



SAP Business Unleashed Innovation Day

When you connect everything,
you can achieve anything.



Leverage real-time business insights with an event-driven architecture

Greg Carino - BTP Cloud Solution Architect

Agenda



What is Event-Driven Architecture?

SAP's event-driven ecosystem and strategy.

Focus: SAP Integration Suite, Advanced Event Mesh.

SAP solutions for event-driven integration

Demo: Event-driven integration with SAP S/4HANA and SAP Integration Suite, Advanced Event Mesh

Intelligent Enterprise EDA from SAP

Helpful resources

Event-driven architecture



- An **event** is a **significant change in state**.
- **Event source** sends an event to inform of change.
- Message holding event description in encoded format is distributed through an **event broker**.
- **Event consumers** have registered with event broker and are informed of event.
- Events come in different flavors: **notification events** or **data events**.

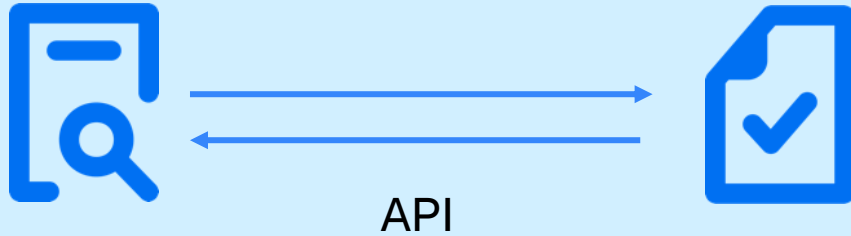


```
{ "type": "sap.s4.beh.product.v1.Product.Changed.v1", "specversion": "1.0", "source": "/default/sap.s4.beh/0000000007", "id": "fa163e0b-4824-1eec-83f7-32dfc754759c", "time": "2023-09-07T08:57:17Z", "datacontenttype": "application/json", "data": { "Product": "160", "ProductType": "FRIP" } }
```

API Architecture vs. Event-Driven Architecture

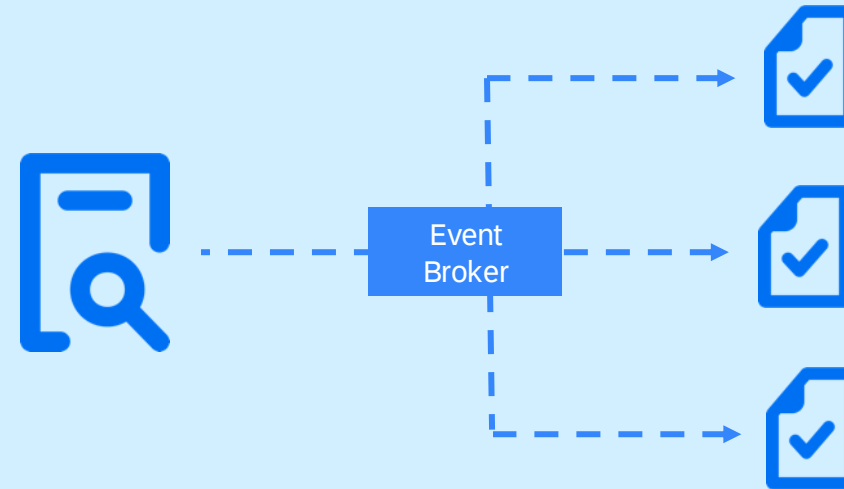


API Architecture



Request and Reply Based
Synchronous

Event-Driven Architecture (EDA)



Push-Based
Asynchronous
Decoupled

SAP Business Suite Event Sources



Business Accelerator Hub

Integrations SAP Build Analytics Transformation

Explore

Events

Explore all events in the SAP Business Accelerator Hub.

Event Objects **Packages**

Showing 1-12 of 21 results < Previous Page 1 of 2

Events Package

SAP Order Management Foundation Business Events

Provides business events for SAP Order Management foundation to trigger follow-on processes in other applications.

1 Event Object

Events Package

SAP Cell and Gene Therapy Orchestration

Orchestrate supply chain to deliver personalized therapies using late stage customization.

