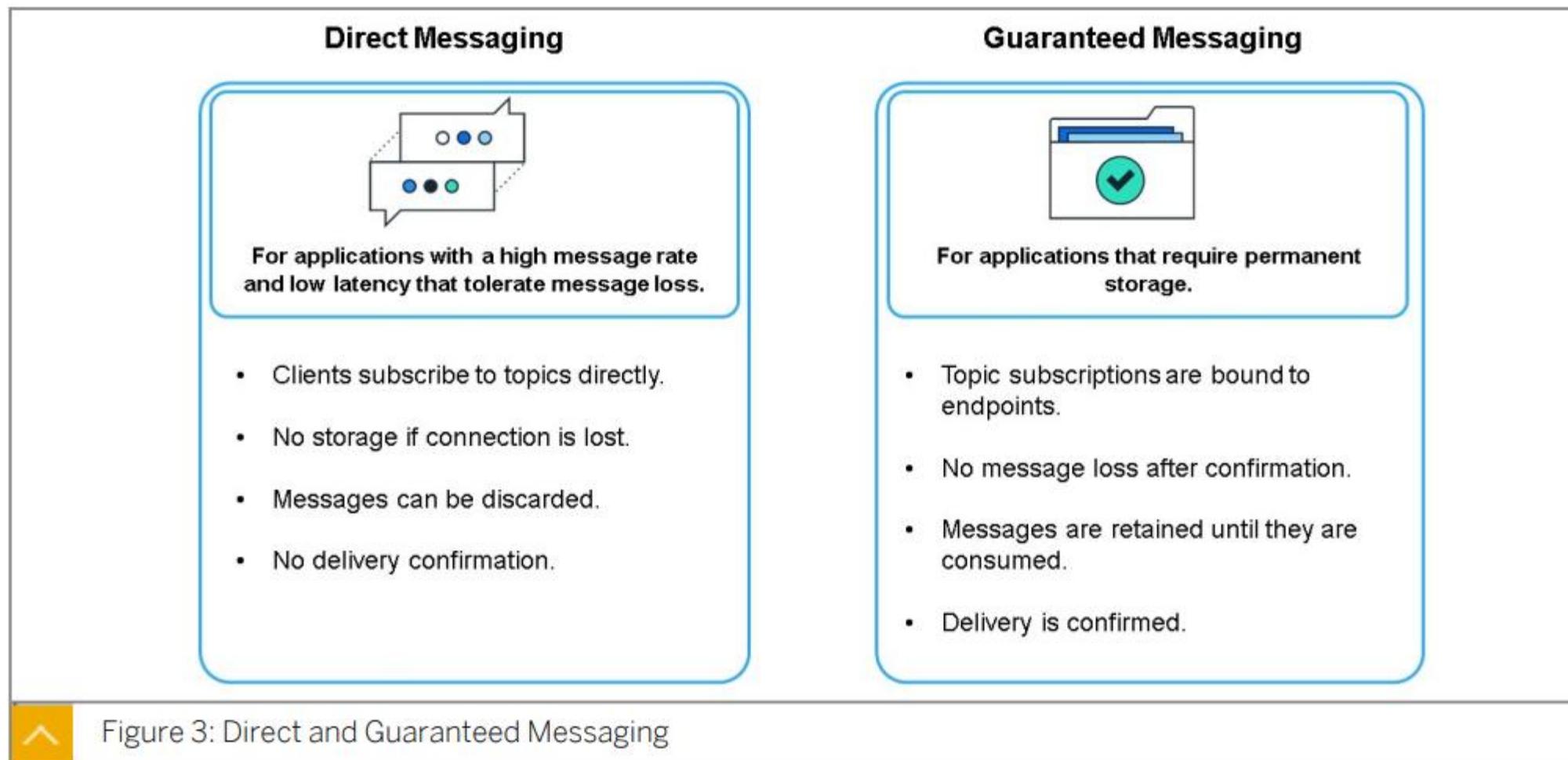
- Hierarchical Topics, Guaranteed Delivery, Event Filtering, Publish-Subscribe, Event Mesh, Competing Consumers
- Integrated governance and security mechanisms
- Scalability, fault tolerance, and migration support
- Direct and guaranteed messaging
- Persistence and durability

Which messaging approach would you choose for high-throughput, low-latency communication where occasional message loss is acceptable?

- A. Guaranteed Delivery
- B. Direct Messaging**
- C. Event Streaming with guaranteed persistence
- D. Competing Consumers pattern

Direct and Guaranteed Messaging

Modern event brokers support direct and guaranteed messaging.



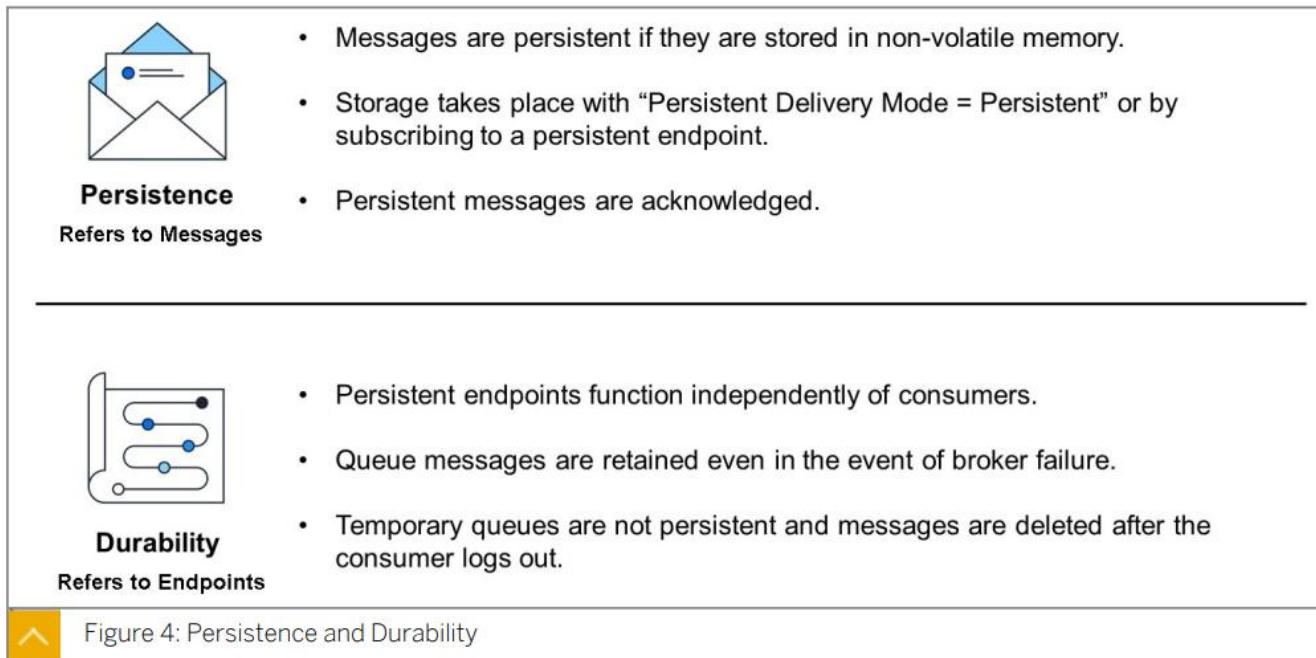
In the context of SAP Event Mesh, what does binding a topic to a queue accomplish?

- A. Ensures events for that topic are stored and delivered reliably
- B. Reduces storage requirements for the topic
- C. Encrypts messages for that topic automatically
- D. Forces synchronous delivery to subscribers

In SAP Event Mesh, what is the primary difference between persistence and durability?

- A. Persistence applies to messages, while durability applies to endpoints
- B. Persistence ensures endpoints survive broker restarts, while durability ensures messages are stored in non-volatile memory
- C. Persistence and durability are interchangeable terms for message storage
- D. Persistence only applies in direct messaging, while durability only applies in guaranteed messaging

Persistence and Durability



Persistence refers to messages and durability refers to endpoints.

- **Persistence**
 - Messages are persistent if they are stored in non-volatile memory.
 - Storage takes place with “Persistent Delivery Mode = Persistent” or by subscribing to a persistent endpoint.
 - Persistent messages are acknowledged.
- **Durability**
 - Persistent endpoints function independently of consumers.
 - Queue messages are retained even in the event of broker failure.
 - Temporary queues are not persistent and messages are deleted after the consumer logs out.

Which deployment option for SAP Event Mesh (Standalone) is available?

- A. Only public cloud on SAP BTP
- B. Private cloud and public cloud
- C. On-premise only
- D. Hybrid deployment with on-premise and BTP

Feature	SAP Integration Suite: Advanced Event Mesh	SAP Integration Suite: Event Mesh Standalone: Event Mesh
Key Features	<ul style="list-style-type: none"> Distributed Event Mesh Hierarchical Topics and Event Routing Guaranteed Delivery and Persistence Multi-Protocol Support Hybrid Integration 	<ul style="list-style-type: none"> Event-Driven Communication Publish-Subscribe Mechanism Guaranteed Delivery SAP Integration Hybrid Connectivity
Supported Patterns	<ul style="list-style-type: none"> Hierarchical Topics, Guaranteed Delivery, Event Filtering, Publish-Subscribe, Event Mesh, Competing Consumers Integrated governance and security mechanisms Scalability, fault tolerance, and migration support Direct and guaranteed messaging Persistence and durability 	<ul style="list-style-type: none"> Publish / Subscribe Point-to-Point
Deployment Options	<ul style="list-style-type: none"> On-Premise Public Cloud Private Cloud Hybrid 	<p>SAP Integration Suite: Event Mesh</p> <ul style="list-style-type: none"> Only available within SAP Integration Suite <p>Standalone: Event Mesh</p> <ul style="list-style-type: none"> Public Cloud
Use cases	<ul style="list-style-type: none"> Real time Enterprise Application Integration IoT and Edge Computing Scalable Microservices Architecture Omnichannel Customer Experience Financial and Transaction Processing 	<ul style="list-style-type: none"> Enterprise Application Integration IoT Integration and Edge Computing Omnichannel Customer Experience Financial Transactions and Payment Systems

Public Cloud

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Exploring Event Mesh

- Available as a managed service on the SAP Business Technology Platform (BTP).
- Ideal for cloud-native applications requiring elastic scaling.
- Supports major public cloud environments, including AWS, Azure, and Google Cloud.

The screenshot shows the SAP Event Mesh interface. The top navigation bar has a 'Default Plan' dropdown set to 'Message Clients'. The main content area is titled 'Message Clients' and displays three message clients: 'cld900' (Type: Instance), '2023' (Type: Instance), and 'Consume_2023' (Type: Instance). Below each client is its identifier and type. At the bottom of the page, there is a link to 'Further information SAP Event Mesh Default Plan Technical Constraints'.

Subdomain : int-cust-demo-store-24sj2az7

Message Clients

cld900	2023	Consume_2023
Type: Instance	Type: Instance	Type: Instance
≡ 3 / 10 cld900/demo/d052537	≡ 2 / 10 sap/S4HANAOD/2023	≡ 4 / 10 sap/georelations/1

Further information [SAP Event Mesh Default Plan Technical Constraints](#)

What is the primary role of an Event Gateway?

- A. To control the flow of events between producers and consumers
- B. To store messages in a persistent queue
- C. To create hierarchical topic structures
- D. To generate service keys for authentication

Details of the architecture

The graphic shows the **Event-Driven Architecture** with various architecture patterns depending on the components. We are only interested in the patterns implemented by the broker. The most important ones are:

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Exploring Event Mesh

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2. Deployment Architecture

- **Event Bridge:** Mediation of events between different systems
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- **Event Gateway:** Control of the event flow

3. Governance

- **Event Catalog:** Cataloging and management of events
- **Event APIs:** Standardized interfaces for event access
- **Intermediated versus Disintermediated:** Control of the interaction between services
- **Event APIs:** Standardized interfaces for event access
- **Access Control and Authorization:** Security mechanisms for controlling access

Which component in Event-Driven Architecture is responsible for cataloging and managing events for governance purposes?

- A. Event Catalog
- B. Event Gateway
- C. Event Mesh
- D. Event Bridge

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In an Event-Driven Architecture, which pattern continuously processes streams of events in near real-time?

- A. Publish/Subscribe
- B. Point-to-Point
- C. Event Streaming**
- D. Request/Reply

Details of the architecture

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What is the main advantage of hierarchical topic naming in Advanced Event Mesh?

- A. It reduces the number of brokers needed
- B. It enables fine-grained subscription filtering**
- C. It increases encryption strength
- D. It allows direct API-based publishing only

In SAP Event Mesh, which authentication mechanism is typically used when connecting applications via service keys?

- A. OAuth 2.0
- B. SAML
- C. Kerberos
- D. Basic Authentication

In SAP Event Mesh, which operation is required to create a connection between a topic and a queue?

- A. Binding
- B. Bridging
- C. Routing
- D. Mapping

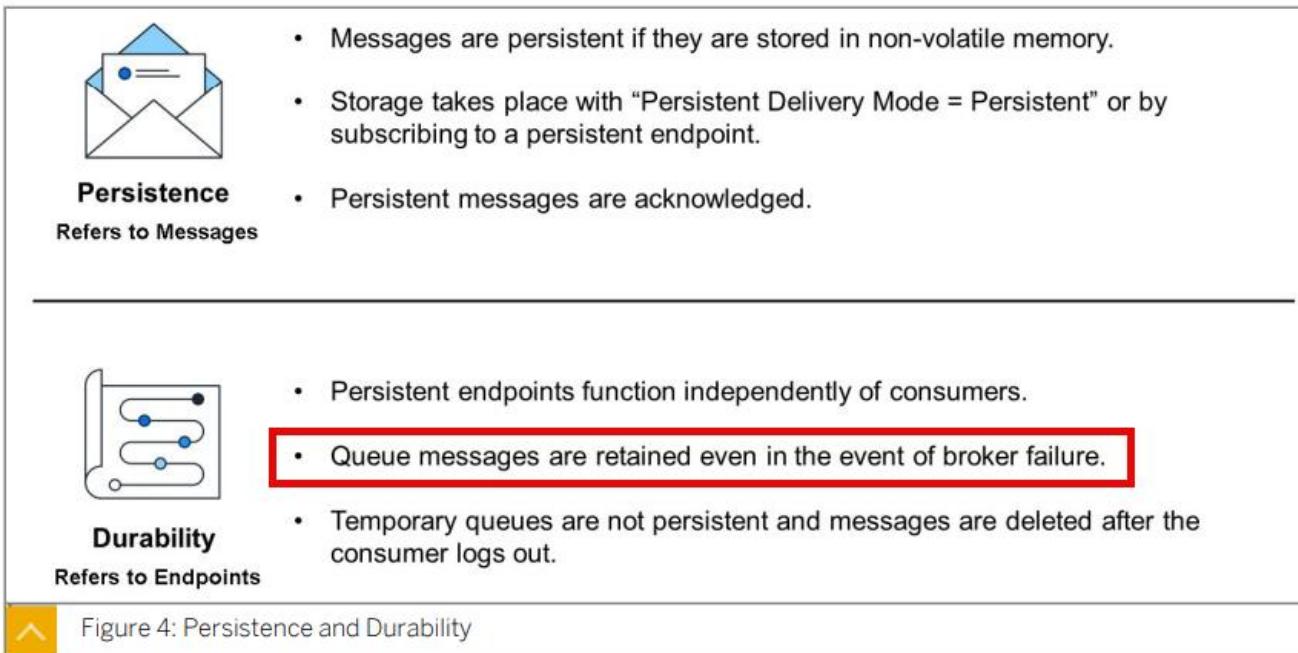
3. Topics

Events are tagged with metadata that describes the event, called a “topic.” A topic is a hierarchical text string that describes what’s in the event. Publishers just need to know what topic to send an event to, and the event broker takes care of delivery to systems that need it. Applications register their interest in events with a given topic by *subscribing* to that topic. They can use wildcards to subscribe to a group of topics that have similar topic strings. By using the correct topic taxonomy and subscriptions, you can fulfill two rules of event-driven architecture:

1. A subscriber should subscribe only to the events it needs. The subscription should do the filtering, not the business logic.
2. A publisher should only send an event once, to one topic, and the event broker distributes it to any number of recipients.

Note: Always use **topic hierarchy best practices** to ensure these rules are obeyed.

Persistence and Durability



Persistence refers to messages and durability refers to endpoints.

- **Persistence**

- Messages are persistent if they are stored in non-volatile memory.
- Storage takes place with “Persistent Delivery Mode = Persistent” or by subscribing to a persistent endpoint.
- Persistent messages are acknowledged.

- **Durability**

- Persistent endpoints function independently of consumers.
- Queue messages are retained even in the event of broker failure.
- Temporary queues are not persistent and messages are deleted after the consumer logs out.

Which feature is available in SAP Integration Suite: Advanced Event Mesh but NOT in Standalone Event Mesh?

- A. Distributed Event Mesh
- B. Event-Driven Communication
- C. Publish-Subscribe Mechanism
- D. SAP Integration

What is the deployment option for Standalone Event Mesh?

- A. Public Cloud only
- B. On-Premise and Public Cloud
- C. Hybrid only
- D. Private Cloud only

In SAP Cloud Integration, which step type is used to process XML messages using XPath expressions?

- A. Content Modifier
- B. XML Validator
- C. XML Modifier
- D. Script Step

Manipulating Exchange Parameters

- Exchange params (including payload): set by incoming messages
- But these params can also be manually manipulated
 - Content Modifier component
 - Groovy SDK
 - JavaScript SDK
 - PDF in Message Mapping
 - XSLT Mapping
 - And more...

In SAP Cloud Integration, which expression correctly accesses the value of an exchange property named OrderID using Simple Expression Language?

- A. \${header.OrderID}
- B. \${property.OrderID}**
- C. \${exchange.OrderID}
- D. \${OrderID}

Simple Expression Language

- Used to parameterize Exchange Parameters
- General scheme is `${}` placeholder containing built-in variable or Exchange parameter
- For example
 - `${in.body}`
 - `${property.someproperty}`
 - `${header.someheader}`

In SAP Cloud Integration, which Simple Expression Language snippet retrieves the current message exchange pattern (e.g., InOnly or InOut)?

- A. \${exchange.getPattern()}
- B. \${property.exchangePattern}
- C. \${header.MEP}
- D. \${camel.exchangePattern}

In SAP Cloud Integration, which step allows you to set message headers, exchange properties, and the body without writing code?

- A. Content Enricher
- B. Content Modifier**
- C. Script Step
- D. Message Mapping

You want to make the endpoint URL of an API call configurable at deployment time so it can change between test and production without modifying the integration flow design. Which mechanism should you use?

- A. Adapter-Specific Message Attributes
- B. Externalized Parameter**
- C. Content Enricher
- D. Simple Expression Language

In SAP Cloud Integration, which feature allows you to execute an integration flow without actually sending the message to the target system, for the purpose of verifying processing logic?

- A. Simulation
- B. Tracing
- C. Test Connectivity
- D. Debug Mode

Key Summary Points – Unit 4

Summary

The process of creating an integration flow involves using a graphical editor in the remote cloud integration application. Simulations can be conducted on individual parts or the entire integration flow to verify that values are correctly set in content modifiers, scripts or mappings. Once the integration flow is complete, it is versioned and deployed, resulting in the creation and deployment of a Java application in a runtime. The integration flow can then be executed. The development process can be approached as cycles, where the placement and configuration of components, debugging using trace log levels, and testing are repeated until the desired result is achieved.

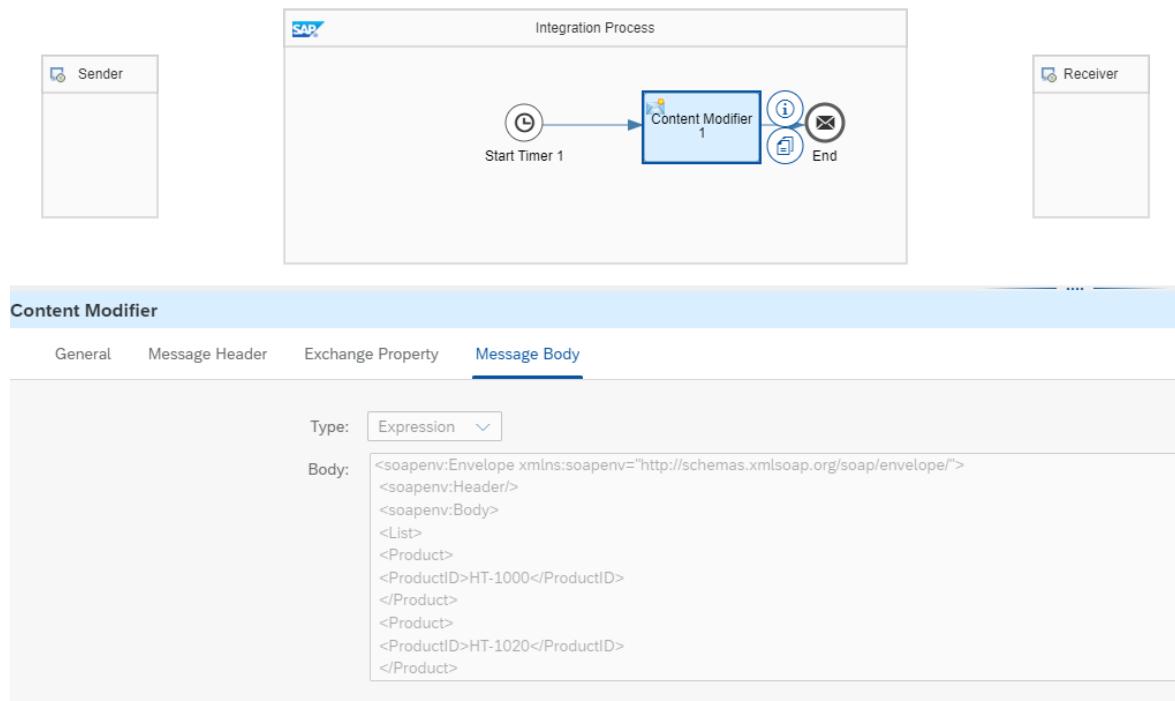
In SAP Cloud Integration, which logging level must be enabled to see the payload at each step in the Message Processing Log (MPL)?

