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Agenda

API-based Integration Architecture and its challenges

Introducing Digital Integration Hub

A reference solution blueprint
API-based integration architecture and its challenges
“Application programming interfaces (APIs) are the ubiquitous and mainstream enablers for digital modernization.”

Source: Gartner Research, 2018
**APIs, the digital building block**

- **Digital apps**
- **Cloud services**
- **Business suites**
- **System**
- **Partners/customers**
- **Business networks**

**Powers apps and digital interactions**

Foster collaboration and co-innovation between partners, developers for omni channel access, business collaboration

**Insights & analytics on the APIs traffic, usage, error reporting and monitoring**
An API-based integration architecture

Channels (system of engagements)
- Digital apps
- Business networks
- Partners / customers

API Gateway (design, security, analytics, monetization)

Integration middleware (orchestration, transformation, mapping)

Application and data (system of records)
- Business Suite
- Cloud Services
- Database
“API-based fast access to data dispersed across multiple sources is costly and needs notable integration work.”

Source: Gartner Research, 2018
Large enterprise applications are difficult and costly to scale to handle the massive API calls.

Difficult to leverage cloud-native, high available APIs over legacy business systems.

Fragmented data across multiple applications and data sources makes integration complex.

Challenges with API based integration architecture

- Systems
- Cloud services
- Legacy system
- Business networks
- Partners/customers
- Digital apps

- Large enterprise applications are difficult and costly to scale to handle the massive API calls.
- Difficult to leverage cloud-native, high available APIs over legacy business systems.
- Fragmented data across multiple applications and data sources makes integration complex.
Introducing Digital Integration Hub
Introducing Digital Integration Hub

Digital integration is an emerging architecture for implementing large-scale, high-throughput APIs by inserting a high performance in-memory data store layer between the API service layer and the system of record.
Key components of Digital Integration Hub

**High-performance data store**
- Stores relevant subset of the back-end data in cache.
- A single consolidated view of entities, the data for which is stored in one or multiple system of records.

**Front-end API services**
- Low-latency front-end API services connecting to high-performance cache for read queries.
- Updates calls can be performed directly on the back-end systems (command query responsibility segregation).

**Integration layer**
- Keeps the system of records sources and high-performance data store in sync.
- Event driven integration
Key benefits of Digital Integration Hub

- Responsive user experience
- Decoupling of the back-end data sources from front-end API
- Protection of back-end systems from excessive front-end APIs
- Modernization of legacy system following a cloud-native approach
- Normalization of the APIs for certain domains accessing data held in multiple data sources
- Real time business insights and analytics
Application landscape decoupling with SAP Cloud Platform Integration Suite

- Responsive multi-channel access layer: Enabling new business models w/o risk of scaling
- “Defending” the application layer: From potentially excessive workloads
- 24/7 support: Always-on access to APIs even if back-end systems must be taken offline
Reference Solution Blueprint
SAP Cloud Platform Integration Suite solution blueprint example

End User

Desktop  Mobile  SAP Fiori

Third-Party Cloud Apps

SAP® Cloud Platform

API Management

Read

Write

Open Connectors

Pub/Sub

Cloud Integration

Pub/Sub

Enterprise Messaging

SAP® S/4HANA Cloud  SAP SuccessFactors  SAP Ariba

SAP Concur  SAP Fieldglass  SAP® C/4HANA and more …

Your Datacenter

SAP HANA Database

Data Provisioning Agent

TCP

HTTP/RFC

Smart Data Integration (SDI)

Database

Your Application

Cloud Connector

SAP® S/4HANA or Business Suite
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- INT101 – Integrate it All with SAP Cloud Platform Integration Suite
- INT202 – AI-Driven and Open Integration to Customize Intelligent Suite Scenarios
- INT203 – SAP Cloud Platform API Management: Customer Use Cases and Best Practices
- INT361 – Govern Access to your Applications with SAP Cloud Platform API Management
- INT615 – Designing and Developing Harmonized REST-Based Microservices

Public SAP Web sites

- SAP Community: [https://www.sap.com/community/topics/cloud-integration.html](https://www.sap.com/community/topics/cloud-integration.html)
Thanks for attending this session.

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