13 Event Objects

Events Package

SAP S/4HANA Business Events

Provides the next generation digital events of SAP S/4HANA business objects

152 Event Objects

Events Package

SAP S/4HANA Add-On for SAP Cell and Gene Therapy Orchestration

Provides the business events for SAP S/4HANA Add-On for SAP Cell and Gene Therapy Orchestration

1 Event Object

Events Package

SAP Sales Cloud and SAP Service Cloud Version 2 Business Events

Use SAP Sales Cloud Version 2 to grow revenue and improve customer experience

1 Event Object

Events Package

SAP Intelligent Clinical Supply Management for Planning Event

Exchange clinical study data with external systems

1 Event Object

Purchase Order Events

Inform a remote system about created and changed purchase orders in an SAP S/4HANA system

Overview **Event References** Event Consumption Documents

OPERATIONS

SUB

ce/sap/s4/beh/purchaseorder/v1/PurchaseOrder/ItemChanged/v1

SUB

ce/sap/s4/beh/purchaseorder/v1/PurchaseOrder/ItemCreated/v1

SUB

ce/sap/s4/beh/purchaseorder/v1/PurchaseOrder/ItemChanged/v1

SUB

ce/sap/s4/beh/purchaseorder/v1/PurchaseOrder/ItemCreated/v1

SUB

ce/sap/s4/beh/purchaseorder/v1/PurchaseOrder/ItemBlocked/v1

SUB

ce/sap/s4/beh/purchaseorder/v1/PurchaseOrder/ItemCreated/v1

Operations

SUB

ce/sap/s4/beh/purchaseorder/v1/PurchaseOrder/ItemChanged/v1

Accepts the following message:

sap.s4.beh.purchaseorder.v1.PurchaseOrder.ItemChanged.v1

PurchaseOrder Item Changed

This event is raised when a purchase order item instance has been changed.

Payload > Expand all

Object uid:sap_s4_beh_purchaseorder_v1_PurchaseOrder_ItemChanged_v1

Headers > Expand all

Object

Examples

Payload >

Headers >

SUB

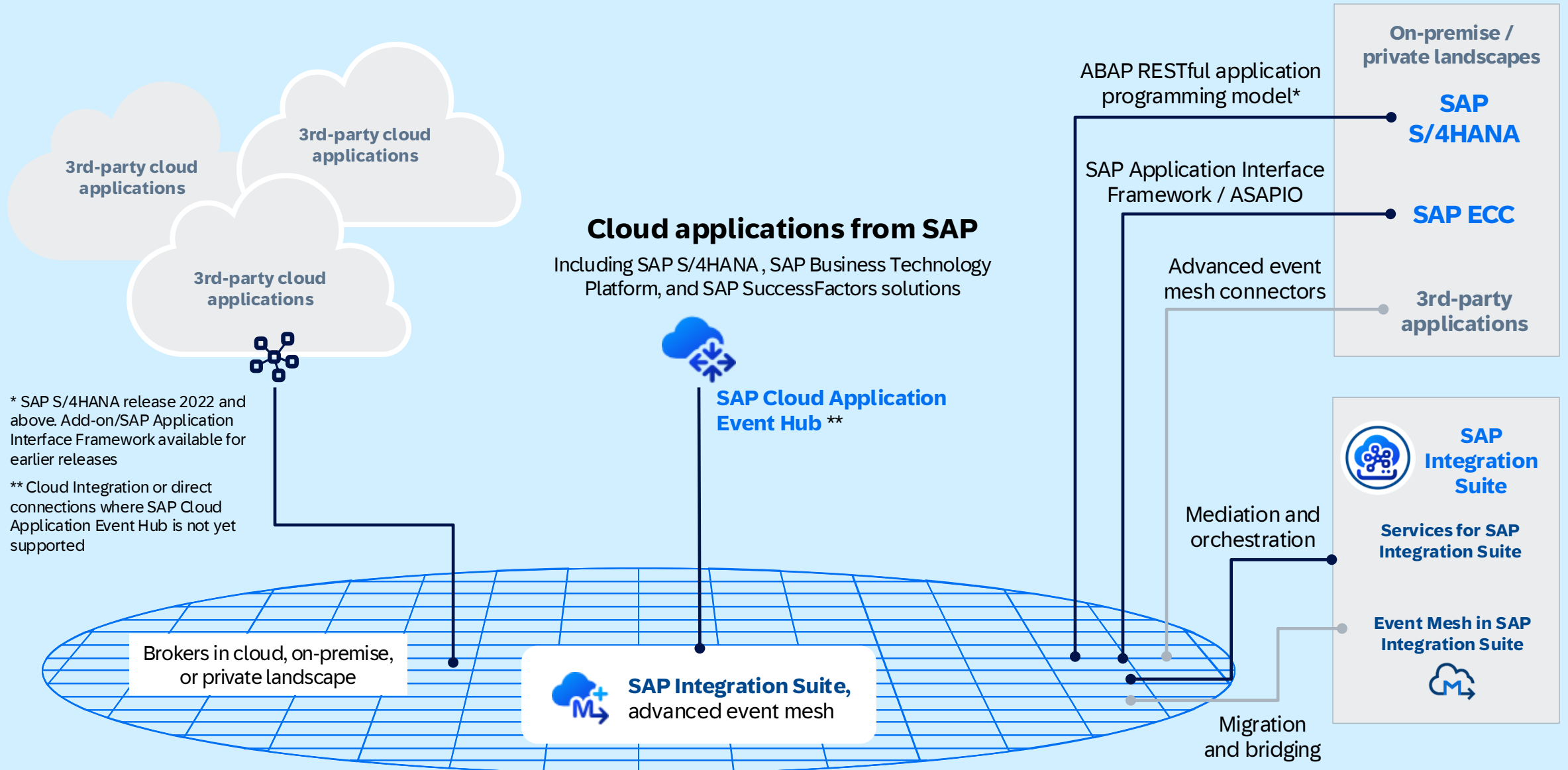
ce/sap/s4/beh/purchaseorder/v1/PurchaseOrder/ItemCreated/v1