- A. Info
- B. Trace**
- C. Error
- D. Warning

Key Summary Points – Unit 5

Developer Test with Real Deployment and Debugging of your Integration Flow

Before examining the integration flow, it needs to be deployed in the monitoring environment. The graphical model is converted into a Java application and placed in the runtime, allowing the integration flow to be started. If the deployment is successful, the integration flow will either execute immediately if a timer event is used, or it will wait for an incoming message. Cloud integration offers a trace log level that provides insight into the processing of each integration flow component.



Key Summary Points – Unit 4

Q2. What needs to be enabled to work in debugging mode within the monitor?

- A The log level must be set on trace.
- B The log level must be set on info.
- C The log level must be set on hold.



Correct

Correct. The log level must be set on trace.

Key Summary Points – Unit 4

Overview / Monitor Message Processing

Time: Past 24 Hours Status: All Artifact: All Integration Flows ID: Message, Correlation or Application Mes... or Use More Fields

Messages (12) << < 1 / 1 > >> C

Artifact Name	Status
DelayedDelivery_Process	Completed
Feb 24, 2023, 13:41:26	1 sec 918 ms
DelayedDelivery_Process	Completed
Feb 24, 2023, 13:41:15	2 sec 883 ms
DelayedDelivery_Process	Completed
Feb 24, 2023, 11:16:05	2 sec 158 ms
DelayedDelivery_Process	Completed
Feb 24, 2023, 11:14:06	2 sec 738 ms
DelayedDelivery_Process	Completed
Feb 24, 2023, 11:10:56	559 ms
DelayedDelivery_Process	Completed
Feb 24, 2023, 11:10:28	488 ms
DelayedDelivery_Process	Completed
Feb 24, 2023, 11:05:25	584 ms
DelayedDelivery_Process	Completed
Feb 24, 2023, 10:55:58	1 sec 708 ms
DelayedDelivery_Process	Completed
Feb 24, 2023, 10:55:46	383 ms
DelayedDelivery_Process	Completed
Feb 24, 2023, 10:55:26	1 sec 646 ms
tryOut	Completed
Feb 23, 2023, 18:00:45	44 ms
tryOut	Discarded
Feb 23, 2023, 18:00:45	7 ms

DelayedDelivery_Process Last Updated at: Feb 24, 2023, 13:41:26

Status Properties Logs Artifact Details

Message processing completed successfully.

Processing Time: 1 sec 918 ms

Properties

Message ID: AGP4sHS-EZqypxPkFMvP66XkFS0U
Correlation ID: AGP4sHS5WSPWqYLrovAaV3ZqyXjR
Sender: Sender_SOAP

Logs

Open Text View

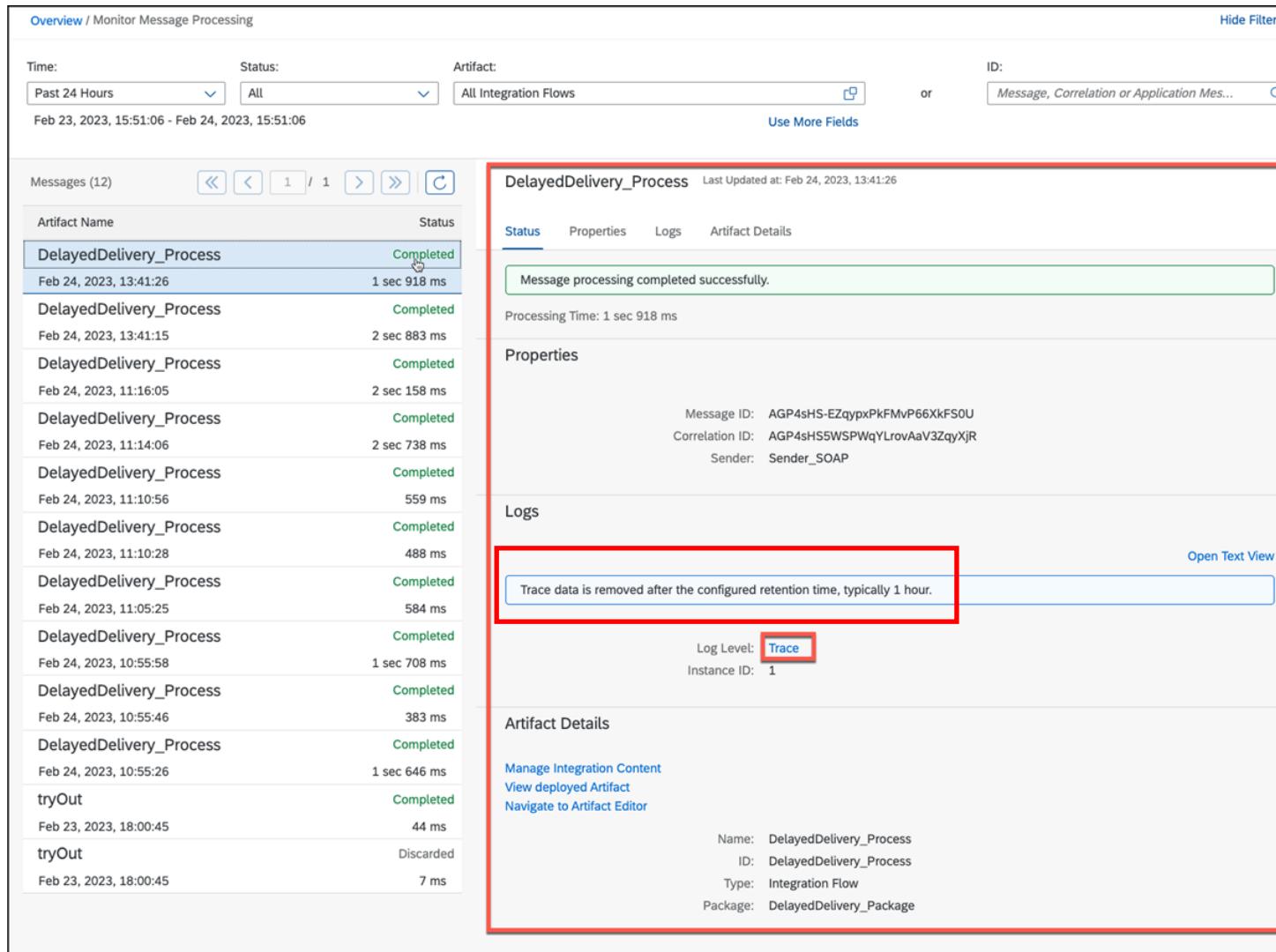
Trace data is removed after the configured retention time, typically 1 hour.

Log Level: Trace Instance ID: 1

Artifact Details

Manage Integration Content
View deployed Artifact
Navigate to Artifact Editor

Name: DelayedDelivery_Process
ID: DelayedDelivery_Process
Type: Integration Flow
Package: DelayedDelivery_Package



A mobile app queries inventory and must receive the latest stock count before placing an order. Which pattern fits best?

- A. Publish/Subscribe
- B. Request/Reply
- C. Fire-and-Forget
- D. Event Sourcing

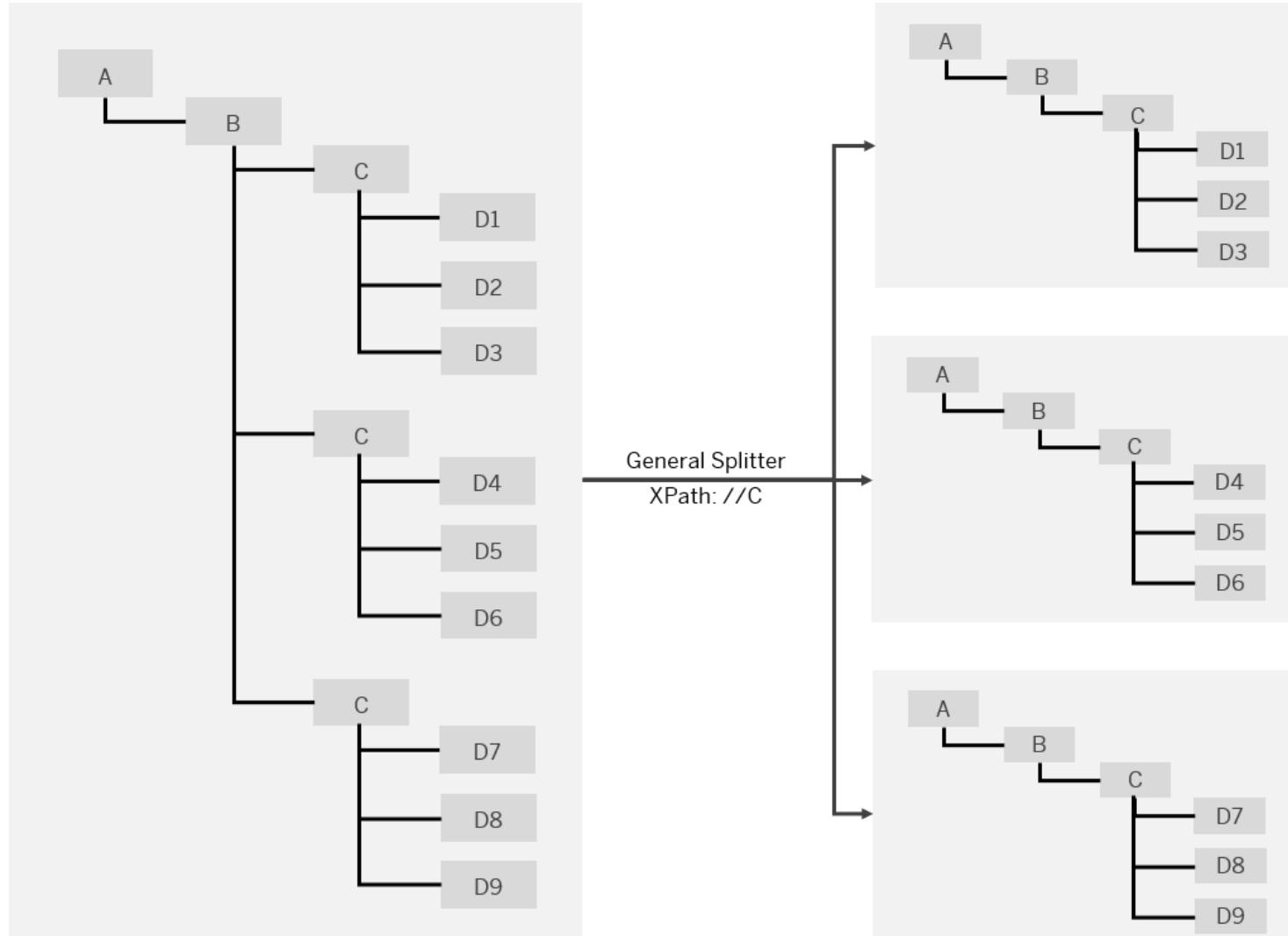
Key Summary Points – Unit 5

Show Integration Patterns

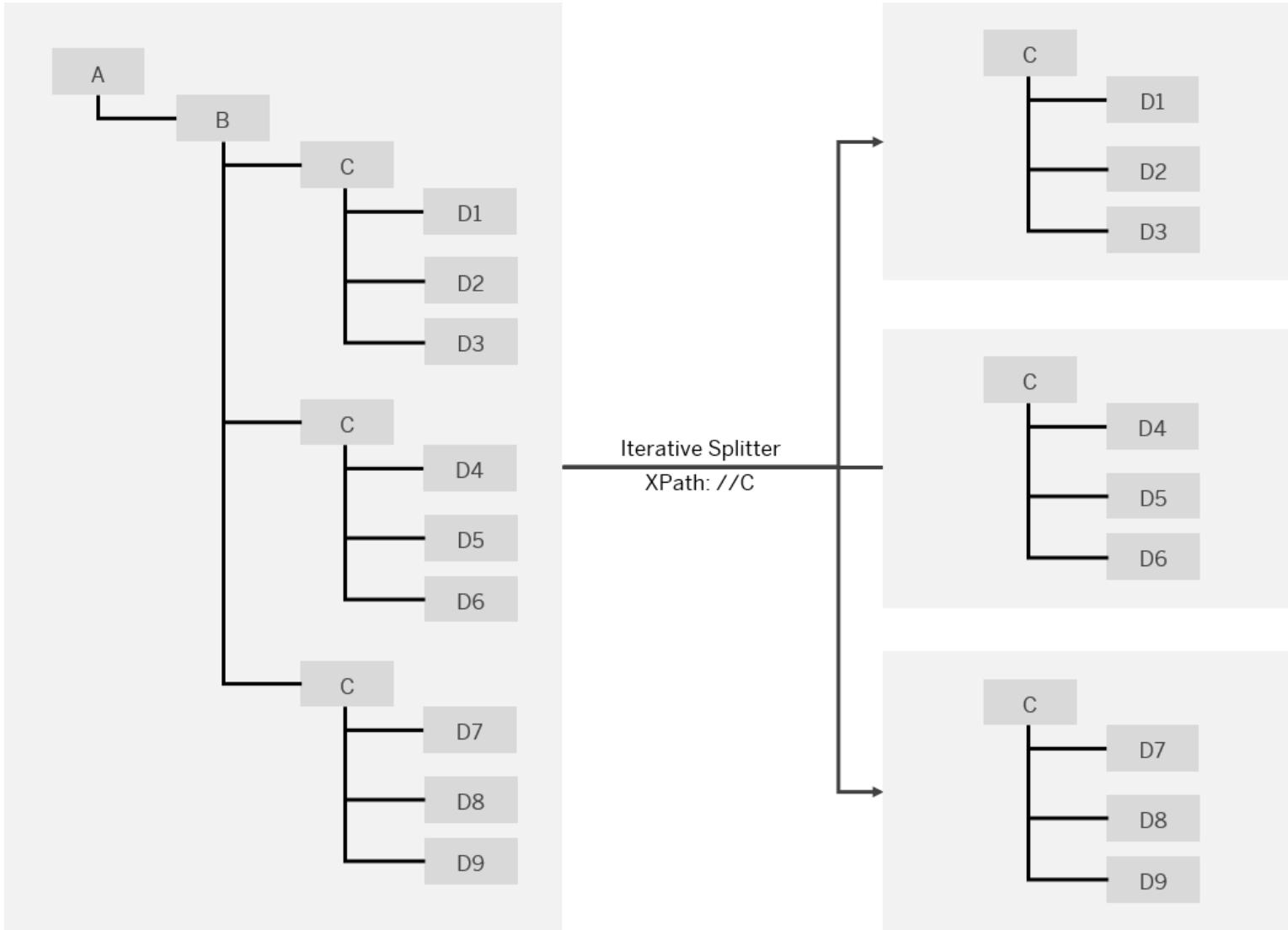
The following integration patterns are included in the example package:

- [Aggregator ↗](#)
- [Composed Message Processor ↗](#)
- [Content-Based Routing ↗](#)
- [Content Enricher ↗](#)
- [Content Filter ↗](#)
- [Message Filter ↗](#)
- [Recipient List ↗](#)
- [Resequencer ↗](#)
- [Scatter-Gather ↗](#)
- [Splitter ↗](#)
- [Quality of Service Exactly Once ↗](#)

Key Summary Points – Unit 5



Key Summary Points – Unit 5



A developer wants to debug an integration flow that is already deployed and running in the tenant. Which approach should they use?

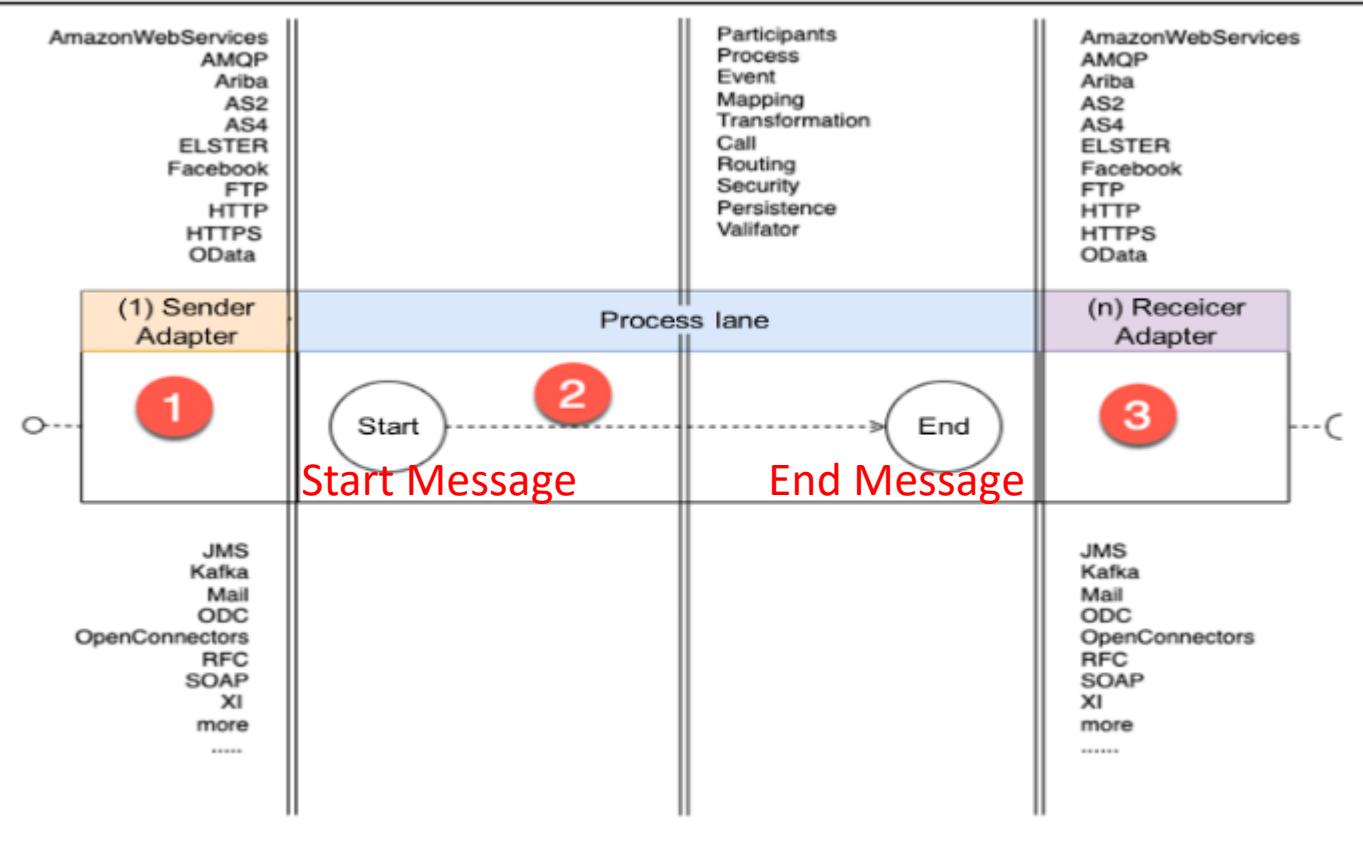
- A. Enable tracing for the integration flow and check the Message Processing Log
- B. Run a simulation in the Integration Flow Designer
- C. Re-deploy the integration flow with debug logging enabled
- D. Use the API Management test console

In SAP Cloud Integration, how many sender adapters can an integration flow contain?

- A. Only one sender adapter
- B. Zero or one sender adapter
- C. One or more sender adapters
- D. Up to five sender adapters

You are designing an integration flow to run once every night to pull data from a REST API. The integration flow will not be triggered by any inbound call from an external system. Which start element should you use?

- A. Timer Start Event
- B. Start Message
- C. Manual Trigger
- D. Sender Adapter with polling



- Integration flow has **0-1 sender adapter**
- Message is delivered via an endpoint
 - If an adapter is configured
- Process is started via **Start** message
- Different ways messages can be processed
- Receiver adapters can be configured
- Message processing can be synchronous or asynchronous

Key Features of Cloud Integration

A developer wants to reuse a common integration flow that transforms and validates messages before forwarding them. This integration flow will be invoked synchronously by another integration flow within the same tenant. Which start option should be used?