Accepts the following message:

Topics:

- sap/s4/beh/purchaseorder/v1/PurchaseOrder/ItemChanged
- sap/s4/beh/businesspartner/v1/BusinessPartner/Created
- sap/ssc/caseService/caseCreated/v1

SAP's event-driven technical ecosystem and strategy



SAP S/4HANA connectivity to SAP Integration Suite, AEM



Enterprise Event Enablement

Administration

Channel Connection Settings

Manage RFC Destination

Manage OAuth Client Setup

Manage Channel and Parameters

Activate Event Discovery Service

Logging Settings

Troubleshooting

Configuration

Maintain Subscriptions

Maintain Inbound Event Topics

Maintain Outbound Event Topics

Maintain Event Filters

Monitoring

Test Tools

SAP Channel Configuration

Channels

via Service Key

via Service Key

Deactivate

Check connection

Status Channel Active Protocol Destination Topic Space Service Plan Description

BTP_AEM_BROKER AMQP BTP_AEM S/4HANA/Events Advanced BTP AEM Instance

Parameters of Channel BTP_AEM_BROKER

Parameter Value Default Value Description

Daemon User BTPUSER Daemon User

Event Mesh Validation Endpoint 715E3B51D2171EEFBFF9C69AB8C5E884 Event Mesh Validation Endpoint

Max Reconnect Attempts 0 0 Reconnect attempts

Number of publish connections 1 1 Number of publish connections

OAuth 2.0 Client Profile /IWXBE/MGW_MQTT OAuth 2.0 client profile

OAuth 2.0 Configuration BTP_AEM_OAUTH OAuth 2.0 configuration

Quality of Service 1 1 Quality of service

Reconnect Waittime 10 10 Reconnect wait time(sec)

AMQP connection to AEM broker

Create outbound binding

Outbound Bindings of Channel BTP_AEM_BROKER

Status Filter Topic

✓ sap/s4/beh/businesspartner/v1/BusinessPartner/*

✓ sap/s4/beh/product/v1/Product/Changed/*

✓ sap/s4/beh/salesorder/v1/SalesOrder/Changed/*

✓ sap/s4/beh/salesorder/v1/SalesOrder/Created/*

Outbound topics to publish

Connection Test More

RFC Destination: BTP_AEM

Connection Type: HTTP Connection to External Server Description

Description

Description 1: <fill in description>

Description 2:

Description 3:

Administration Technical Settings Logon & Security Special Options

Target System Settings

Host: tcps://mr-connection-8c8xf763e6g.messaging.solace.clo... Port: 5671

Path Prefix:

AEM broker connection details

Create Outbound Binding

Topic:

Topic Identifier (2) 1435 Entries found

Restrictions

Topic

sap/s4/beh/billingdocumentrequest/v1/BillingDocumentRequest/Rejected/*

sap/s4/beh/billingdocumentrequest/v1/BillingDocumentRequest/Rejected/v1

sap/s4/beh/billingdocumentrequest/v1/BillingDocumentRequest/SuccessDo

sap/s4/beh/billingdocumentrequest/v1/BillingDocumentRequest/SuccessDo

sap/s4/beh/billingdocumentrequest/v1/BillingDocumentRequest/SuccessDo

sap/s4/beh/billingdocumentrequest/v1/BillingDocumentRequest/SuccessDo

sap/s4/beh/businesspartner/v1/BusinessPartner/*

sap/s4/beh/businesspartner/v1/BusinessPartner/Changed/*

sap/s4/beh/businesspartner/v1/BusinessPartner/Changed/v1

sap/s4/beh/businesspartner/v1/BusinessPartner/Created/*

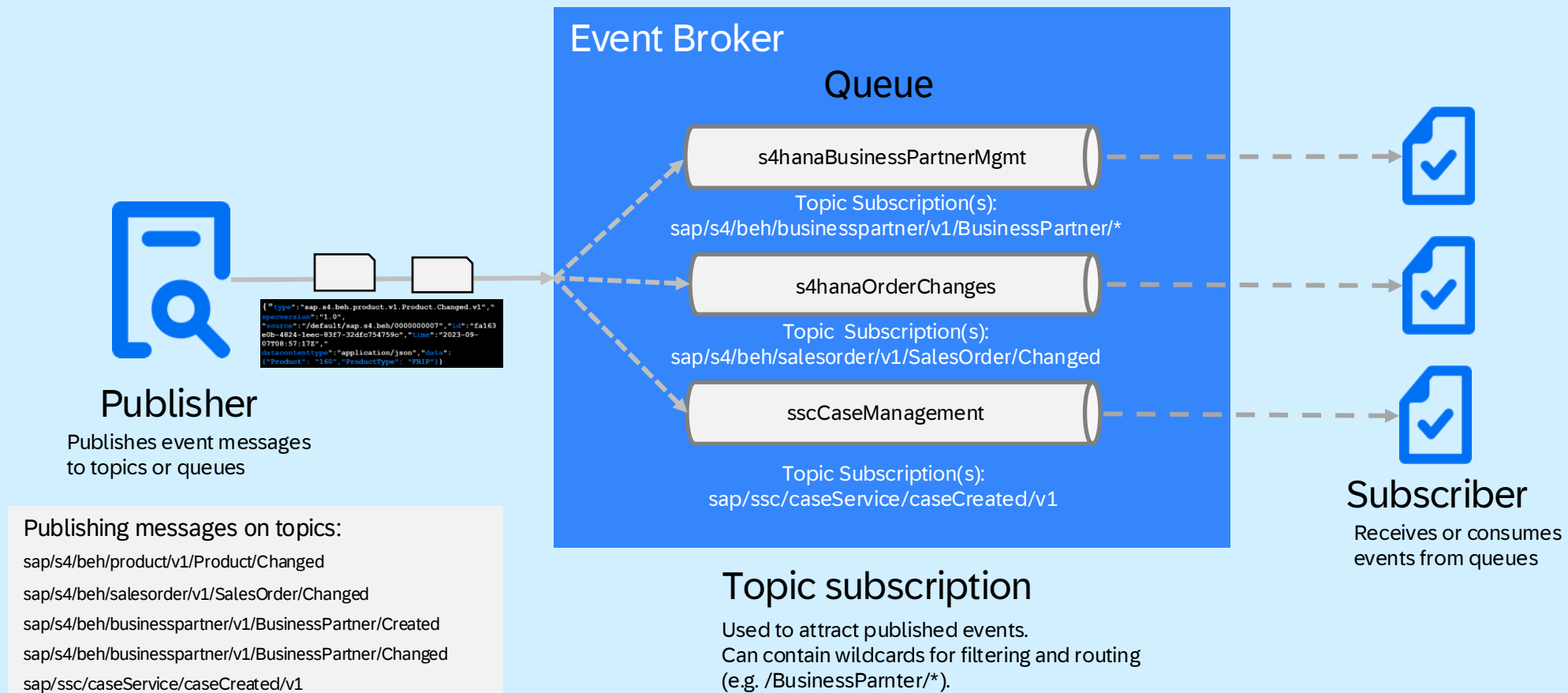
sap/s4/beh/businesspartner/v1/BusinessPartner/Created/v1

1435 Entries found

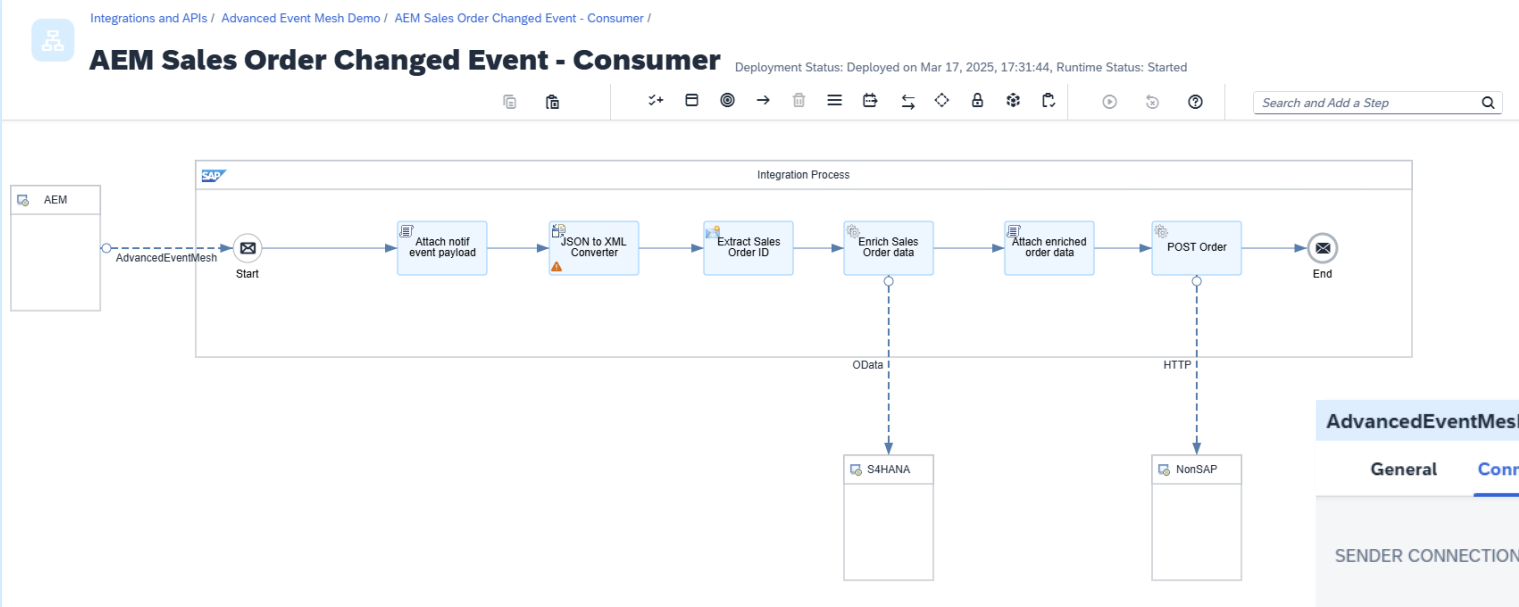
Publish-Subscribe Messaging Pattern



Event-Driven Architecture (EDA)

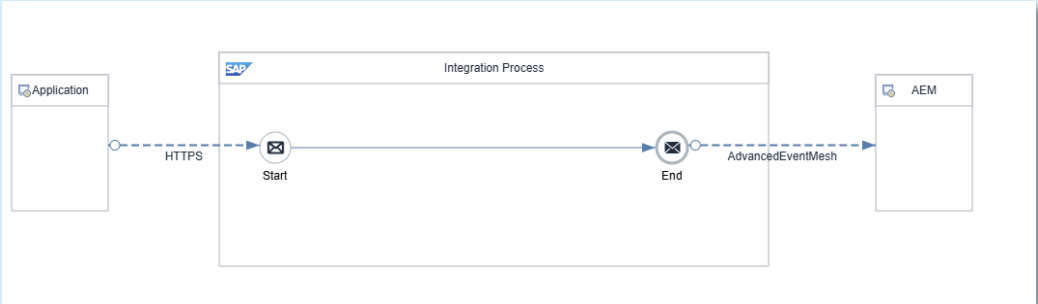


Integration Flow: Consumer or Producer of Events



Adapters:
AdvancedEventMesh (SMF message protocol)
AMQP
MQTT, HTTP

Demo scenario: iFlow as event consumer



iFlow as event publisher

AdvancedEventMesh

General **Connection** Processing

SENDER CONNECTION DETAILS

Host: *

Message VPN: *

Username: *

Authentication Type:

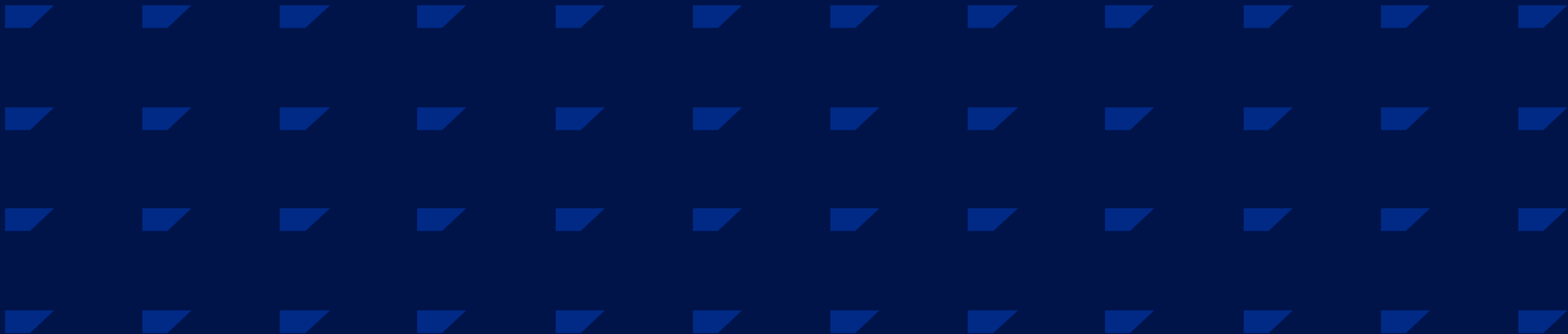
Password Secure Alias: *

Comparing SAP solutions for event-driven integration



		SAP Event Mesh	SAP Integration Suite, advanced event mesh
Standard	Fully managed cloud service	✓	✓
	Infrastructure Model	Shared	Exclusive in T-Shirt Sizes
	Deployment Options	BTP Deployment	Private and Public Clouds
	Connecting SAP and non-SAP systems	✓	✓
	Out-of-the box support for SAP event sources	✓	✓
	Support of Standard Protocols	✓	✓
	Message size and storage	1MB / 10GB	Up to 30MB / Up to 6TB
	Typical use case size	Small to Medium	Small to Ultra Large
Advanced	Network of Event Brokers	✗	✓
	Advanced Event Monitoring and Analysis	✗	✓
	Dynamic Event Routing	✗	✓
	Filtering	✗	✓
	Event replay	✗	✓
	Event Management	✗	✓

Demo



Cluster Manager: **Services**

[Create Service](#)