- A. Process Direct Start Event
- B. HTTP Sender Adapter
- C. Start Message
- D. Timer Start Event

In SAP Cloud Integration, which Groovy method is used to set a message header in an integration flow script?

- A. `message.setProperty("HeaderName", "Value")`
- B. `message.setHeader("HeaderName", "Value")`**
- C. `message.addHeader("HeaderName", "Value")`
- D. `message.putHeader("HeaderName", "Value")`

You need to replace the current message body with a new string value using Groovy in SAP Cloud Integration. Which method should you use?

- A. `message.setBody("New Body")`
- B. `message.setPayload("New Body")`
- C. `message.addBody("New Body")`
- D. `message.putBody("New Body")`

Key Summary Points – Unit 4

Set Exchange Parameters with Groovy SDK

The `com.sap.gateway.ip.core.customdev.util.Message` class offers methods to manipulate the parameters.

```
1 import com.sap.gateway.ip.core.customdev.util.Message;
2 import java.util.HashMap;
3
4 def Message processData(Message message) {
5     println "You can print and see the result in the console!
6     //Body
7     def body = message.getBody(String).
8     message.setBody(body + "Body is modified");
9
10    //Headers
11    def map = message.getHeaders();
12    def value = map.get("oldHeader");
13    println "oldHeader value: " +value
14    message.setHeader("oldHeader", value + "modified");
15    message.setHeader("newheader", "newheader");
16
17    //Properties
18    map = message.getProperties();
19    value = map.get("oldProperty");
20    message.setProperty("oldProperty", value + "modified");
21    message.setProperty("newProperty", "newProperty");
22    return message;
}
```

In SAP Cloud Integration, which step is used to transform an XML payload using a stylesheet resource?

- A. XSLT Mapping
- B. Message Mapping
- C. XML Validator
- D. Content Modifier

Where do you provide the XSLT stylesheet that the XSLT Mapping step executes?

- A. Upload it as an integration flow resource and reference it in the XSLT Mapping step
- B. Paste it directly into a Content Modifier
- C. Store it as an externalized parameter at deploy time
- D. Configure it in the adapter's ASMA section

Key Summary Points – Unit 5

Q2. Which object do you use to transform message structure into a specific target structure?

A XSLT Mapping

B Message Mapping

C Value Mapping

D Content Modifier

Correct

Correct. You use the XSLT Mapping to transform message structure into a specific target structure.

In SAP Cloud Integration, where do you configure reusable basic user/password credentials so multiple adapters can reference the same alias?

- A. Monitor → Security Material (User Credentials)
- B. Integration Flow → Externalized Parameters
- C. Design → Keystore
- D. Adapter-specific Advanced Settings

Key Summary Points – Unit 5

Q3. Where can user credentials be configured for secure authentication?

A

Monitor → API → Manage Security → Manage Security Material



Monitor → Integrations → Manage Security → Manage Security Material

C

Monitor → Integrations → Manage Security → User Role



Correct

Correct. You configure user credentials here: Monitor → Integrations → Manage Security → Manage Security Material.

Key Summary Points – Unit 5

The screenshot shows the SAP Integration Suite interface. The left sidebar has a tree view with nodes like Home, Discover, Design, Test, Configure, Monitor (1), Integrations (2), B2B Scenarios, APIs, Inspect, Monetize, and Settings. The 'Integrations' node is selected and highlighted with a red circle containing the number 2. The main content area is titled 'Overview / Manage Security Material' (3) and shows a table for 'Security Material (1)'. The table has columns: Name, Type, Status, Deployed By, and Deployed On. One row is listed: 'SFSF Credentials' (User Credentials (SuccessFactors)), 'Deployed', 'milton.chandradas@sap.com', and 'Jun 27, 2023, 07:48'. There is a 'Filter by Name or Deployed By' search bar and a toolbar with 'Create' (4), 'Upload', and other icons. A red box highlights a dropdown menu under 'Create' containing options: User Credentials, OAuth2 Client Credentials, OAuth2 SAML Bearer Assertion, OAuth2 Authorization Code, and Secure Parameter.

Name	Type	Status	Deployed By	Deployed On
SFSF Credentials	User Credentials (SuccessFactors)	Deployed	milton.chandradas@sap.com	Jun 27, 2023, 07:48

User Credentials

- OAuth2 Client Credentials
- OAuth2 SAML Bearer Assertion
- OAuth2 Authorization Code
- Secure Parameter

In SAP Cloud Integration, what is the primary purpose of the ESBMessaging.send role (scope)?

- A. Authorize a client to send messages to inbound runtime endpoints of integration flows
- B. Allow users to deploy and undeploy integration flows
- C. Grant read-only access to message monitoring
- D. Permit editing of integration flow artifacts in the designer

Key Summary Points – Unit 5

Q6. What role do you need to assign to yourself in order to send a message to your configured endpoint?

A ESBMessaging.send

B Send.To.Endpoint

C ESB.Messaging.Send

D HTTP.ESBMessaging.Send

Correct

Correct. In order to send a message to your configured endpoint you need to assign the role: ESBMessaging.send.

Key Summary Points – Unit 5

Field Name	Input Data
Address	/send/message/DelayedDelivery_Process/timestamp (must be unique)
Service Definition	Manual
Message Exchange Pattern	One-Way (starting asynchronous)
Processing Settings	WS standard
Authorization	User Role
User Role	ESBMessaging.send

SOAP

General Connection WS-Security Conditions

CONNECTION DETAILS

Address: * /send/message/DelayedDelivery_Process/061122

Service Definition: Manual

Use WS-Addressing:

Message Exchange Pattern: One-Way

Processing Settings: WS Standard

Authorization: User Role

User Role: * ESBMessaging.send

Which XPath selects all Price elements anywhere in the document?

- A. //Price
- B. /Price//*
- C. /*/Price
- D. /Order/Price//

You must filter orders where <Total> is greater than 100 using a predicate on Order. Which concise XPath is valid?

- A. /Order[Total > 100]
- B. /Order/Total > 100
- C. /Order[Total >= '100' and false()]
- D. /Order[sum(Total) > 100 and count(Total)=0]

Which XPath selects all Item elements directly under /Order/Items?

- A. /Order/Items/Item
- B. //Item
- C. /Items/Item
- D. /Order/*/Item

XPath Expressions

The screenshot shows the 'XPath Notebook' interface with three code cells and a preview pane.

Code Cells:

- [44] `/ProductSet` ✓ 0.2s Source: 'Products.xml' Items: 1 XPath
... `"-/ProductSet[1]"`
- [45] `/ProductSet/count(Product)` ✓ 0.2s Source: 'Products.xml' Items: 1 XPath
... `1`
- [46] `/ProductSet/count(Product) > 0` ✓ 0.2s Source: 'Products.xml' Items: 1 XPath
... `true`

Preview Pane:

Products.xml

```
1 <ProductSet>
2   <Product>
3     <Category>Flat Screen Monitors</Category>
4     <ProductID>HT-1035</ProductID>
5     <Name>Flat Basic</Name>
6   </Product>
7 </ProductSet>
```

You need to retrieve all records from a large entity set where the service returns a nextLink. Which adapter capability should you use to automatically loop through all pages?

- A. Enable paging in the OData adapter to follow server-driven nextLink until completion
- B. Increase the request timeout to allow the backend to send everything in one page
- C. Set \$top to 0 so the service returns all results
- D. Use a JMS queue to buffer pages

In the OData Receiver adapter, which feature helps you construct the resource path and query options (\$select, \$filter, \$expand, \$orderby) without typing them manually?

- A. Query Wizard
- B. Message Mapping
- C. Policy Editor
- D. Content Modifier Assistant

HTTP Adapter

The screenshot shows the SAP Business Application Studio interface with two main panes. The left pane displays an XML feed definition for an OData service, specifically for SalesOrderLineItemSet. The right pane shows the resulting XPaths for extracting SalesOrderID and ItemPosition properties from the feed entries.

Left Pane (Feed Definition):

```
<feed xmlns="http://www.w3.org/2005/Atom"
      xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata"
      xmlns:d="http://schemas.microsoft.com/ado/2007/08/dataservices" xml:lang="en-US">
  <id>https://sapdevcenter.sapes5.com/sap/opu/odata/iwbep/GWSAMPLE_BASIC</id>
  <title type="text">SalesOrderLineItemSet</title>
  <updated>2023-06-04T07:44:49Z</updated>
  <author>
    <name/>
  </author>
  <link href="ProductSet('HT-1035')/ToSalesOrderLineItems" rel="self" type="application/atom+xml">
  <entry>
    <id>https://sapdevcenter.sapes5.com/sap/opu/odata/iwbep/GWSAMPLE_BASIC(SalesOrderID='0500000001')</id>
    <title type="text">SalesOrderLineItemSet(SalesOrderID='0500000001')</title>
    <updated>2023-06-04T07:44:49Z</updated>
    <category term="GWSAMPLE_BASIC.SalesOrderLineItem" scheme="http://schemas.microsoft.com/ado/2007/08/dataservices/scheme">
    <link href="SalesOrderLineItemSet(SalesOrderID='0500000001',ItemPosition='000000040')" rel="self" type="application/atom+xml">
      <content type="application/xml">
        <m:properties xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata"
                      xmlns:d="http://schemas.microsoft.com/ado/2007/08/dataservices" xml:lang="en-US">
          <d:SalesOrderID>0500000001</d:SalesOrderID>
          <d:ItemPosition>000000040</d:ItemPosition>
          <d:DeliveryDate>2018-01-07T23:00:00.0000000</d:DeliveryDate>
        </m:properties>
      </content>
    </entry>
    <entry>
      <id>https://sapdevcenter.sapes5.com/sap/opu/odata/iwbep/GWSAMPLE_BASIC(SalesOrderID='0500000001')</id>
      <title type="text">SalesOrderLineItemSet(SalesOrderID='0500000001')</title>
      <updated>2023-06-04T07:44:49Z</updated>
```

Right Pane (XPaths):

- XPath: //content/m:properties/d:SalesOrderID
Result: [✓ 0.2s] `"/feed[1]/entry[1]/content[1]/m:properties[1]/d:SalesOrderID[1]", "/feed[1]/entry[2]/content[1]/m:properties[1]/d:SalesOrderID[1]"`
- XPath: //content/m:properties/d:ItemPosition
Result: [✓ 0.2s] `"/feed[1]/entry[1]/content[1]/m:properties[1]/d:ItemPosition[1]", "/feed[1]/entry[2]/content[1]/m:properties[1]/d:ItemPosition[1]"`

Bottom Note:

Namespaces are not automatically removed in HTTP adapter...
So your XPath needs to take that into account
Remove the namespaces

Details of OData Adapter

Example: OData Adapter

Table 1: Example: Details of an OData Adapter

Detail	Outcome
Category	HTTP based
Transport protocol	TCP/IP
Application protocol	HTTP/HTTPS
Message protocol	Atom Pub as XML or JSON representation

Features of OData Adapter

- Query wizard
 - Navigate the interface to be accessed with metadata document
- Page Processing mode
 - Read entries in multiple pages which are processed sequentially
 - Overcome challenges with large number of entries
- Automatically removing namespaces
 - Remove namespaces and prefixes automatically

In the OData Receiver adapter, which feature helps you construct the resource path and query options (\$select, \$filter, \$expand, \$orderby) without typing them manually?

- A. Query Wizard
- B. Message Mapping
- C. Policy Editor
- D. Content Modifier Assistant

In SAP Cloud Integration, where do you access tenant-level system log files for runtime troubleshooting (outside of per-message logs)?

- A. Monitor → System Logs
- B. Monitor → Message Processing
- C. Design → Artifacts → Resources
- D. API Portal → Analytics

Key Summary Points – Unit 4

System Log Files

The Access Logs section in the Build-In Monitor provides direct access to the System Log files via the *System Log Files* tile. These files include the HTTPS access logs and the trace logs, and are retained for a period of 30 days.

The screenshot shows the SAP Integration Suite interface. The left sidebar has a tree view with nodes like Home, Discover, Design, Test, Configure, Monitor (which is expanded), Integrations (highlighted with a red circle 1), B2B Scenarios, APIs, Inspect, Monetize, and Settings. The main area has three sections: Overview, Manage Stores, and Access Logs. The Overview section shows counts for Artifacts (1), Entries (7), Keys (0), and Artifacts (0). The Manage Stores section shows Data Stores (1), Variables (0), Message Queues (1), and Number Ranges (0). The Access Logs section contains a box labeled 'System Log Files' with a red circle 3. Below it are 'Message Locks' and 'Designtime Artifact Locks'.

What is the key difference between System Logs and the Message Processing Log (MPL)?

- A. System Logs capture platform/runtime events; MPL captures per-message execution details
- B. System Logs only store payloads; MPL only stores headers
- C. System Logs are per integration flow; MPL is tenant-wide
- D. There is no difference; both show identical information

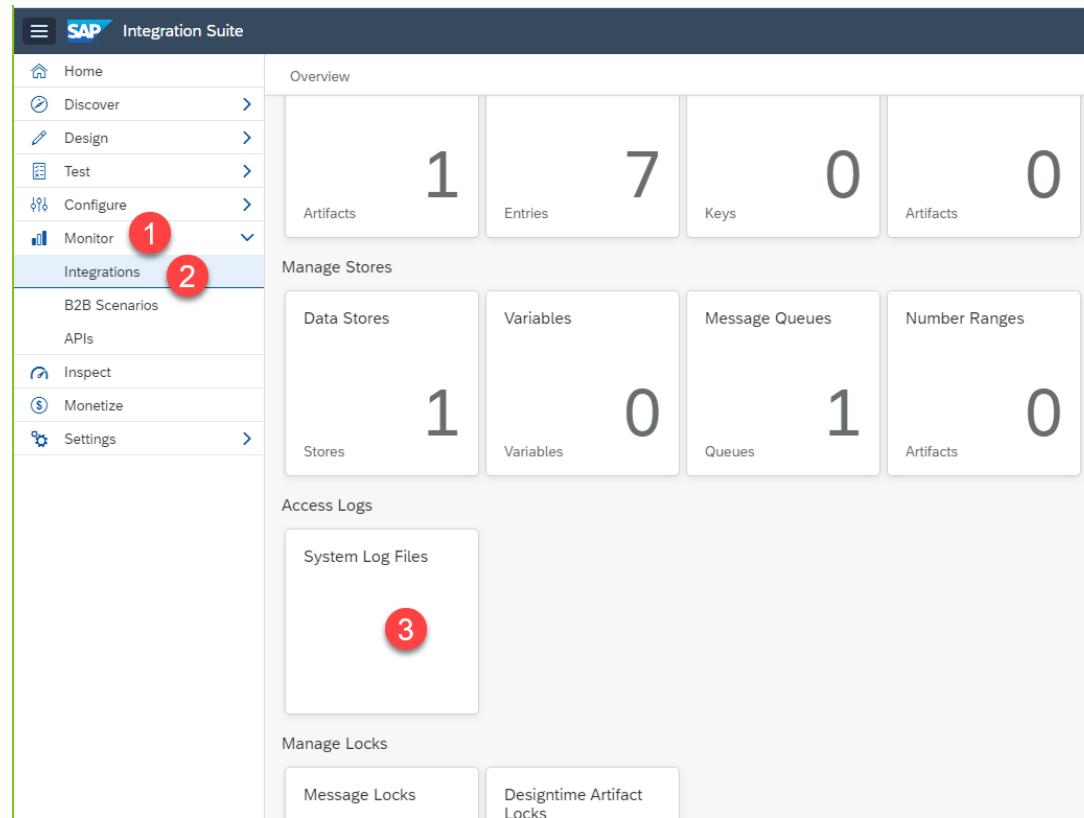
A deployment fails and no message ever reaches the flow, so no MPL exists. Where should you look first to find error details?

- A. System Logs
- B. API Analytics
- C. JMS Queues
- D. Data Stores

Key Summary Points – Unit 4

System Log Files

The Access Logs section in the Build-In Monitor provides direct access to the System Log files via the *System Log Files* tile. These files include the HTTPS access logs and the trace logs, and are retained for a period of 30 days.



In SAP Cloud Integration, where can you browse SAP-delivered prepackaged integration content within your tenant?

- A. Cloud Integration → Discover
- B. Monitor → Message Processing
- C. API Portal → Develop
- D. API Business Hub Enterprise → Products

You want to explore SAP's full catalog of prepackaged integration packages before importing them into your tenant. Which site should you use?

- A. SAP Business Accelerator Hub
- B. SAP Support Portal
- C. SAP Store
- D. Integration Advisor

Key Summary Points – Unit 4

Q3. Where can you discover pre-defined integration content?

A My preferred SAP Consultant dealerstore.

SAP Business Accelerator Hub - New name

✓ API Business Hub or Discovery tab in the Integration Suite.

C API Business Hub Enterprise or Design Tab into the Integration Suite.

✓ Correct

Correct. You can discover pre-defined integration content on the API Business Hub or Discovery tab in the Integration Suite.

The screenshot shows the SAP Integration Suite interface. The left sidebar has a tree structure with 'Discover' (1) highlighted with a red circle. Under 'Discover', 'Integrations' (2) is also highlighted with a red circle. The main content area displays a list of pre-defined integration packages, such as 'Discover (568)', 'SAP SuccessFactors Time Tracking Integration with third party clock vendors - exemplars', and 'SAP Document and Reporting Compliance: Electronic Documents for Chile'. A red circle with the number 3 is positioned near the bottom right of the list.

The screenshot shows the SAP Business Accelerator Hub interface. The top navigation bar includes 'Explore', 'Resources', 'Discover Integrations' (2), and 'Partner with Us'. The main content area features a section titled 'Discover Product Integrations' (1) with the sub-instruction 'Find integrations between different products'. A red circle with the number 3 is positioned near the bottom right of the search bar.

Select a product that you would like to view integrations for

Find product (3)

S/4HANA® Cloud

S/4HANA®

Customer

In SAP Cloud Integration, which are the three primary message components used to carry data and metadata through an integration flow? (Select 3 answers)

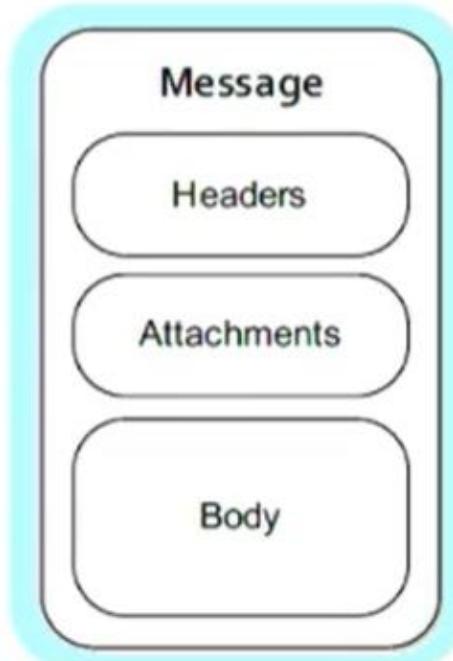
- A. Headers
- B. Body
- C. Attachments
- D. Properties

Basic concepts of Cloud Integration flow...

Message

Fundamental entity **containing the data** being carried and routed in Camel

- Messages have a body (a payload), headers, and optional attachments
- Messages are uniquely identified with an identifier of type `java.lang.String`
- *Headers*
 - Headers are values associated with the message
 - ⇒ Sender identifier, hints about content encoding, authentication information,...
 - Headers are name-value-pairs
 - ⇒ Name is a unique, case-insensitive string
 - ⇒ Value is of type `java.lang.Object`
- *Attachments*
 - Optional – typically used for Web service and e-mail components
- *Body*
 - Type: `java.lang.Object` → any kind of content is allowed

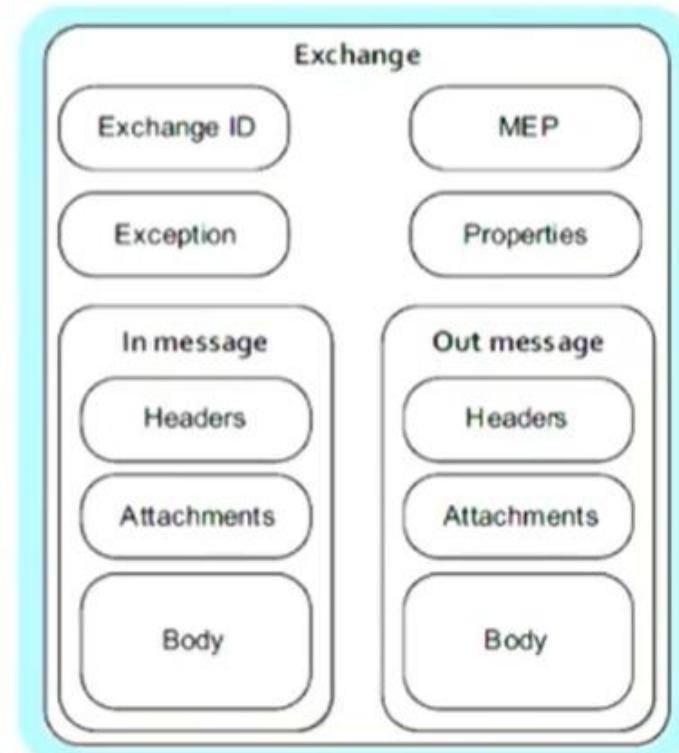


Basic concepts of Cloud Integration flow...

Exchange

The **message's container** during routing

- Provides support for various interaction types between systems, known as Message Exchange Patterns (MEP)
 - InOnly: a one-way message (e.g. JMS messaging)
 - InOut: a request-response message (e.g. HTTP-based transports)
- *Exchange ID*: a unique ID that identifies the exchange
- *MEP*
 - InOnly: exchange contains an “in message” **only**
 - InOut: exchange contains an “in message” **and** an “out message” containing the reply message for the caller
- *Exception*: If an error occurs during runtime, the Exception field will be filled
- *Properties*: Similar to message headers, but they last for the duration of the entire exchange; they contain global-level information; you can store and retrieve properties at any point during the lifetime of an exchange



In SAP Cloud Integration, what configuration makes a SOAP Sender endpoint behave asynchronously (one-way)?

- A. Set the Message Exchange Pattern to One-Way (InOnly) in the WSDL/adapter
- B. Add a Request Reply step in the flow
- C. Set the adapter timeout to 0
- D. Enable OAuth 2.0 on the sender

Key Summary Points – Unit 5

Field Name	Input Data
Address	/send/message/DelayedDelivery_Process/timestamp (must be unique)
Service Definition	Manual
Message Exchange Pattern	One-Way (starting asynchronous)
Processing Settings	WS standard
Authorization	User Role
User Role	ESBMessaging.send

SOAP

General Connection WS-Security Conditions

CONNECTION DETAILS

Address: * /send/message/DelayedDelivery_Process/061122

Service Definition: Manual

Use WS-Addressing:

Message Exchange Pattern: One-Way

Processing Settings: WS Standard

Authorization: User Role

User Role: * ESBMessaging.send

SAP Integration Suite

New Import Overview POST SOAP Inbound request +

HTTP SAP Gateway Demo System / SOAP Inbound request

POST {{baseURL}}/cxf/send/message

SOAP Request...

Collections Environments History

ModelingBasics SAP Gateway Demo System

- GET Catalog Service
- GET Catalog Metadata
- GET Service Collection URL
- GET Catalog Collection URL
- GET Product HT-1000
- GET Sales Orders count HT-1000
- GET Sales Order ID and Item Position HT-1000
- GET Find Customer ID
- GET Find Customer Address

POST SOAP Inbound request (1)

POST SOAP Inbound request - all entries

GET My First iFlow

GET My Second iFlow

GET My Third iFlow

GET My Fourth iFlow

GET My Fifth iFlow

POST In Out MEP

POST In MEP

GET SuccessFactors Endpoint

Params Authorization Headers (9) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL XML (2)

```
1 <soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
2   <soapenv:Header/>
3   <soapenv:Body>
4     <List>
5       <Product>
6         <ProductID>HT-1000</ProductID>
7       </Product>
8       <Product>
9         <ProductID>HT-1020</ProductID>
10      </Product>
11      <Product>
12        <ProductID>HT-1035</ProductID>
13      </Product>
14    </List>
15  </soapenv:Body>
16 </soapenv:Envelope>
```

Body Cookies Headers (12) Test Results (3)

Pretty Raw Preview Visualize Text (4)

Status: 202 Accepted Time: 1866 ms Size: 462 B

In SAP Integration Suite – API Management, how do you edit an API Proxy's OpenAPI definition in the UI?

- A. API Portal → Develop → APIs → open the proxy → Edit in API Designer
- B. Developer Portal → Products → open product → Edit Specification
- C. Cloud Integration → Design → open iFlow → API Designer
- D. API Business Hub Enterprise → APIs → Edit in Designer

[Edit](#)
[Edit In API Designer](#)

i The changes you've made to the API are saved but not deployed, which might affect the API Proxy runtime flow. [Click to Deploy](#).



GWSAMPLE_BASIC

API Proxy created using API Provider...

Status: Deployed

API Proxy URL: https://4ee3b5fftrial-trial.integrationsuitetrial-apim.us10.hana.ondemand.com:443/4ee3b5fftrial/GWSAMPLE_BASIC

Revision: Draft-(Revision_1746470322) i

Deployed Revision: Revision_1746470322 i

[Overview](#) [Proxy EndPoint](#) [Target EndPoint](#) [Resources](#) [Revisions](#)

Title:
GWSAMPLE_BASIC

Host Alias:

Edit in API Designer

GWSAMPLE_BASIC

Swagger UI

[BusinessPartnerSet](#)

GET
[/BusinessPartnerSet](#)
Try out

POST
[/BusinessPartnerSet](#)
Try out

GET
[/BusinessPartnerSet\('{BusinessPartnerID}'\)](#)
Try out

PUT
[/BusinessPartnerSet\('{BusinessPartnerID}'\)](#)
Try out

DELETE
[/BusinessPartnerSet\('{BusinessPartnerID}'\)](#)
Try out

GET
[/BusinessPartnerSet\('{BusinessPartnerID}'\)/ToSalesOrders](#)
Try out

POST
[/BusinessPartnerSet\('{BusinessPartnerID}'\)/ToSalesOrders](#)
Try out

GET
[/BusinessPartnerSet\('{BusinessPartnerID}'\)/ToContacts](#)
Try out

POST
[/BusinessPartnerSet\('{BusinessPartnerID}'\)/ToContacts](#)
Try out

GET
[/BusinessPartnerSet\('{BusinessPartnerID}'\)/ToProducts](#)
Try out

POST
[/BusinessPartnerSet\('{BusinessPartnerID}'\)/ToProducts](#)
Try out

GET
[/ProductSet\('{ProductID}'\)/ToSupplier](#)
Try out

GET
[/SalesOrderSet\('{SalesOrderID}'\)/ToBusinessPartner](#)
Try out

GET
[/ContactSet\(guid'{ContactGuid}'\)/ToBusinessPartner](#)
Try out

BusinessPartnerSet

GET
[/BusinessPartnerSet\('{BusinessPartnerID}'\)/ToProducts](#)
Try out

POST
[/BusinessPartnerSet\('{BusinessPartnerID}'\)/ToProducts](#)
Try out

ProductSet

Calls(05/01/2025 - 05/08/2025)

Import
Download
Paste
Generate Server Stub
Save
Cancel

```

1 openapi: 3.0.0
2  info:
3    title: GWSAMPLE_BASIC
4    version: '1'
5    description: <p></p>
6    servers:
7      - url: https://4ee3b5fftrial-trial.integrationsuitetrial-apim.us10.hana.ondemand.com:443/4ee3b5fftrial/GWSAMPLE_BASIC
8
9    tags:
10      - name: BusinessPartnerSet
11      - name: ProductSet
12      - name: SalesOrderSet
13      - name: SalesOrderLineItemSet
14      - name: ContactSet
15      - name: VH_SexSet
16      - name: VH_CountrySet
17      - name: VH_AddressTypeSet
18      - name: VH_CategorySet
19      - name: VH_CurrencySet
20      - name: VH_UnitQuantitySet
21      - name: VH_UnitWeightSet
22      - name: VH_UintlengthSet
23      - name: VH_ProductTypeCodeSet
24      - name: VH_BPRoleset
25      - name: VH_Languageset
26    paths:
27      /BusinessPartnerSet:
28        get:
29          summary: Get entities from BusinessPartnerSet
30          tags:
31            - BusinessPartnerSet
32            parameters:
33              $ref: "#/components/parameters/top"
34              $ref: "#/components/parameters/skip"
35              name: $filter
36              in: query
37              description: >-
38                Filter items by property values, see
39                [Filtering](https://help.sap.com/doc/5890d27be418427993fafaf6722cdc03b/Cloud/en-US/odataV2.pdf#page=64)
40            schema:
41              type: string
42              $ref: "#/components/parameters/count"
43              name: $orderby
44              in: query
45              description: >-
46                Order items by property values, see
47                [Sorting](https://help.sap.com/doc/5890d27be418427993fafaf6722cdc03b/Cloud/en-US/odataV2.pdf#page=65)
48            explode: false
49            schema:
50              type: array
51              uniqueItems: true
52              items:
53                type: string
54                enum:
55                  - Address
                  ...

```

OpenAPI Specification...

Key Summary Points – Unit 3

- API Designer
 - Visualization of openAPI specification is done using swagger UI
 - Swagger UI is an open source JavaScript framework to make APIs tangible

The screenshot shows the Swagger UI interface for creating an API designer. On the left, there's a sidebar with 'Swagger OAS' and 'Version: 1.0.0'. Below it, under 'pet', there's a 'POST /pet' section with a 'Try out' button. At the top right, there's a toolbar with several buttons: 'Import' (1), 'Download' (2), 'Paste' (3), 'Generate Server Stub' (4, highlighted with a red box), 'Save' (5), and 'Cancel'.

```
1  openapi: 3.0.1
2  info:
3    title: Swagger OAS
4    description: This is a sample server Petstore server
5    version: 1.0.0
6  servers:
7    - url: 'http://petstore.swagger.io/v212'
8  paths:
9    /pet:
10   post:
11     tags:
12       - pet
13     summary: Add a new pet to the store
14     operationId: addPet
15     requestBody:
16       description: Pet object that needs to be added to the store
17       content:
18         application/json: {}
19         application/xml: {}
20       required: true
21
```

For calling SAP S/4HANA Cloud OData from SAP Cloud Integration, which outbound security option is typically recommended?

- A. Basic Authentication
- B. OAuth 2.0 Client Credentials**
- C. API Key in header
- D. API Key in query string

Options for Authentication / Authorization

- Basic
- Client Certificate
- None
- OAuth2 Client Credentials
- OAuth2 SAML Bearer Assertion

Which of the following statements about the SOAP adapter in SAP Integration Suite is correct?

- A. The SOAP adapter can be used for both synchronous and asynchronous message exchange
- B. The SOAP adapter only supports synchronous communication
- C. The SOAP adapter can only be used for outbound calls from SAP Integration Suite
- D. The SOAP adapter does not support asynchronous processing

Key Summary Points – Unit 5

Field Name	Input Data
Address	/send/message/DelayedDelivery_Process/timestamp (must be unique)
Service Definition	Manual
Message Exchange Pattern	One-Way (starting asynchronous)
Processing Settings	WS standard
Authorization	User Role
User Role	ESBMessaging.send

SOAP

General Connection WS-Security Conditions

CONNECTION DETAILS

Address: * /send/message/DelayedDelivery_Process/061122

Service Definition: Manual

Use WS-Addressing:

Message Exchange Pattern: One-Way

Processing Settings: WS Standard

Authorization: User Role

User Role: * ESBMessaging.send

SAP Integration Suite

New Import Overview POST SOAP Inbound request +

HTTP SAP Gateway Demo System / SOAP Inbound request

SOAP Request...

POST {{baseURL}}/cx/f/send/message

2

Params Authorization Headers (9) Body Pre-request Script Tests Settings

Body XML

1 <soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/">
2 <soapenv:Header/>
3 <soapenv:Body>
4 <List>
5 <Product>
6 <ProductID>HT-1000</ProductID>
7 </Product>
8 <Product>
9 <ProductID>HT-1020</ProductID>
10 </Product>
11 <Product>
12 <ProductID>HT-1035</ProductID>
13 </Product>
14 </List>
15 </soapenv:Body>
16 </soapenv:Envelope>

3

Body Cookies Headers (12) Test Results

Pretty Raw Preview Visualize Text

4

Status: 202 Accepted Time: 1866 ms Size: 462 B

1

Which of the following statements is correct when an incorrect data type is set in a Content Modifier in SAP Integration Suite?

- A. The Content Modifier will raise a runtime error if the value does not match the expected data type
- B. The Content Modifier automatically converts the value to the correct type
- C. The incorrect data type is ignored and the integration flow continues without error
- D. The message is stored in the Data Store for later correction

Integration Process

```
graph LR; Start((Start Timer 1)) --> CM1[Content Modifier 1]; CM1 --> GS1[General Splitter 1]; GS1 --> CM2[Content Modifier 2]; CM2 --> End((End));
```

Content Modifier

General Message Header Exchange Property **Message Body**

incorrect datatype

Properties:

Action	Name	Source Type	Source Value	Data Type
Create	ProductID	XPath	//ProductID	java.lang.integer

2

Integration Process

```
graph LR; Start((Start Timer 1)) --> CM1[Content Modifier 1]; CM1 --> GS1[General Splitter 1]; GS1 --> CM2[Content Modifier 2]; CM2 --> End((End));
```

Run simulation...

Message Content

Headers Properties Body

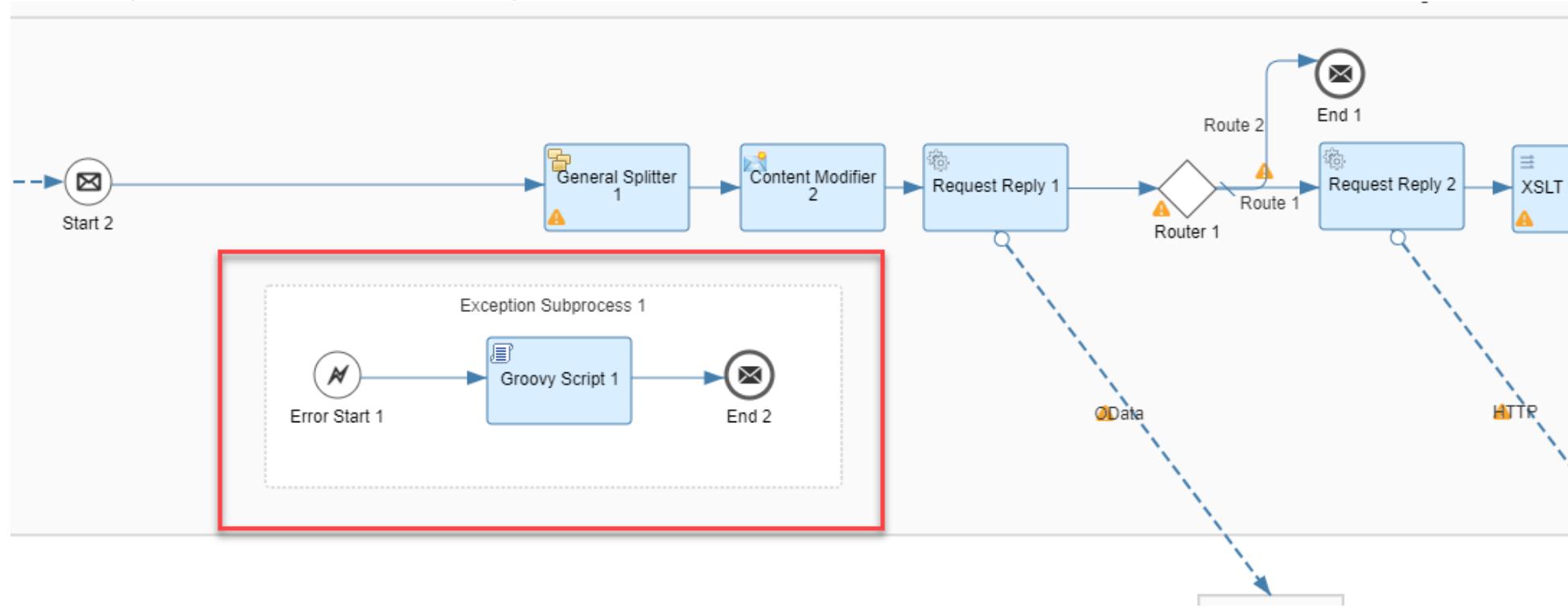
Name	Value
ProductID	[net.sf.saxon.tree.tiny.TinyTextualElement@20400b]

Exception...

Which of the following statements about an Exception Subprocess in SAP Integration Suite is correct?

- A. An Exception Subprocess is triggered when an error occurs in the main integration process
- B. An Exception Subprocess runs in parallel to the main process to handle additional logic
- C. An Exception Subprocess can only be used with JMS adapter-based flows
- D. An Exception Subprocess automatically retries failed messages until successful

Key Summary Points – Unit 5



Summary

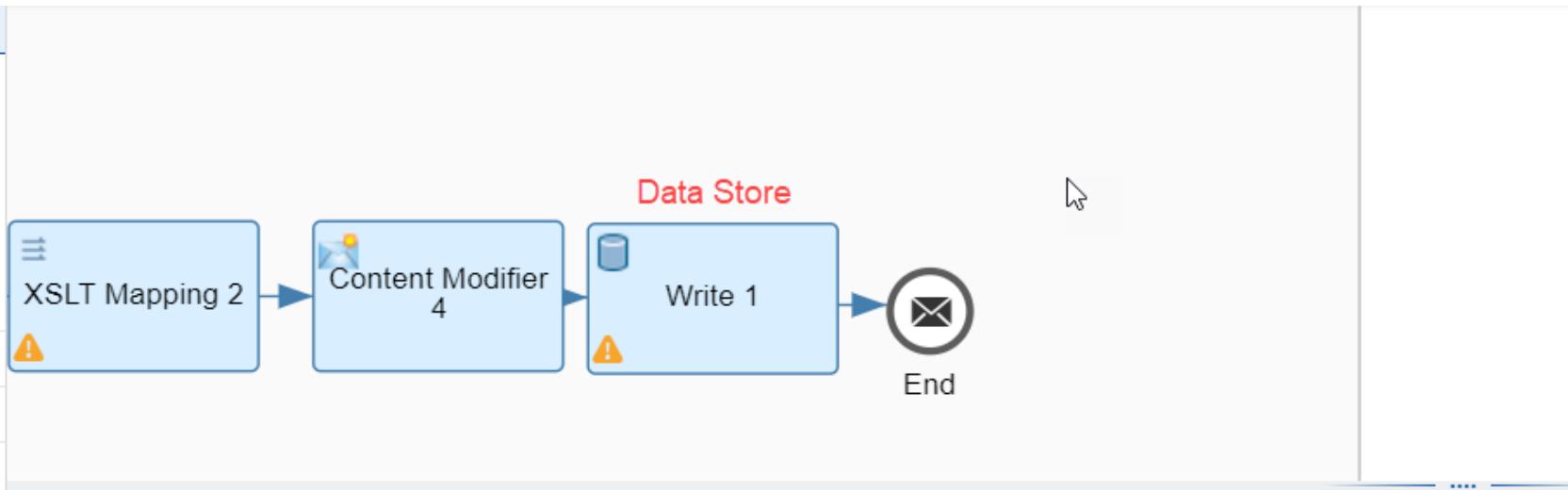
A special error subprocess can intercept an unexpected error using an Exception Start Event. After interception, various processing steps can be implemented. For instance, it would be appropriate to store process values or message content following an error. Additionally, informing the sender about the error can also be configured.

Which of the following statements about the Data Store in SAP Integration Suite is correct?

- A. The Data Store can be used to temporarily persist messages for asynchronous processing
- B. The Data Store only supports synchronous message storage and retrieval
- C. The Data Store automatically deletes all entries after 24 hours without configuration
- D. The Data Store can only be used for inbound messages from external systems

Which of the following is true about storing messages in the Data Store of SAP Integration Suite?

- A. Messages with the same entry ID will overwrite each other if the "Overwrite Existing Message" option is enabled
- B. The Data Store always creates a new entry for every incoming message, even if the entry ID is the same
- C. Overwriting of messages is not possible in the Data Store
- D. Messages are retained indefinitely and cannot be overwritten once persisted



Write

General Processing

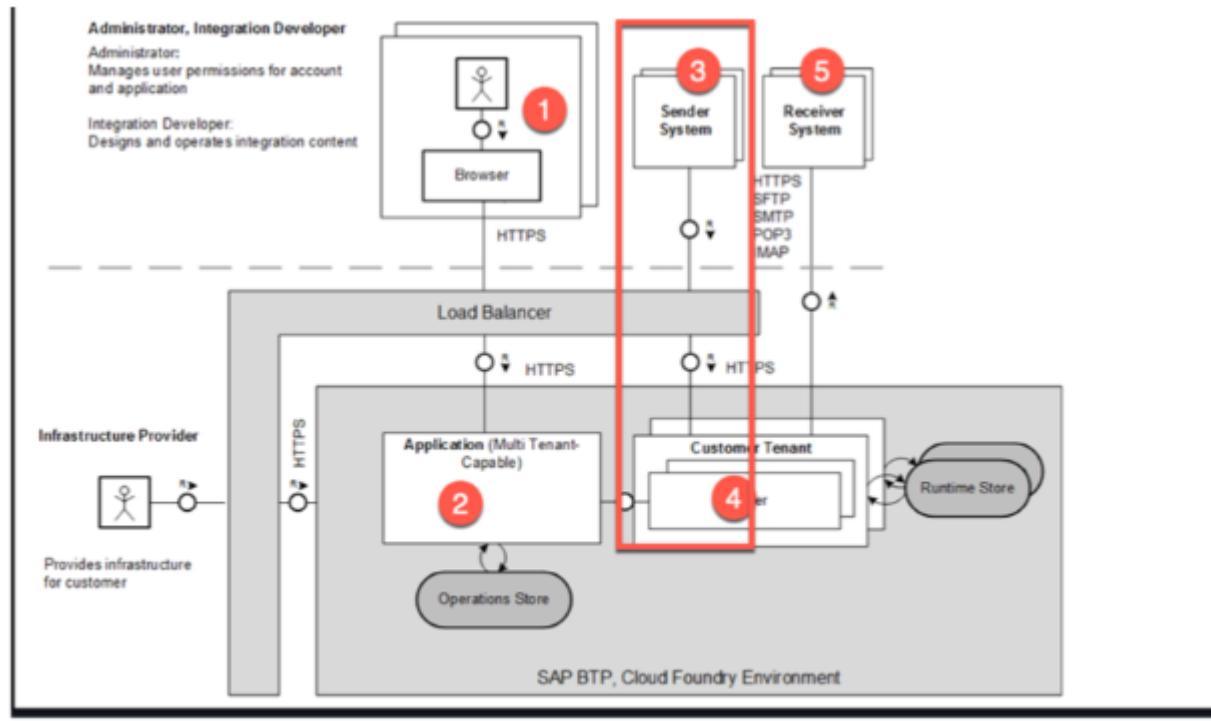
Data Store Name:	DataStore_sdlfiasjfis	Name must be unique
Visibility:	Global	
Entry ID:	#{property.CustomerID}	Simple Expression Language
Retention Threshold for Alerting (in d):	2	
Expiration Period (in d):	3	
Encrypt Stored Message:	<input checked="" type="checkbox"/>	
Overwrite Existing Message:	<input checked="" type="checkbox"/>	Overwrite existing message to only store unique customer IDs
Include Message Headers:	<input type="checkbox"/>	

For an inbound HTTP endpoint in SAP Cloud Integration that will be called by a server-to-server client, which adapter security option is generally recommended?