Filter by service name



Only show my services



All services



AEMDemo
eks-ap-southeast-2a



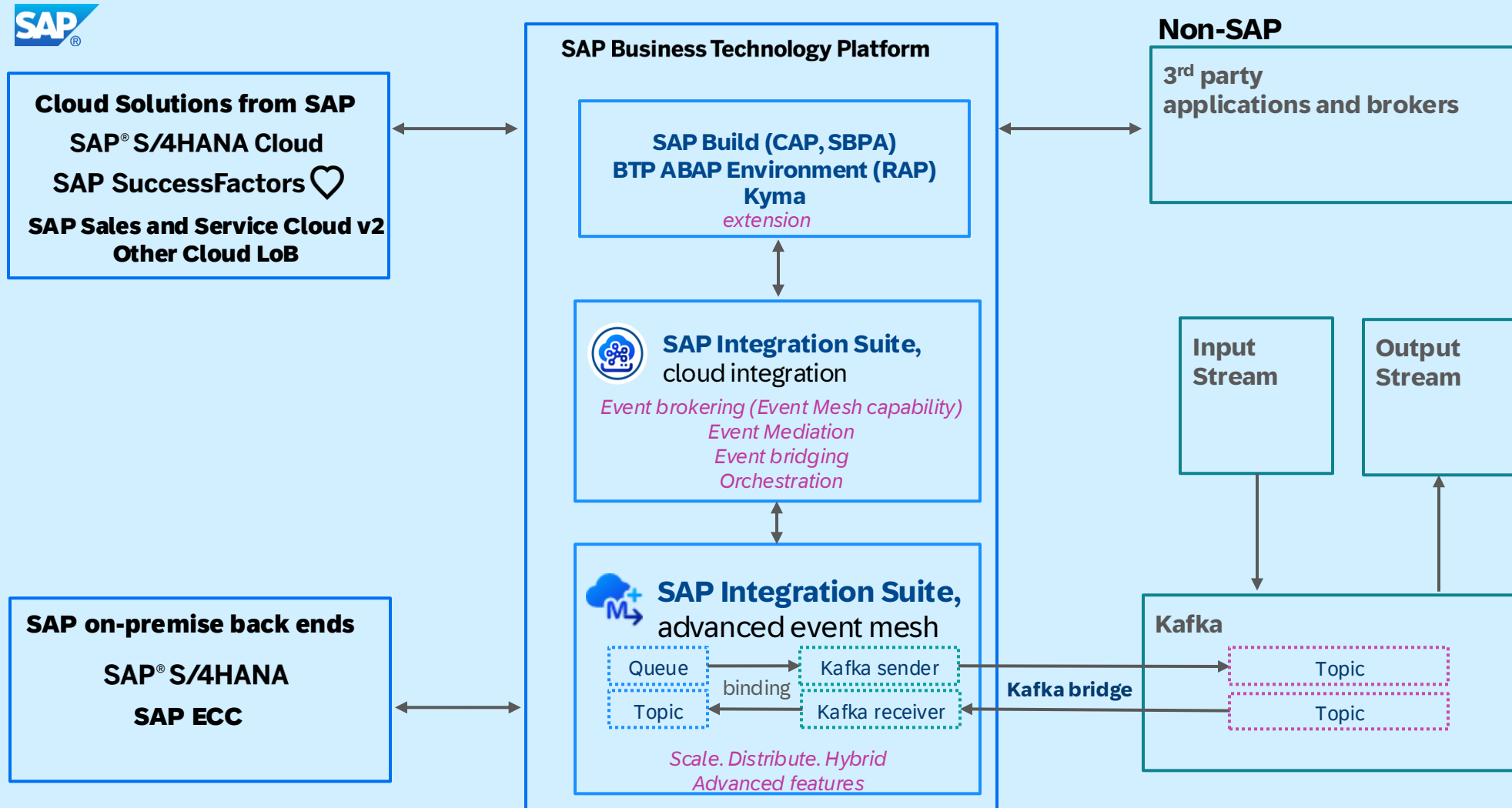
Broker 100
paul.fewster@sap.com

● Running



Intelligent Enterprise EDA from SAP

Focus: Kafka Bridge



Kafka bridge



SAP

AEMDemo

aemdemo

Change VPN

Messaging

Message VPN

Clients

Queues

Connector Wizards

Access Control

Telemetry

Replay

Bridges

Static Bridges

DMR Bridges

Kafka Bridges

Kafka Senders

Kafka Receivers

Search by name

☐ Sender Name

☐ Kafka

☐ Test

Senders | Kafka

Summary

Settings

Stats

Queue Bindings

Remote Brokers

Local VPN

Remote Kafka Cluster

Outgoing Message Rate

Uptime

Last Notice

Last Notice Time

Client Name

Queue Bindings

Connection Count

Bridge Status

Log in to remote broker for details

Queue Bindings | s4hana/purchaseorder/changes

Settings

Status

Enabled

Remote Topic

Remote Key Expression

Ack Mode

Partition Scheme

Hash Algorithm

Random Fallback Enabled

CONFLUENT

Stream Catalog

LEARN

Home

Environments

default

kafkademio

Topics

Cluster Overview

Networking

API Keys

Cluster Settings

Stream Lineage

Stream Designer

Topics

ksqldb

Connectors

Clients

s4hana.purchaseorder.changes

Overview

Messages

Schema

Configuration

Production in last hour

Consumption in last hour

Total messages

Retention time

Filter by timestamp, offset, key or value

All partitions

Latest

Max 50 results

7 messages shown

Auto-refresh on

Timestamp

Offset

Partition

Key

Value

1715568976129

2

5

"

["type":"sap.s4.beh.purchaseorder.v1.PurchaseOrderChanged.v1","specversion":"1.0","source":"/default/sap.s4.beh/740747452"...]