- A. Basic Authentication
- B. OAuth 2.0 Client Credentials**
- C. API Key in query string
- D. No Authentication

Using Adapter Inbound Security

- Certificates between sender and load balancer for HTTPS connection
- Sender's authorization validated against Integration flow endpoint



Administrator, Integration Developer

Administrator:

Manages user permissions for account and application

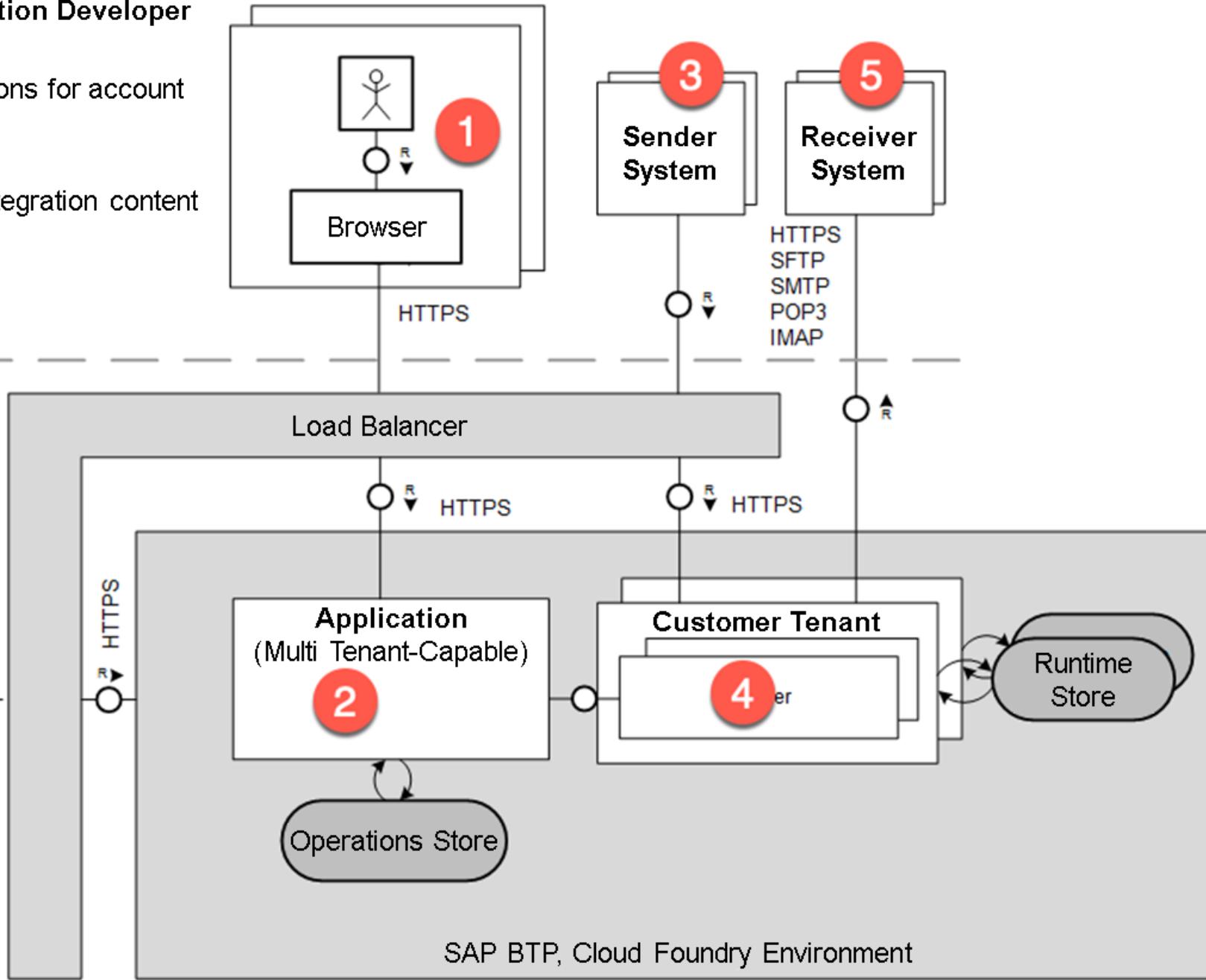
Integration Developer:

Design and operates integration content

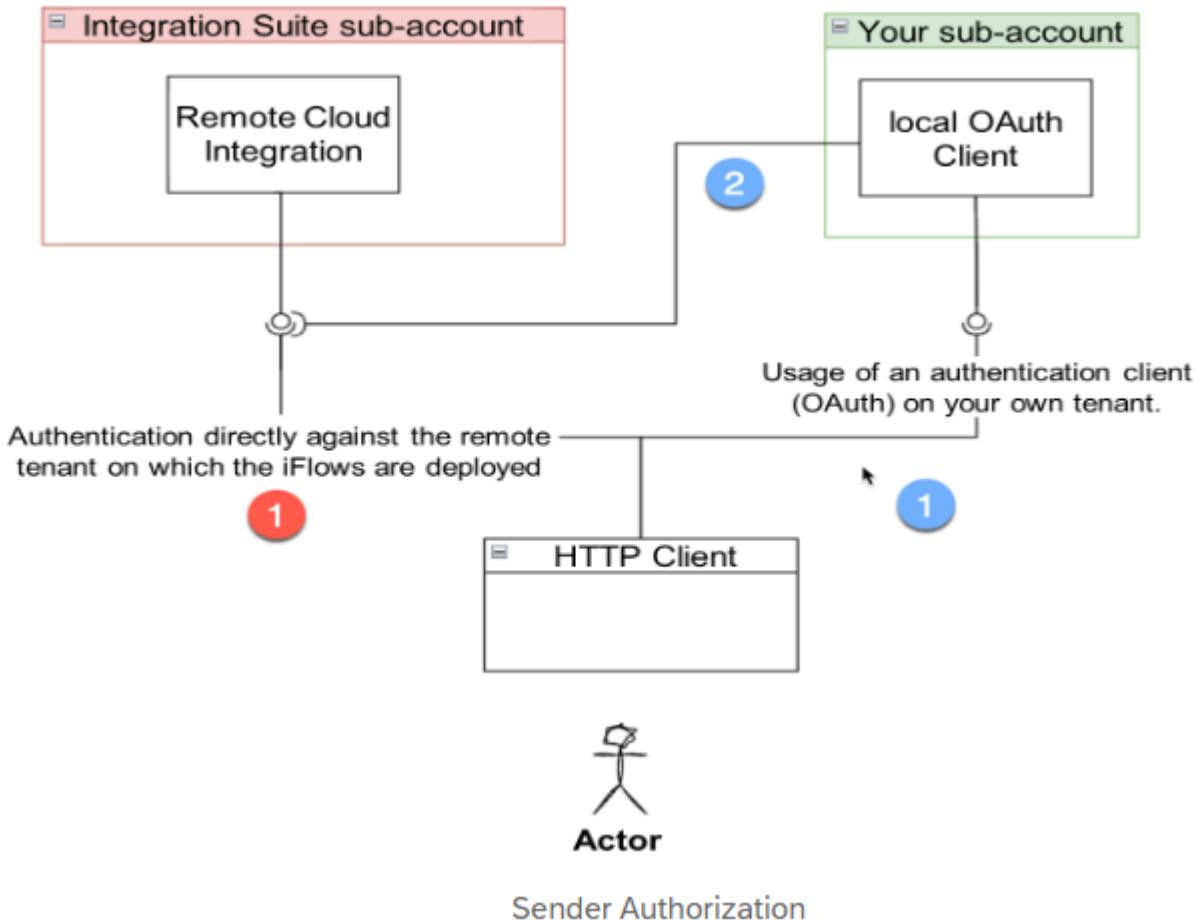
Infrastructure Provider



Provides infrastructure for customer



Authorization of sender



Authentication against remote endpoint

- Assign user role [ESBMessaging.send](#)
- Not recommended for production use

Authentication (OAuth) client on your own Tenant

- Set up Process Integration Runtime instance
- Supports
 - Authorization code
 - Client credentials
 - Password
 - Refresh Token
 - SAML2 Bearer
 - JWT Bearer

Usage of an Authentication (OAuth) Client on your own Tenant

The method of directly calling an integration flow via the role-based approach shown uses personalized users and basic authentication, which are not suitable for productive purposes. For better authentication methods, we need to use a self-configured OAuth2.0 client that can be created on our own subaccount.

To accomplish this, we need to set up a Process Integration Runtime instance on our subaccount, and associate it with the integration flow plan. This instance can then be customized with various client credentials. These correspond to No. 1 and No. 2, marked in blue in the picture above.

You can choose the following grant-types:

- Authorization Code
- Client Credentials
- Password
- Refresh Token
- SAML2 Bearer
- JWT Bearer

Selection of grant types when configuring the local *Process integration Runtime* instance.

New Instance or Subscription

Configure instance parameters. ⓘ

Form JSON

Roles: ⓘ ESBMessaging.send

Grant-types: ⓘ

Client Credentials x

Authorization Code

Client Credentials

Password

Refresh Token

SAML2 Bearer

JWT Bearer

In API Management, which policy type is used to limit the rate of API requests to prevent sudden traffic bursts that could overload backend systems?

- A. CORS
- B. Spike Arrest**
- C. Access Control
- D. Verify API Key

A developer is tasked with exposing an OData service from SAP S/4HANA Cloud through SAP API Management. Which sequence of components would they configure to make the API available for consumption by external partners?

- A. Create API Product → Create API Proxy → Configure API Provider → Add Policies
- B. Configure API Provider → Create API Proxy → Apply Policies → Create API Product**
- c. Configure API Provider → Apply Policies → Create API Proxy → Create API Product
- D. Create API Proxy → Apply Policies → Configure API Provider → Create API Product

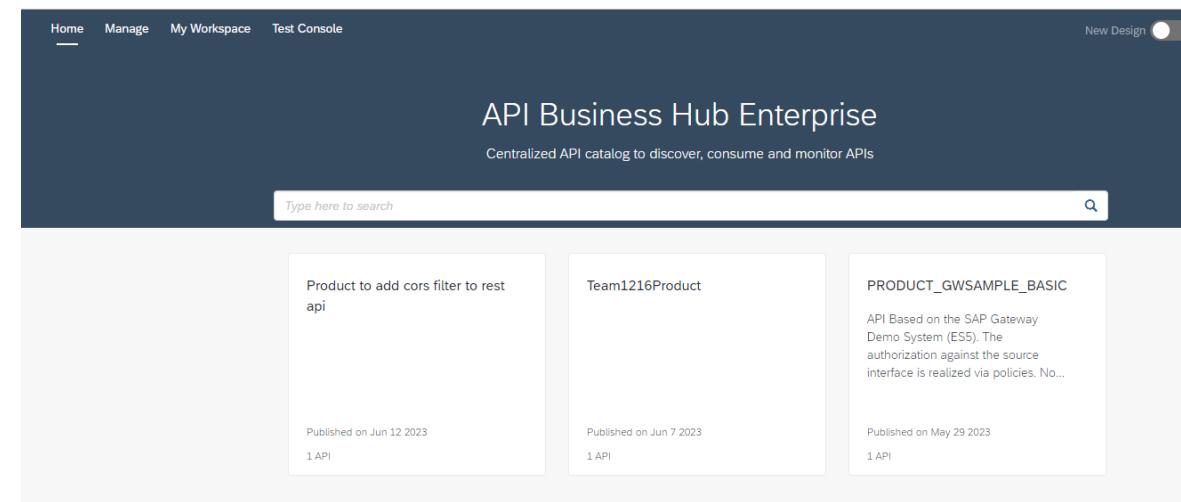
You have multiple API Proxies grouped together for a subscription-based service offering. The goal is to allow consumers to subscribe once and gain access to all related APIs in the package. Which component in SAP API Management should you use to achieve this grouping?

- A. API Provider
- B. API Product**
- C. API Portal
- D. API Policy

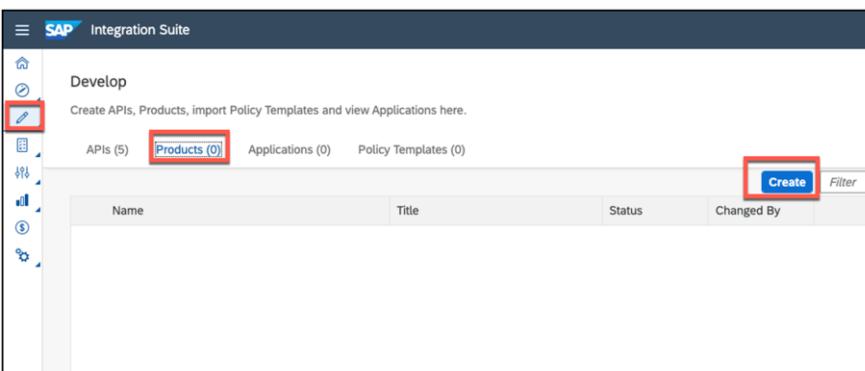
Creating a Product

- Products are artifacts that appear in the SAP API Business Hub Enterprise Portal
- Bundle and publish one or more API (proxies) as a Product for consumption

- Role Collections
 - AuthGroup.API.Admin
 - AuthGroup.API.ApplicationDeveloper



Key Summary Points – Unit 3



This screenshot shows the 'Create Product' dialog for 'P_GWSAMPLE_BASIC_v1'. The 'Overview' tab is selected, indicated by a red box. The product details are as follows:

- Name: P_GWSAMPLE_BASIC_v1
- Title: P_GWSAMPLE_BASIC_v1
- Quota: Count(in numbers)
- Requests Every: Interval(in numbers) -select-
- Scope: (empty)
- Description: (rich text editor)

An API based on the Enterprise Procurement Model (EPM). Authentication is done via policies. No additional authentication required.

This screenshot shows the 'Add APIs' dialog. The 'APIs (0)' tab is selected, indicated by a red box. An 'Add' button is highlighted with a red box. The list of APIs includes:

API Name	API State
API_PURCHASEORDER_PROCESS	Deployed
API_RMTSAMPLEFLIGHT_v1	Deployed
GWSAMPLE_BASIC_v1	Deployed
HelloWorldAPI	Deployed
po_v1	Deployed

The 'GWSAMPLE_BASIC_v1' row is highlighted with a red box. At the bottom, there are 'OK' and 'Cancel' buttons.

Key Summary Points – Unit 3

Q8. Where can you download standardized, reusable policy templates?

- A SAP API Business Hub Enterprise
- B Enterprise Hub for APIs
- C SAP Business Accelerator Hub



Correct

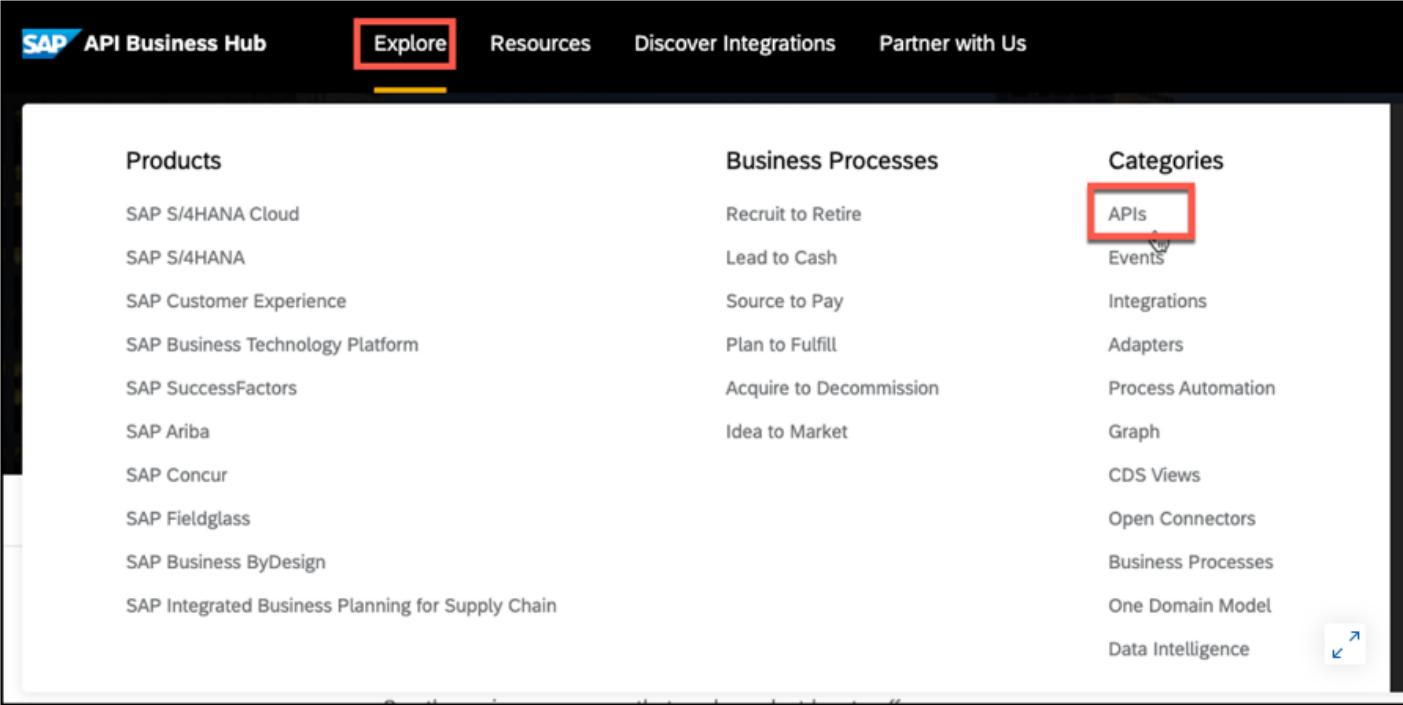
Incorrect. You can you download standardized, reusable policy templates from the SAP Business Accelerator Hub.

Key Summary Points – Unit 3

Use predefined policies

There are predefined sets of policies for specific applications. These can be found in the SAP Business Accelerator Hub.

Navigate to <https://api.sap.com/>  to Explore → APIs.



The screenshot shows the SAP API Business Hub interface. The top navigation bar includes links for SAP API Business Hub, Explore (which is highlighted with a red box), Resources, Discover Integrations, and Partner with Us. Below the navigation is a main content area divided into three columns: Products, Business Processes, and Categories. The Products column lists various SAP products. The Business Processes column lists several business processes. The Categories column lists various categories, with 'APIs' highlighted by a red box. A mouse cursor is hovering over the 'Events' link in the Categories section. At the bottom right of the content area, there is a small navigation icon consisting of two arrows pointing diagonally.

Products	Business Processes	Categories
SAP S/4HANA Cloud	Recruit to Retire	APIs
SAP S/4HANA	Lead to Cash	Events
SAP Customer Experience	Source to Pay	Integrations
SAP Business Technology Platform	Plan to Fulfill	Adapters
SAP SuccessFactors	Acquire to Decommission	Process Automation
SAP Ariba	Idea to Market	Graph
SAP Concur		CDS Views
SAP Fieldglass		Open Connectors
SAP Business ByDesign		Business Processes
SAP Integrated Business Planning for Supply Chain		One Domain Model
		Data Intelligence

Which role collection must be assigned to a user who needs to discover products, register an application, and subscribe to APIs in API Business Hub Enterprise?

- A. AuthGroup.API.ApplicationDeveloper
- B. APIPortal.Administrator
- C. AuthGroup.IntegrationDeveloper
- D. APIPortal.Service.CatalogIntegration

Key Summary Points – Unit 3

Q9. Which Role Collections do you need to use the API Business Hub Enterprise?

A AuthGroupAPIADMINDesigner,AuthGroupAdministrator

AuthGroup.API.Admin, AuthGroup.API.ApplicationDeveloper

C AuthgroupHeadofManager,AuthgroupChildhoodCaseManager



Correct

Correct. To use the API Business Hub Enterprise you need the Role Collections AuthGroup.API.Admin, and AuthGroup.API.ApplicationDeveloper.

In SAP Integration Suite – API Management, what is the primary purpose of an API Provider?

- A. Define connectivity details to a backend system that API Proxies will target
- B. Group multiple API Proxies for subscription and monetization
- C. Apply runtime policies like Quota and Spike Arrest to requests
- D. Expose consumer-facing endpoints for clients to call

Components of SAP API Management

- API Provider
 - Concept in API Management that defines connection details for existing services
- API (Proxy)
 - Managed facades for existing services (sits in front of the existing service)
 - Applications connect to API (proxy)
- Policies
 - Provides capabilities to define behavior of an API (proxy)
- Product
 - Bundle and publish API (proxies) as a Product for consumption
- Application
 - Consumes the Product (bundle of API proxies) using api key and secret

In SAP Integration Suite – API Management, where do you start to create a new API Provider?

- A. API Portal → Configure → API Providers → Create
- B. Developer Portal → APIs → New Provider
- C. API Business Hub Enterprise → Products → Add Provider
- D. Integration Monitoring → Backends → Register

Demo: API Provider (5 different sources)

- Open Connectors
- Through Cloud Connector to SAP On-Premise backends
- Cloud Integration
- APIs from internet
- SAP Business Accelerator Hub (API Business Hub)

Overview Connection Catalog Service Settings

Type: *①

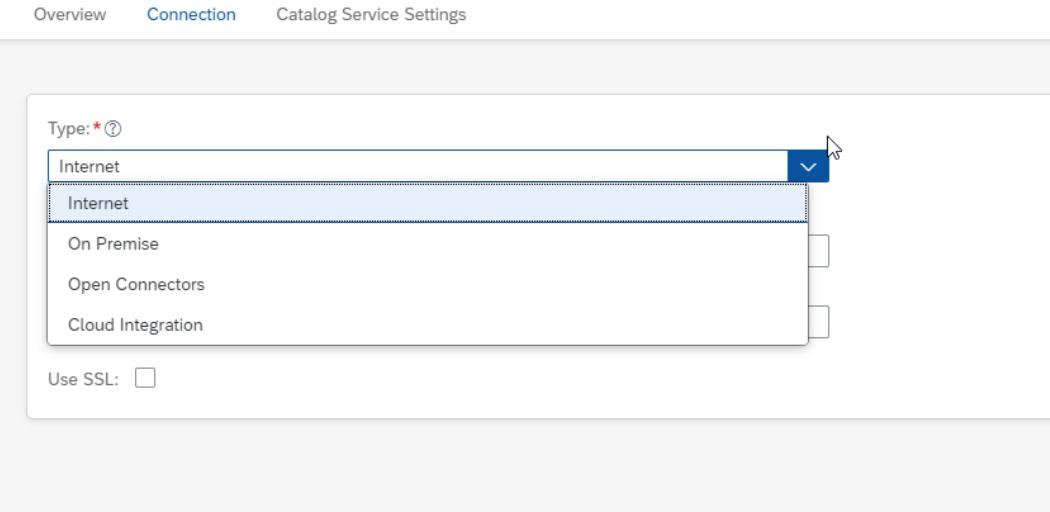
Internet

On Premise

Open Connectors

Cloud Integration

Use SSL:



Overview **Connection** Catalog Service Settings

Type: *①

On Premise

Host: *②

Port: *②

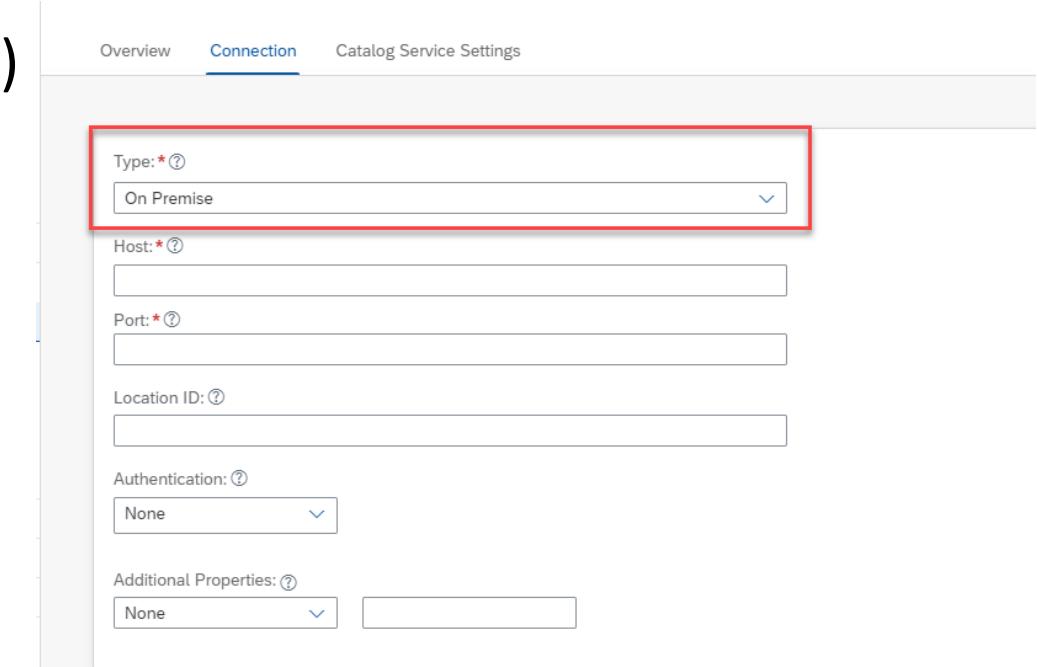
Location ID: ②

Authentication: ②

None

Additional Properties: ②

None



After entering host details and credentials while creating an API Provider, how can you validate connectivity from the UI before building proxies?

- A. Use the Test Connection action in the API Provider
- B. Deploy any API Proxy to the dev environment
- C. Create a Policy Template and run a dry run
- D. Publish a Product to API Business Hub Enterprise

Key Summary Points – Unit 3

Summary

An API provider encapsulates access to APIs from various sources. More than 260 third-party REST-based APIs are connected through the Open Connector. SAP backend systems such as SAP S/4HANA On-Prem or ECC/PI/PO can be connected through the Cloud Connector. SOAP APIs can also be made available through the Cloud Integration. Ultimately, almost all APIs can be connected. The procedure for connecting a foreign API is wizard-controlled.

The screenshot shows the SAP Integration Suite API Portal interface. The top navigation bar includes the SAP logo, 'Integration Suite', and 'API Portal'. Below the navigation, the page title is 'SAPGatewayDemoSystemES5_Provider'. The main content area has tabs for 'Overview', 'Connection', and 'Catalog Service Settings'. The 'Connection' tab is active, showing fields for 'Path Prefix' (/sap/opu/odata), 'Service Collection URL' (/WFND/CATALOGSERVICE/ServiceCollection), and 'Catalog URL' (<http://sapes5.sapdevcenter.com:443/sap/opu/odata/IWFND/CATALOGSERVICE/ServiceCollection>). Authentication type is set to 'BASIC'. Under 'Username:', it shows 'P2005722030'. Under 'Password:', it shows '*****'. A 'Test Connection' button is located at the top right of the connection form.

The screenshot shows the SAP Integration Suite API Portal interface, specifically the 'Connection' tab for 'SAPGatewayDemoSystemES5_Provider'. At the top, the page title is 'SAPGatewayDemoSystemES5_Provider'. Below it, there are tabs for 'Overview', 'Connection', and 'Catalog Service Settings', with 'Connection' being the active tab. A success message is displayed: 'Connection to the system was successful with response code : 200; Message : OK'. The connection details are identical to the screenshot on the left, including the path prefix, service collection URL, catalog URL, authentication type (BASIC), and user credentials (P2005722030 and *****). A 'Trust All' checkbox is present but unchecked.

You want to expose an SAP S/4HANA Cloud OData service through an API Proxy. What is the recommended way to point the proxy to the backend?

- A. Select an existing API Provider and browse the service, then generate the target from it
- B. Type the backend host directly into a policy step
- C. Create a Key Value Map with the host and port and leave the target empty
- D. Upload a CSV file containing the service endpoints

Key Summary Points – Unit 3

Create API

Select: API Provider API Proxy URL

API Provider: * SAPGatewayDemoSystemES5_Provider Link API Provider

URL *

API Details

Name: *

Title: *

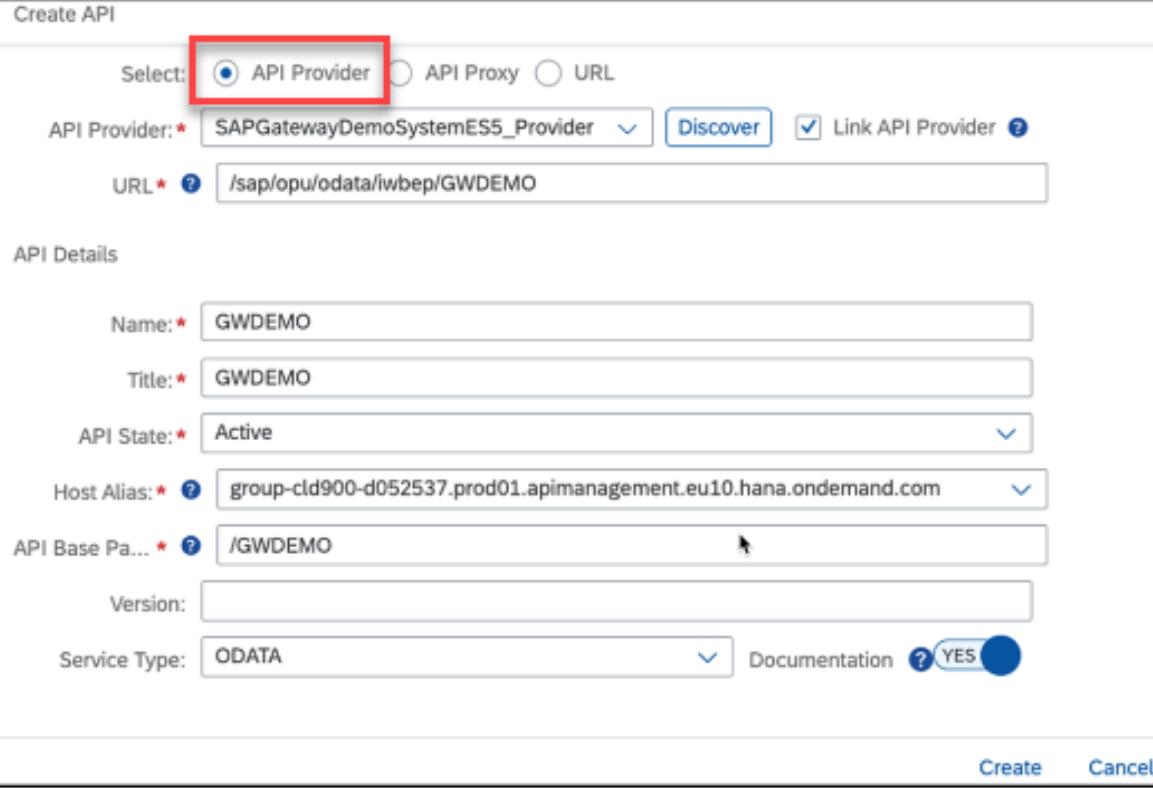
API State: *

Host Alias: *

API Base Pa... *

Version:

Service Type: Documentation YES



When you finish creating this API (Proxy), it has to be deployed so that it can be used. After that, the API (proxy) is ready for testing. The service type is automatically defined. In this case, it is OData.

Demo: API Provider

Field Name	Input
Type	Internet
Host	sapes5.sapdevcenter.com
Port	443
Use SSL	Checked
Path Prefix	/sap/opu/odata
Service Collection URL	/IWFND/CATALOGSERVICE/ServiceCollection
Authentication Type	Basic
Username	<i>Credentials only used to create API Provider</i>
Password	<i>Not for the actual call of API</i>

Demo: API Provider (5 different sources)

- Open Connectors
- Through Cloud Connector to SAP On-Premise backends
- Cloud Integration
- APIs from internet
- SAP Business Accelerator Hub (API Business Hub)

Overview Connection Catalog Service Settings

Type: *①

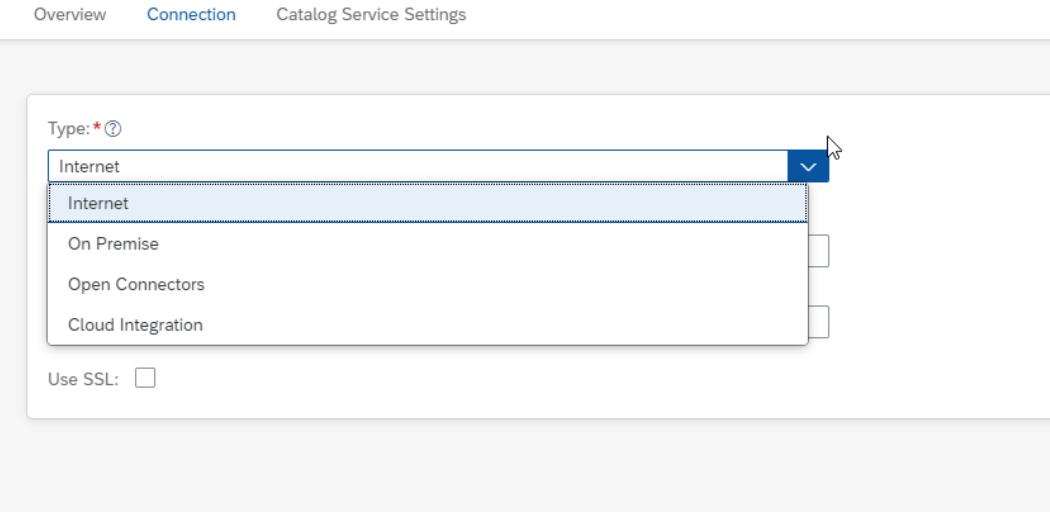
Internet

On Premise

Open Connectors

Cloud Integration

Use SSL:



Overview **Connection** Catalog Service Settings

Type: *①

On Premise

Host: *②

Port: *②

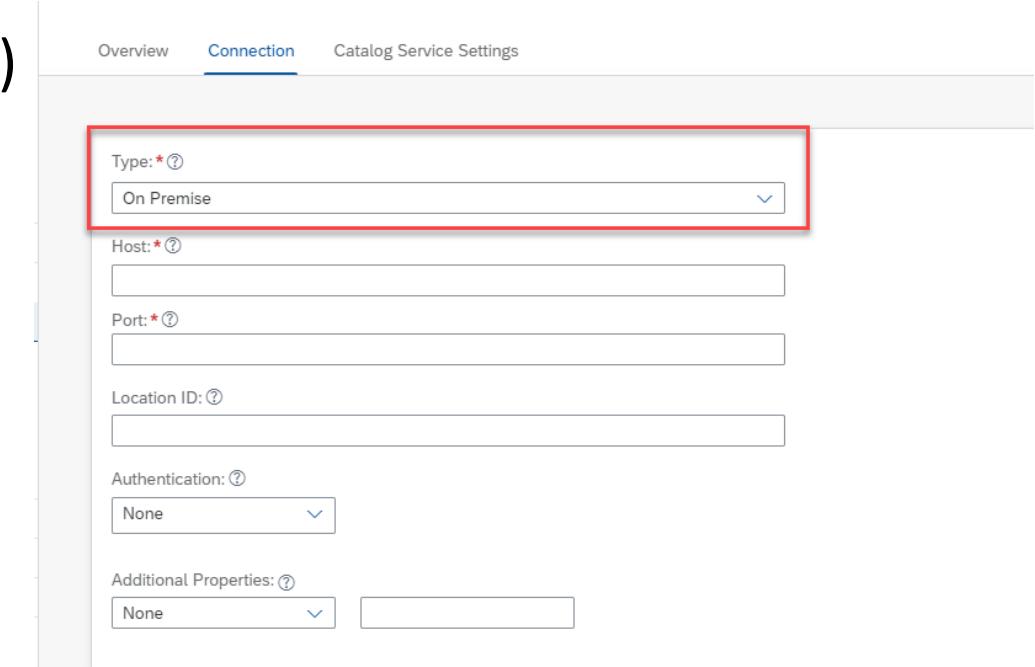
Location ID: ②

Authentication: ②

None

Additional Properties: ②

None



In SAP Integration Suite – API Management, when you create an API proxy using the URL option in the Create API wizard, which service type is supported?

- A. REST
- B. SFTP
- C. OData
- D. GraphQL

Key Summary Points – Unit 3

In this case, you must enter the data manually (marked). The Service Type can only be REST or SOAP.

Create API

Select: API Provider API Proxy URL

URL * https://sapes5.sapdevcenter.com/sap/opu/odata/fwbep/GWSAMPLE_BASIC

API Details

Name: GWSAMPLE_BASIC_URL

Title: GWSAMPLE_BASIC_URL

API State: Active

Host Alias: group-cld900-d052537.prod01.apimanagement.eu10.hana.ondemand.com

API Base Pa... * /GWSAMPLE_BASIC_URL

Version:

Service Type: REST

[Create](#) [Cancel](#)

Editing APIs

The screenshot shows the SAP API Management interface for editing APIs. The top navigation bar includes 'View API' (with a back arrow), 'Transport', 'Policies', 'Copy', 'Edit', and a 'More' option. The main title is 'GWSAMPLE_BASIC' with a status icon indicating 'Status: Deployed' and a proxy URL of https://quovadis.test.apimanagement.eu10.hana.ondemand.com:443/GWSAMPLE_BASIC. Below the title, there are four tabs numbered 1 through 4: 'Overview' (selected), 'Proxy EndPoint', 'Target EndPoint', and 'Resources'. The 'Overview' section displays the following details:

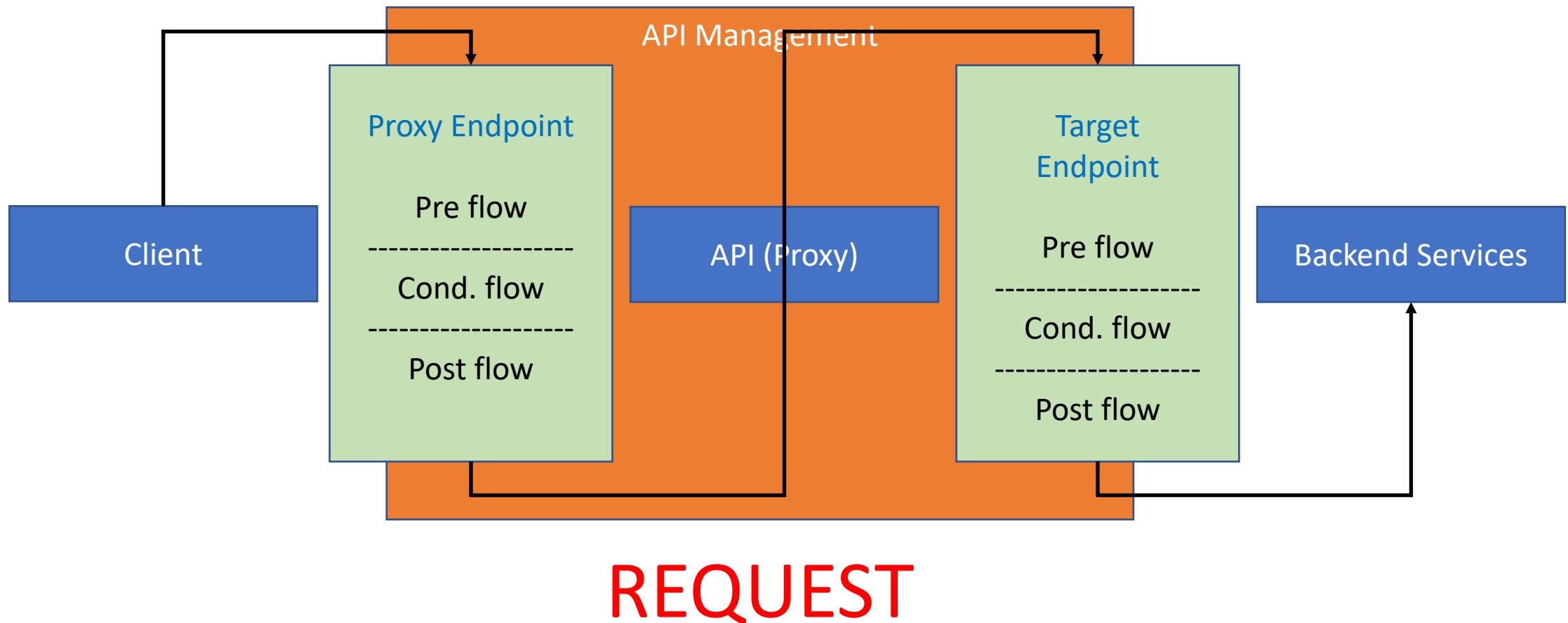
- Title: GWSAMPLE_BASIC
- Host Alias: quovadis.test.apimanagement.eu10.hana.ondemand.com
- API Base Path: /GWSAMPLE_BASIC
- API State: Active
- Description: (empty)

To the right, two cards provide summary statistics: 'Calls(05/01/2023 - 05/29/2023)' at 3.5k and 'API Health' with a green bar chart showing 3487 calls and 0 errors.