1715568966124

1

0

"

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171556893266

1

4

"

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1715568551121

0

4

"

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171556541109

1

5

"

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0

0

"

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1715564578484

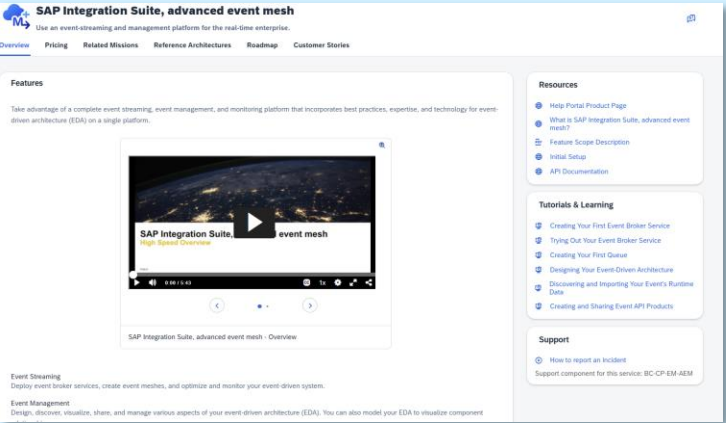
0

5

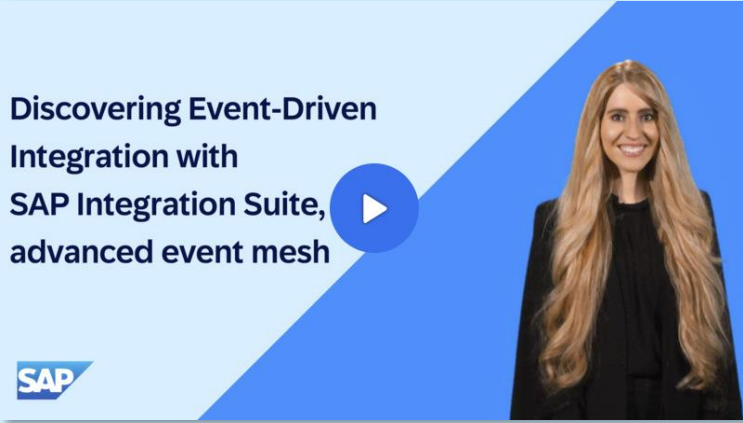
"

["type":"sap.s4.beh.purchaseorder.v1.PurchaseOrderChanged.v1","specversion":"1.0","source":"/default/sap.s4.beh/740747452"...]

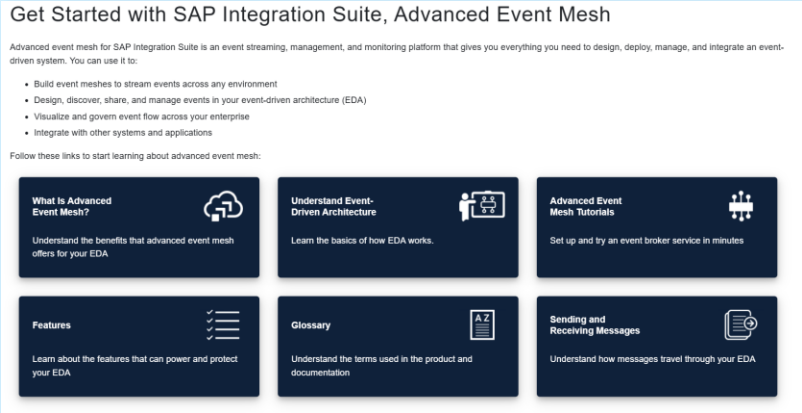
Learn More



[Discovery Center](#)



[Learning Journey](#)



[Documentation](#)



Thank you



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