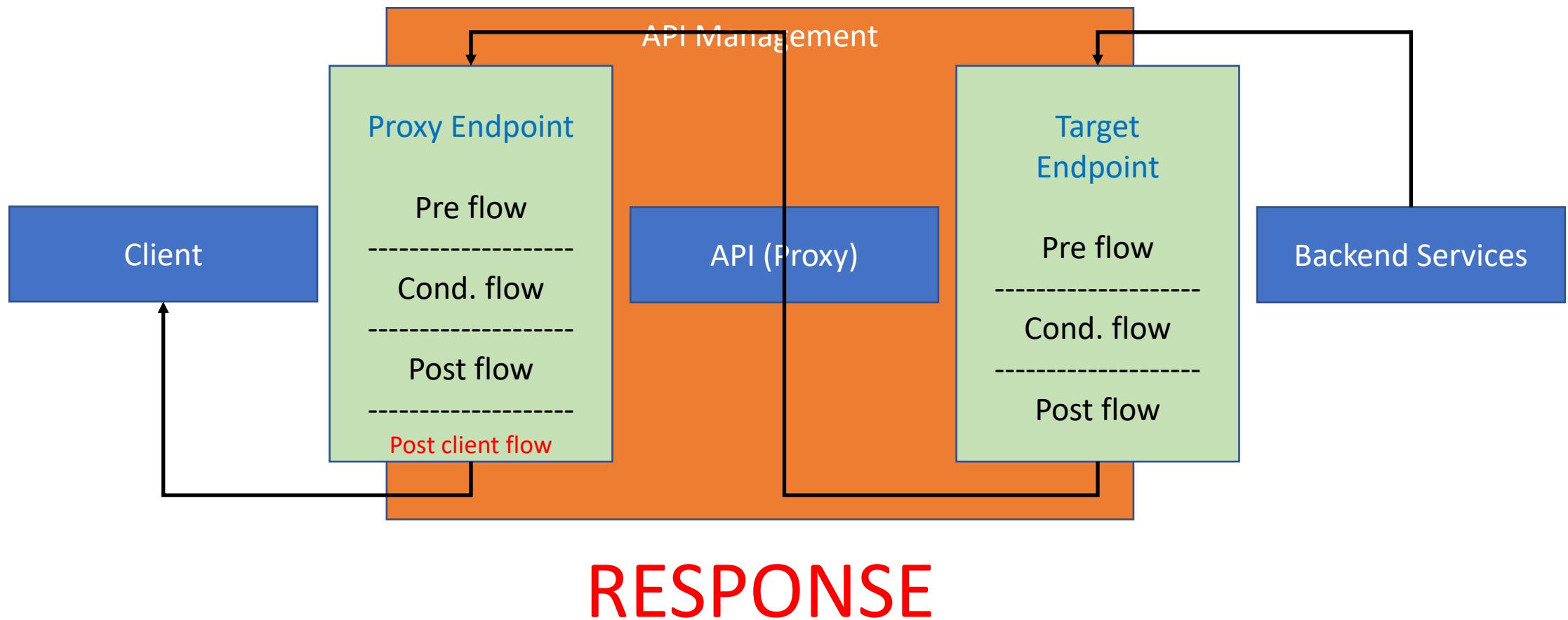
In SAP API Management, what is the role of the target endpoint in an API proxy?

- A. The target endpoint defines the backend service (URL) where requests are forwarded
- B. The target endpoint is used only to apply API policies
- C. The target endpoint is the URL exposed to API consumers
- D. The target endpoint manages user roles and authorizations

Flows – Where should I apply my policies ?



Flows – Where should I apply my policies ?



Key Summary Points – Unit 3

Q9. Which Role Collections do you need to use the API Business Hub Enterprise?

A AuthGroupAPIADMINDesigner,AuthGroupAdministrator

 AuthGroup.API.Admin, AuthGroup.API.ApplicationDeveloper

C AuthgroupHeadofManager,AuthgroupChildhoodCaseManager



Correct

Correct. To use the API Business Hub Enterprise you need the Role Collections AuthGroup.API.Admin, and AuthGroup.API.ApplicationDeveloper.

Key Summary Points – Unit 3

Q10. What are the reasons for using policies in API management?



Access Control



Identity Management



Data Management



Correct

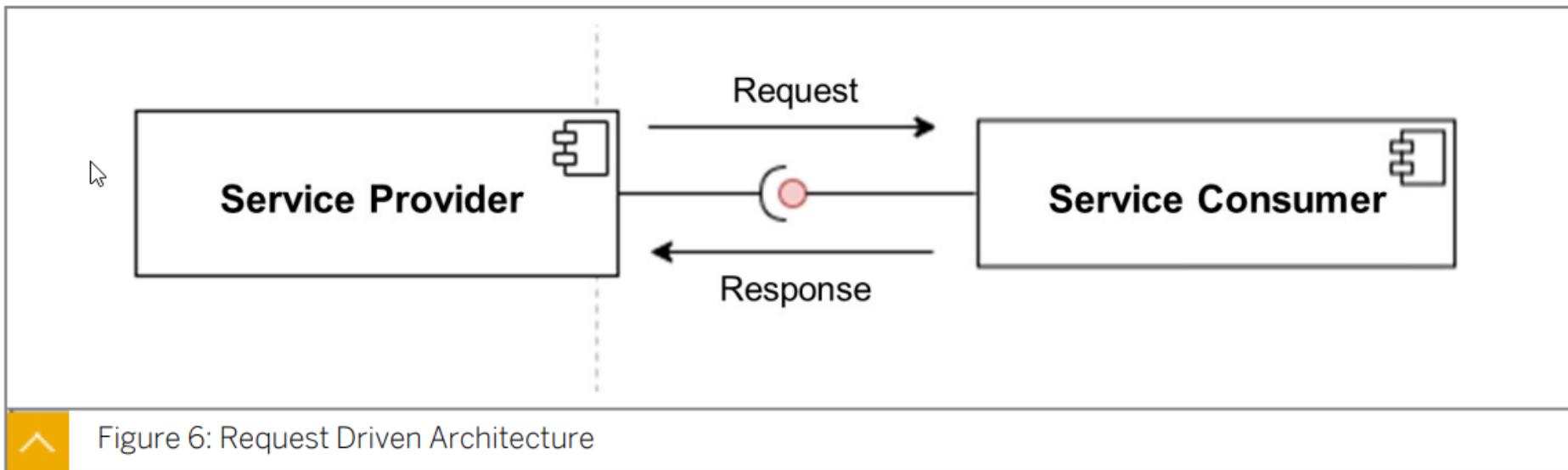
Correct. The reason for using policies in API management is Access Control.

In Event-Driven Architecture, what is the key difference between the pull and push variants of event consumption?

- A. The pull variant requires consumers to actively fetch events from the broker, while the push variant delivers events directly to consumers as they occur
- B. The pull variant delivers events in real-time, while the push variant requires scheduled polling
- C. The pull variant uses durable subscriptions, while the push variant only supports temporary queues
- D. The pull variant is more secure, while the push variant cannot be secured with authentication

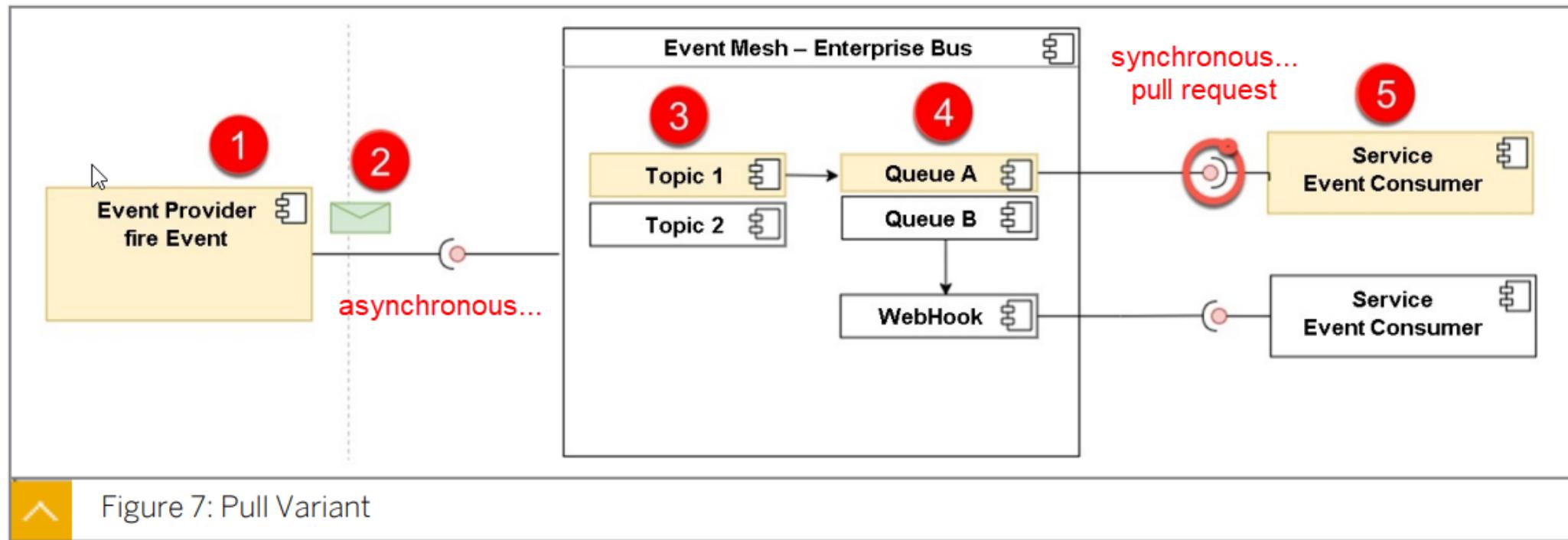
Key Summary Points – Unit 1

- Request driven architecture (**Synchronous**)
- Event driven architecture (**Synchronous + Asynchronous**)
 - Pull variant, Push variant
- Combination



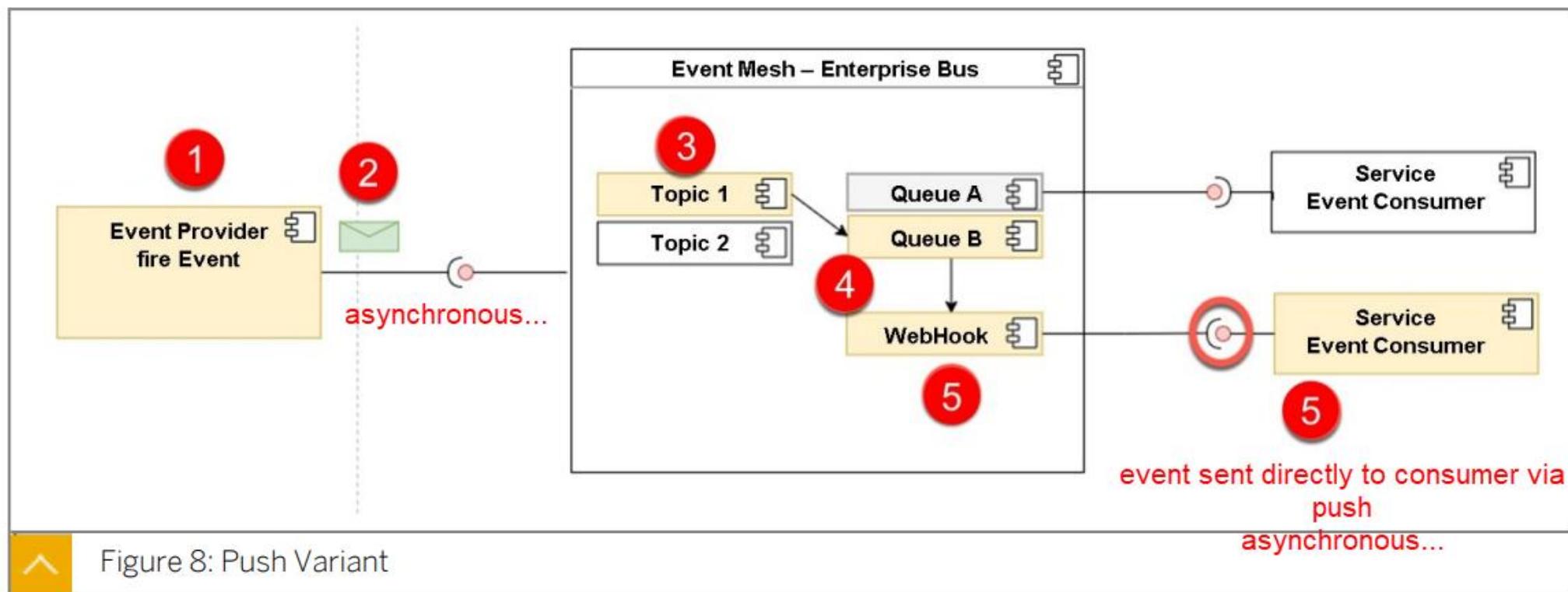
Key Summary Points – Unit 1

Pull Variant

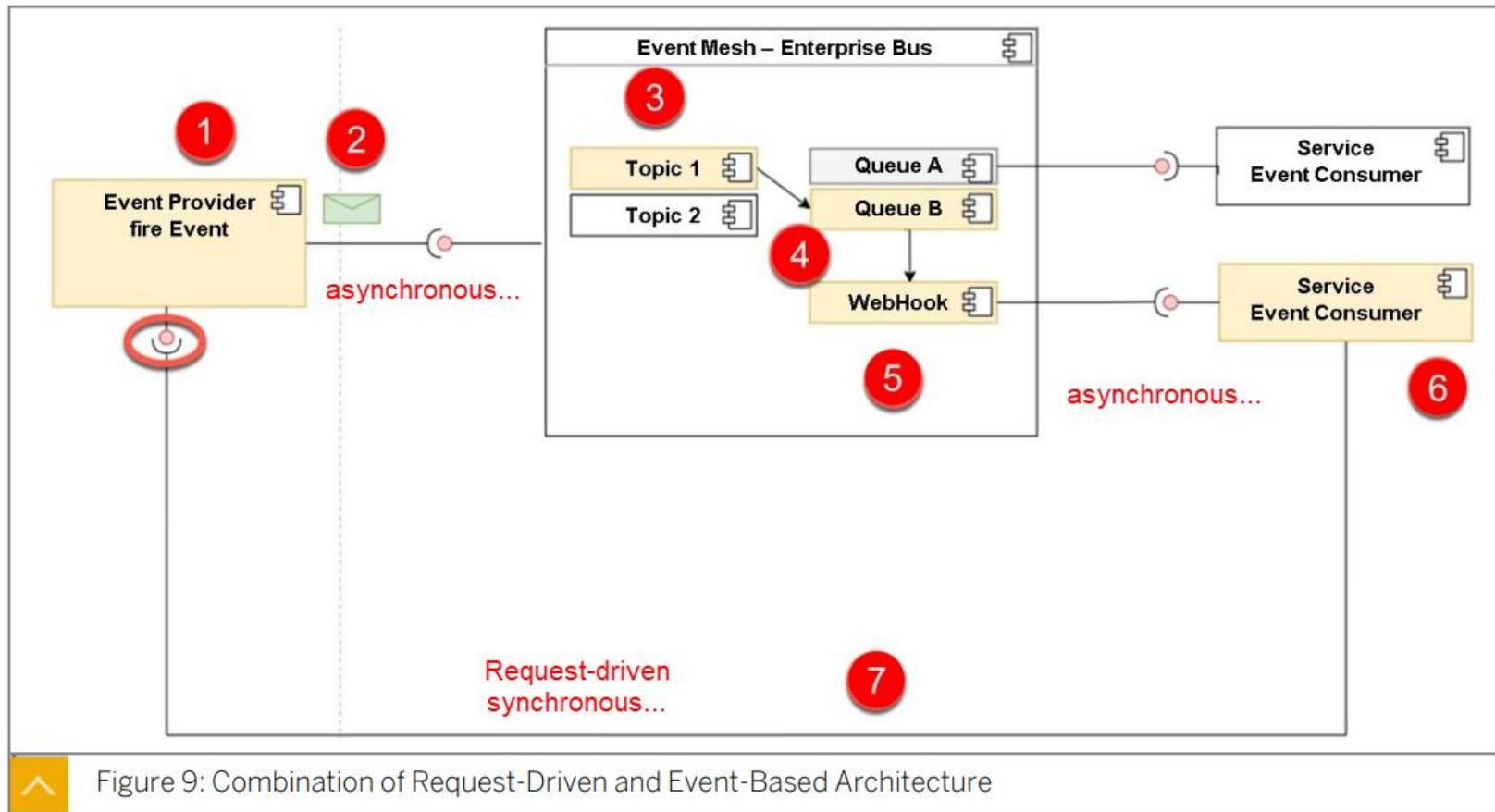


Key Summary Points – Unit 1

Push Variant



Key Summary Points – Unit 1



Which of the following describes the main use cases supported by the SAP Developer Hub?

- A. Serving as the catalog for APIs managed by SAP API Management, providing seamless access and governance
- B. Acting as the central API portal for all APIs exposed to developers, both internal and external, ensuring consistent discovery and management
- C. Functioning as a local API catalog for distributed development teams, promoting collaboration and efficiency
- D. Providing a central repository of event information within the landscape to help developers stay responsive to system events
- E. Being the single source of truth for development tools, ensuring developers always access the latest and most reliable resources



The Developer Hub

-  Serving as the catalog for APIs
-  Acting as the central API portal
-  Functioning as a local catalog
-  Providing a central source of event information
-  Being the single source of truth

As a developer, you want to build applications that consume data from SAP Graph. What are the required steps and role collections that must be configured before you can use Graph?

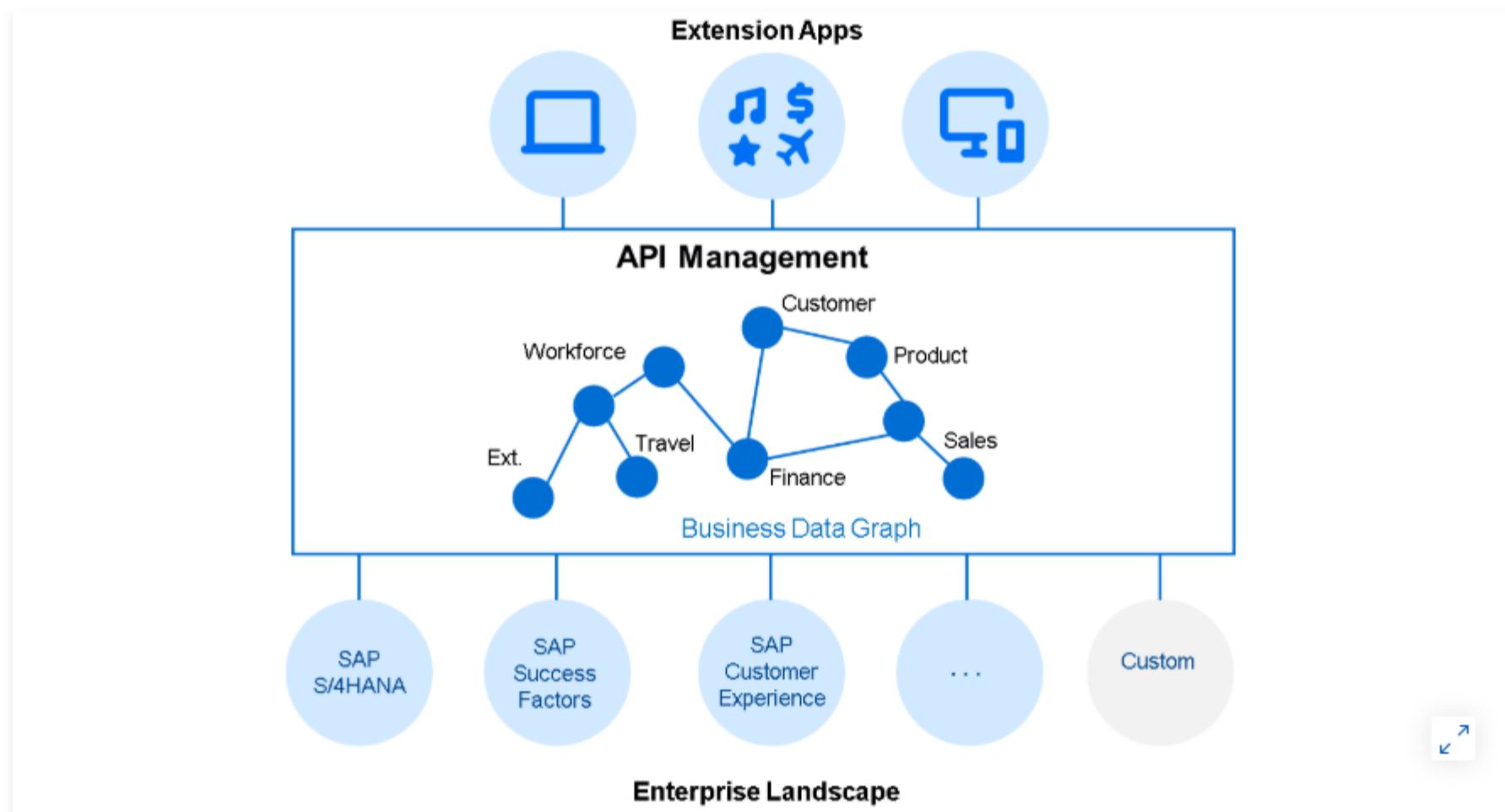
- A. The tenant administrator must configure Graph as a capability in API Management within SAP Integration Suite, assign the role collection Integration_Provisioner to enable capabilities, and then assign the role collection Graph.KeyUser to the developer user.
- B. The tenant administrator must activate Graph in SAP S/4HANA Cloud and assign the role S4HANA_Graph_Admin before Graph APIs can be accessed.
- C. The developer can directly activate SAP Graph from SAP Business Application Studio without requiring any tenant administrator configuration.
- D. The tenant administrator only needs to assign the role collection Graph_Navigator_Viewer; no other role collections are required.

What is the main purpose of SAP Graph in the SAP Business Technology Platform?

- A. To provide a unified API layer that simplifies access to business data from multiple SAP systems
- B. To manage event-driven integration between SAP S/4HANA and external applications
- C. To replicate master data across different SAP systems in real time
- D. To monitor the performance of integration flows in SAP Integration Suite

What is SAP Graph?

SAP Graph is a powerful, single, connected API that simplifies access to business data across the SAP ecosystem. It provides a unified, graph-based API that allows developers to interact with data from multiple SAP systems (such as SAP S/4HANA, SAP SuccessFactors, and more), regardless of where it's stored, in a consistent and intuitive way. Graph introduces curated, semantically connected business data graphs to access all business data through a single API. It accesses the data on your behalf without storing or caching any data itself. You only interact with a simple view of the data. Which is unified across all systems?



In SAP Integration Suite – API Management's API Designer, what does the Generate Server Stub option do?

- A. Generate a skeleton server implementation from the API definition
- B. Generate an API proxy with default policies
- C. Publish the API directly to API Business Hub Enterprise
- D. Convert JSON payloads to XML automatically

Key Summary Points – Unit 3

- API Designer
 - Visualization of openAPI specification is done using swagger UI
 - Swagger UI is an open source JavaScript framework to make APIs tangible

The screenshot shows the Swagger UI interface for creating an API designer. On the left, there's a sidebar with 'Swagger OAS' and 'Version: 1.0.0'. Below it, under 'pet', there's a 'POST /pet' section with a 'Try out' button. At the top right, there's a toolbar with several buttons: 'Import' (1), 'Download' (2), 'Paste' (3), 'Generate Server Stub' (4, highlighted with a red box), 'Save' (5), and 'Cancel'.

```
1  openapi: 3.0.1
2  info:
3    title: Swagger OAS
4    description: This is a sample server Petstore server
5    version: 1.0.0
6  servers:
7    - url: 'http://petstore.swagger.io/v212'
8  paths:
9    /pet:
10   post:
11     tags:
12       - pet
13     summary: Add a new pet to the store
14     operationId: addPet
15     requestBody:
16       description: Pet object that needs to be added to the store
17       content:
18         application/json: {}
19         application/xml: {}
20       required: true
21
```

Key Summary Points – Unit 2

The core capacities are as follows:

Cloud-Integration

Seamless integration of everything and everyone (A2A/B2B) in real time.

API-Management

Make your data and processes available as APIs. Manage the E2E lifecycle.

Integration Assessment

Tool support for ISA-M to define and execute an integration strategy for companies.

Integration Advisor

Accelerate the implementation and maintenance of B2B scenarios through machine learning.

Trading Partner Management

Accelerate onboarding and maintenance of B2B integration scenarios with trading partners.

Open Connectors

Accelerate connectivity to non-SAP applications.

Summary

One divides core capabilities, add-on capabilities, and finally add-on capabilities. The core capabilities are implemented in the Integration Suite. The most important are the API management and the cloud integration.

Key Summary Points – Unit 2

The add-on capacities are as follows:

Master Data Integration

Ensure a consistent view of master data within an integrated intelligent suite and its ecosystem.

SAP Data Intelligence

Extract, transform, and load ETL scenarios for data lakes and data warehouses.

Event Mesh

Event-based integrations with predefined events from SAP applications.

Connectivity

Establish secure connectivity between cloud applications and On-Premise systems.

SAP Graph

Unified API for accessing SAP-managed data that can be used to create new extensions and applications using SAP data.

Alert Notification

Provides a common API for providers to publish alerts and for consumers to subscribe to these alerts.

Cloud Transport Management

Management of software products between accounts in different environments by transporting them over different terms.

Internet of Things

Bring raw sensor data into the context of business objects and use the data in analytical or transactional business applications.

What is the main challenge organizations face when trying to adopt new technologies in response to evolving business and technology landscapes?

- A. Technical debt diverts a significant portion of the technology budget, limiting the ability to adopt new capabilities quickly
- B. The shift to cloud technologies eliminates the need for standardized functions, making it harder to innovate
- C. Changing customer preferences and supply chain disruptions reduce the importance of IT-driven capabilities
- D. The focus on innovation rate and lower switching costs removes the need to maintain organizational agility

Changes to Business Landscape



Rate to business processes innovation increasing in response to global crises



Switching costs declining due to empowered customers being able to select different products and services



Changing customer and employee preferences and needs



Business generating overwhelming volume of data; most are unable to use it effectively

Changes to Technology Landscape



Move from on-premise to cloud changes software from an asset to a service



Broader availability of standardized functionality across business functions



Platform capabilities enabling a “decoupled” architecture to continue innovation in a sustainable manner



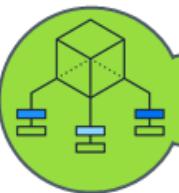
Prevalence and maturity of intelligent technologies (artificial intelligence, machine learning, internet of things, and so on)

Illustrative Model – Dimensions of the Core



Software Stack

The versions of the foundational standard software in use for example, enterprise resource planning (ERP), database, and so on.



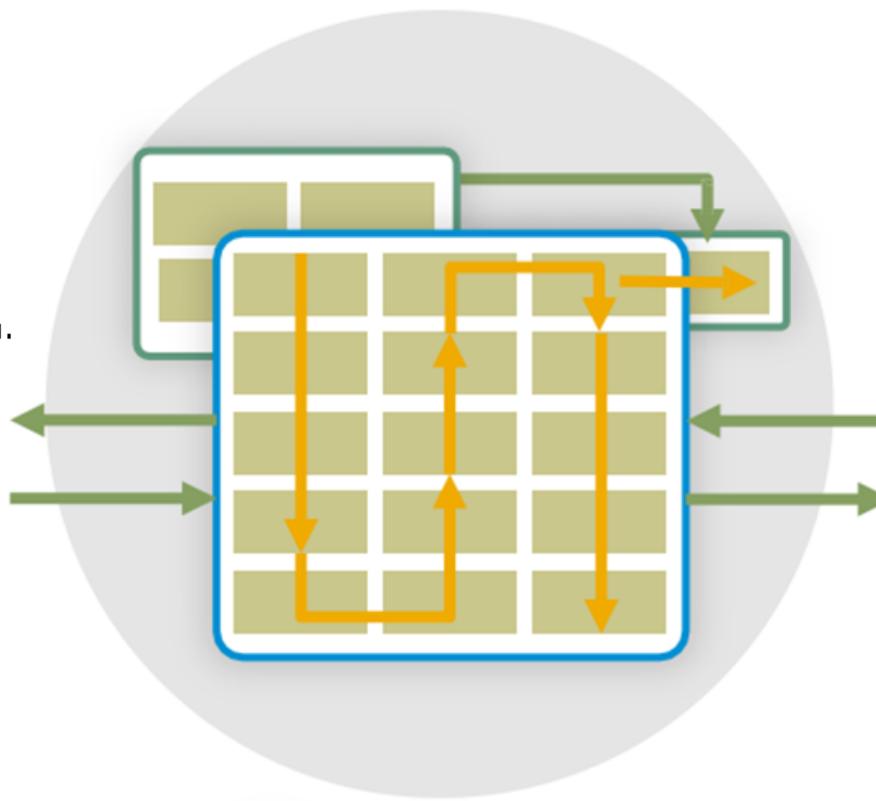
Extensibility

Functionality added to standard software which extends it to address organizational needs that are not met by standard.



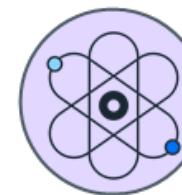
Integrations

Communication between extensions and standard solution as well as communication between solutions.



Processes

The series of actions or steps taken within your system that cover the end-to-end (E2E) experience of delivering an outcome.



Operations

Governance responsible for managing infrastructure, upgrade decisions, extension decisions, and system monitoring and maintenance activities.



Data

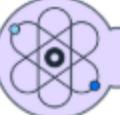
Three types of information in the system:

Configuration Data: Set of static objects that define the organization's structure (for example, company codes, controlling areas).

Master Data: Set of identities and attributes (for example, customers, products).

Transactional Data: Information recorded during usage of your system (for example, a sale, a purchase).

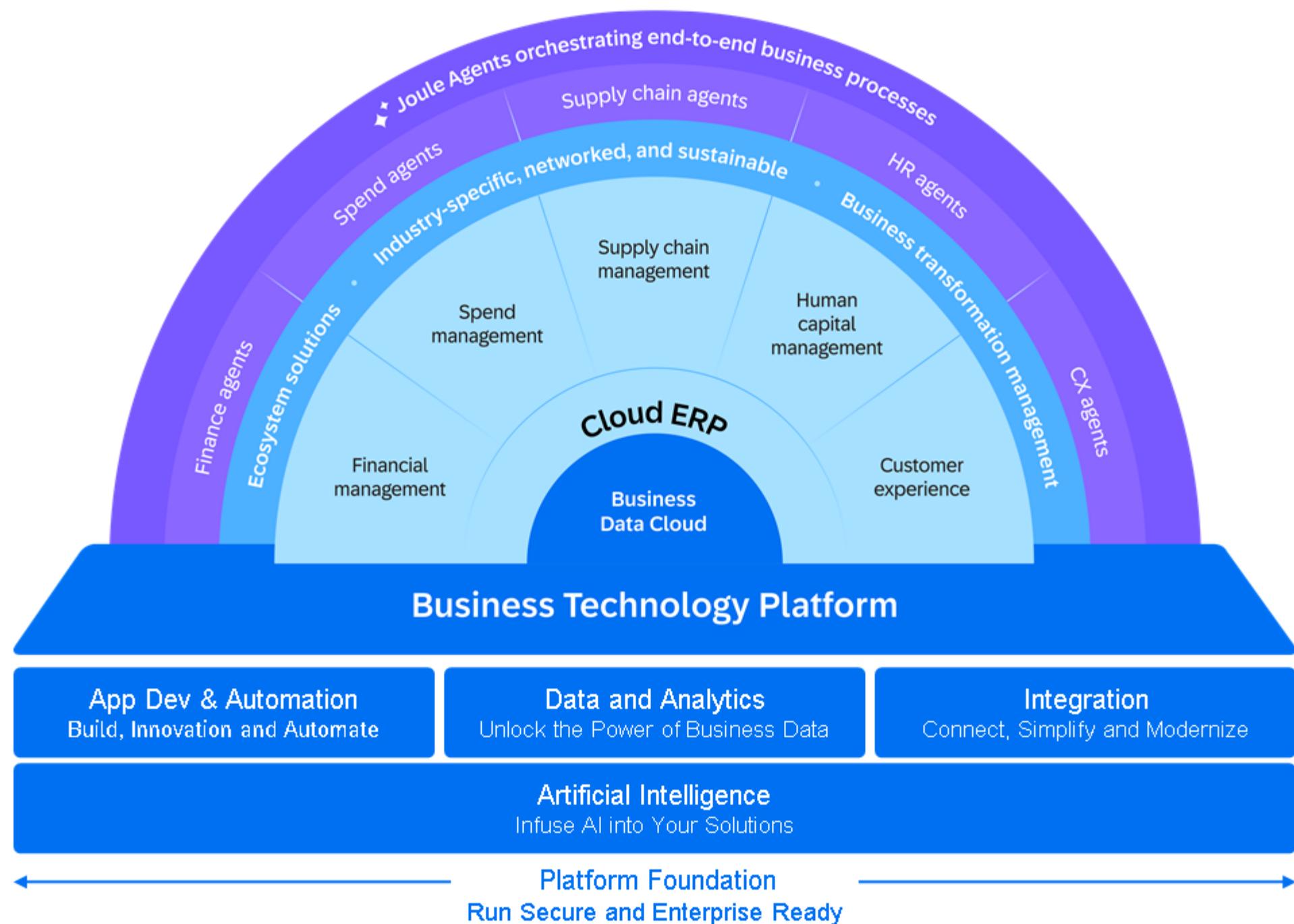
Elements and Criteria for Clean Core

Element of the Core	Criteria for Clean Core
 Software Stack	<ul style="list-style-type: none">• Software version close to the latest release• Software version close to the latest Feature Pack Stack (FPS) and Support Pack Stack (SPS)• Partner solutions clean core compliant
 Extensibility	<ul style="list-style-type: none">• Upgrade-stable extensions following prescribed extensibility model• Only actively-used and well-documented extensions• Adherence to general code quality standards and best practices• No duplication of SAP standard functionality
 Integrations	<ul style="list-style-type: none">• Upgrade stable interfaces• Proper monitoring and error resolution capabilities• Only actively-used and well-documented integration
 Data	<ul style="list-style-type: none">• Complete• Correct• Used and relevant
 Processes	<ul style="list-style-type: none">• No inconsistent or inefficient processes• Leveraging SAP recommended Best Practices
 Operations	<ul style="list-style-type: none">• Day-to-day operations are planned and executed regularly to maintain alignment with the above-mentioned guidelines (for example, security authorizations, integrations, data, and so on)• Opt-in on lifecycle events such as periodic upgrades• Compliance with pre-approved maintenance windows

Tackling the Clean Core is a continuous strategic endeavor

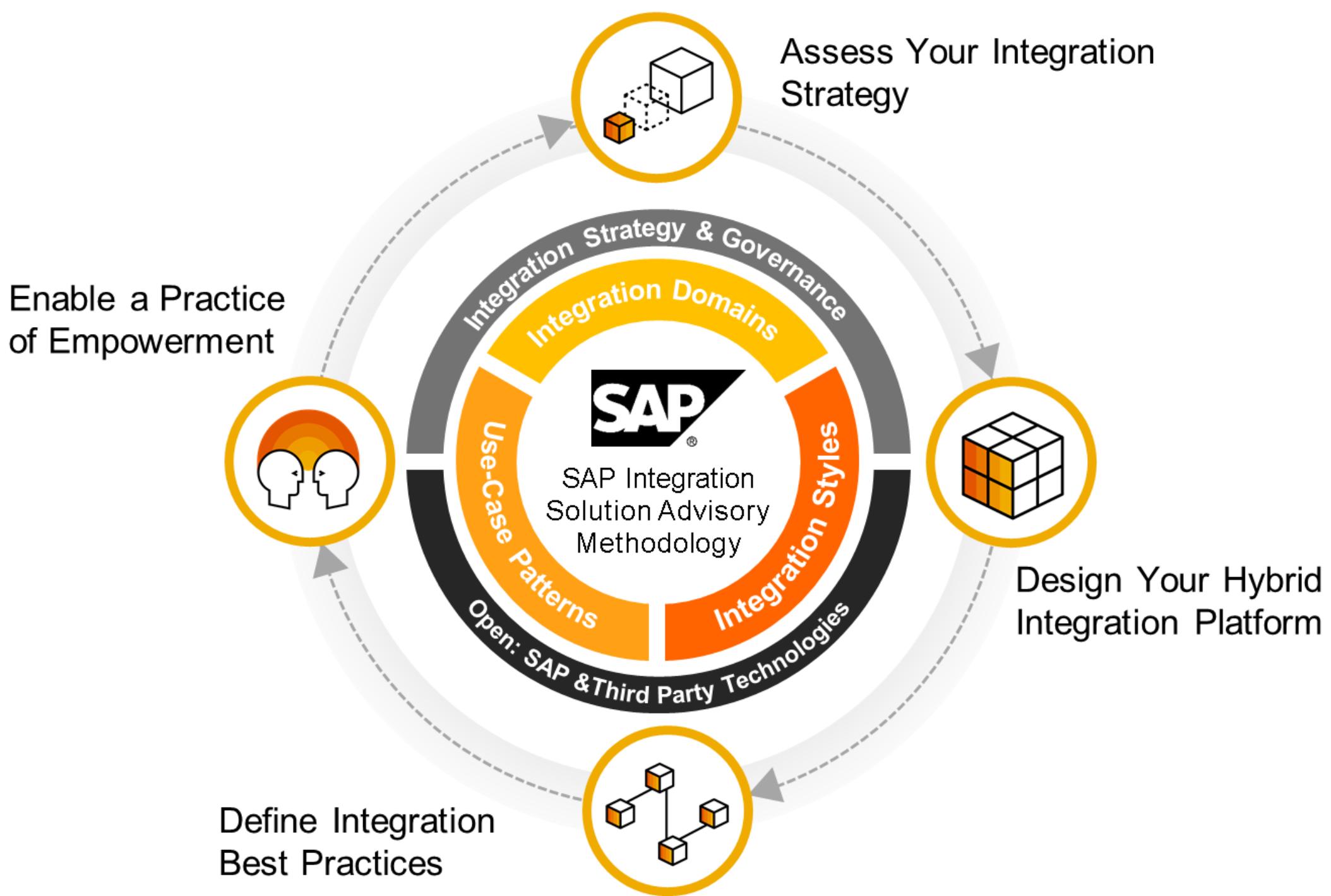
Conclusion: 'CLEAN CORE' is a method aimed at achieving and preserving the cleanliness of an organization's core enterprise management systems to enhance 'maintainability' and reduce the total cost of ownership (TCO). This encompasses activities across software, data, interfaces, processes, and operations.





What is the primary benefit for a global retail chain using Integration Assessment to manage ERP, CRM, WMS, and e-commerce system integrations?

- A. It enables enhanced performance by identifying and resolving bottlenecks, ensures consistent and accurate data across systems, supports compliance, and prepares the integration landscape to scale with business growth
- B. It eliminates the need for centralized integration tools by allowing manual management of integrations across disparate systems
- C. It guarantees compliance with all global regulations automatically without additional governance processes
- D. It removes the necessity for IT teams to maintain and monitor integrations across different platforms



What is the primary advantage of using Data Space Integration for a multinational retailer that wants to unify customer data from CRM, e-commerce, loyalty, and POS systems?

- A. It provides a comprehensive and integrated view of customer data, enabling better decision-making, personalized experiences, and advanced analytics while ensuring data consistency, compliance, and security
- B. It eliminates the need for compliance with data protection regulations such as GDPR and CCPA
- C. It removes the requirement for data harmonization between different systems and formats
- D. It guarantees unlimited system resources so that data volumes no longer affect performance

What is the main benefit of implementing Trading Partner Management in SAP Integration Suite for a global retailer facing fragmented communication and manual errors in order processing?

- A. Standardizes protocols with a centralized hub, automates onboarding, provides self-service portals, and enables order tracking
- B. Eliminates the need for regional compliance requirements
- C. Replaces all suppliers with a single partner to simplify processes
- D. Removes the need to monitor supply chain performance

Which of the following describes key challenges in distributed architectures that require complex solutions?

- A. Diverse transport and messaging protocols leading to integration difficulties
- B. Release management to coordinate updates and version compatibility
- C. Error identification and correction for detecting and resolving issues efficiently
- D. Observability to gain insights into system behavior and performance

Challenges in Distributed Architectures

Due to the heterogeneity of systems, addressing the following challenges requires costly and complex solutions:

- **Diverse transport and messaging protocols:** Integration of various communication methods.
- **Release management:** Coordinating updates and version compatibility.
- **Monitoring:** Ensuring visibility into system performance and health.
- **Error identification and correction:** Detecting and resolving issues efficiently.
- **Latency:** Minimizing delays in communication and processing.
- **Quality of Service (QoS):** Maintaining reliable and consistent system performance.
- **Security:** Protecting data and services from threats.
- **Implementation availability:** Ensuring necessary features are implemented and accessible.
- **Observability:** Providing insights into system behavior and performance.
- **Documentation:** Maintaining clear and comprehensive records of systems and interfaces.