Cloud Integration Services on SAP HANA Cloud Platform

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SAP HANA Cloud Platform
The Enterprise Capabilities You Need to Succeed in the Cloud

Collaboration  User Experience  Integration  Internet of Things  Analytics
Security  Mobile  Data & Storage  Business Services  Dev & Ops
SAP HANA Cloud Platform
The Only Platform Covering the Full Spectrum of Cloud Integration

Data Integration, Data Access, and Data Quality
Event Processing
Digital Omnichannel Access
Internet of Things
Orchestration of Processes Across Cloud and On-Premise Apps
Connect your apps, data, and business processes—regardless of who built them or where they are deployed

Jumpstart integration by leveraging pre-built integration flows and adapters to integrate applications

Get the right information and business processes into the right hands on the right device at the right time

**SAP HANA Cloud Platform, integration service**
Accelerates process integration in the cloud and between cloud and on-premise deployments with pre-built integration flows and graphical modeling

**SAP HANA Cloud Platform, cloud connector**
Provides simple and secure access to establish on-premise connectivity from applications running in the cloud

**SAP HANA Cloud Platform, Identity Authentication**
Offers employees, customers, and partners unified, secure, cloud-based access to the business processes, applications, and data they need

**SAP HANA Cloud Platform, OData provisioning**
Exposes SAP applications’ data and business logic as open standard services and leverages SAP Gateway technology
Event Processing
Capture, Analyze, and Act on Events As They Happen

Extract actionable information from event streams or IoT and generate alerts when fast action is needed

Initiate automatic responses to changing conditions based on a single event, or a combination of events

Natively incorporate complex event processing into apps quickly to monitor, analyze, and act on data in real time

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**SAP HANA Cloud Platform, smart data streaming**
Consumes high-volume, high-velocity event streams (including IoT applications) while correlating and analyzing events as they happen, allowing your organization to respond immediately

**SAP HANA Cloud Platform, Internet of Things service**
Uses the power of the SAP HANA platform and the integration features of SAP HANA Cloud Platform to employ devices, sensors, and real-time data in building IoT applications. Works in conjunction with smart data streaming analytic services to make your IoT applications smarter.
Make digital access simple, secure, and scalable by providing governed access to enterprise information and services.

Unlock access to SAP and non-SAP corporate data and ease development by leveraging easy-to-use open programming standards.

Discover, test, and build apps quickly extending the value of existing solutions.

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<th>SAP HANA Cloud Platform, OData provisioning</th>
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<th>SAP API Business Hub</th>
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<tr>
<td>Exposes SAP applications’ data and business logic as open standards services and leverages SAP Gateway technology</td>
<td>Allows you to publish APIs based on open standards so you can share data and services securely and at scale with customers, partners, or business units</td>
<td>Allows developers to discover, test, and consume the services and applications needed to quickly extend SAP applications on SAP HANA Cloud Platform</td>
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Integration Service
SAP HANA® Cloud Platform, integration service
Lowers cost, increases speed, and enhances simplicity for our customers

- Strategic service for cloud-to-cloud and cloud-to-on-premise
- Prepackaged integration content hub: “Discover, Configure, Manage”
- Multi tenancy, rolling software updates, horizontal scalability, subscription-based
- Strong focus on security including data isolation
- Complements SAP Process Orchestration
- Open to partners – projects, content, and connectivity adapters

“[…] The new standard integration model to integrate our [SAP’s] entire portfolio will be based on SAP HANA Cloud Platform, integration services […] SAP HANA Cloud Platform and related integration services will become a mandatory component in your entire landscape if you don’t want to give up your biggest assets of integration.”

Bernd Leukert, Member of the Executive Board of SAP Products & Innovation, keynote from SAPPHIRE Now 2016, Orlando
SAP HANA® Cloud Platform, integration service
Accelerated integration through HCI content packages

- File based data load
- Twitter Integration
- SF EC and C4C integration
- SAP S/4HANA
- SAP ERP
- SAP CRM
- SAP Hybris Marketing
- SAP Multiresource Scheduling add on for ERP
- eInvoicing for Chile
- eInvoicing for Italy
- eInvoicing for Peru
- eInvoicing for Spain
- eTransport Registration for Hungary
- GB Payroll e-Filing of Employees' Payments and Deductions I
- Marketing Integration with C4C
- Marketing Integration with Goodgle Ads
- Marketing – Google AdWords Paid Search Integration
- SAP Social Intelligence Data Harvesting from Social Media Channels
- SAP Predictive Maintenance and Service- Business Process Integration with SAP CRM
- LMS Curricula with SAP HCM Qualification
- HCM Suite Onboarding with SAP ERP HCM
- HCM Suite Competency with SAP HCM Qualification
- HCM Suite Talent Mgt integration with SAP ERP HCM
- SAP ERP & S/4HANA to EC Cost Center Replication
- SAP ERP & S/4HANA to EC Employee Data Replication
- EC to SAP ERP & S/4HANA Organizational Data Replication
- EC to SAP ERP & S/4HANA Employee Data Replication
- EC to SAP ERP & S/4HANA Employee Absence Data Integration
- EC Integration with S/4HANA cloud edition
- SAP Fieldglass with EC - Contingent Worker
- EC with SAP EPM
- Rapid Data Migration to SAP Cloud for HR, Workforce Analytics
- HCM Suite Talent Management Data Integration
- SAP Best Practices for EC 3rd Party Integration
- EC with 3rd Party Benefits Vendor – Benefitfocus
- EC with Third-Party Time Vendor - Kronos
- EC with 3rd Party Time Vendor - WorkForce Software
- EC with IBM Kenexa
- RCM with 3rd Party Assessment Vendor-People Answers
- RCM with 3rd Party Assessment Vendor-SHL

Integration Content Hub
https://cloudintegration.hana.ondemand.com
HCP: Connecting CRM to C4C

Objectives
- Streamlining Bentley global Sales process with an Intuitive UI, Complete mobile solution, Improved performance, and productivity tools while keeping the data originating in SAP CRM
- Provide real-time synchronization of sales data for Bentley’s Hybrid CRM model

Why SAP
- Long time SAP CRM customer with user adoption challenges, leveraging SAP footprint for provisioning sales a seamless user experience
- SAP Hybrid approach allowed for a smoother transition to the cloud platform vs. a rip and replace approach

Benefits
- Usage of pre-packaged integration content for integrating SAP Cloud for Customer with SAP CRM
- SAP HCI tooling helps in extending existing standard content
- Bi-directional replication of Business Partners, Activities, Opportunities, and Leads
- Unidirectional replication of Account Hierarchies, Employees, Product Categories, Organization Unit, and Products
- Lower TCO since hardware now owned by SAP

Project Facts
- SAP Cloud Service Center provided the consultation for this project
- Initial rollout to 100 sales users followed by another 450 worldwide

“Using the SAP Hybrid cloud approach enabled by HCI, has allowed us to successfully maintain our business process continuity without any disruptions, while providing an enhanced user experience for our Sales Users.”

Kiran Koons, Director, IT Enterprise Solutions

Faster
Integration software updates

Lower
TCO through leveraging existing SAP investments

Better
Usability and adoption

Integrated near real-time user experience with a single source of truth
O-I: Complying with Government Regulations

Objectives
- Become one of the first companies chosen by the Peruvian government to support a major policy change to accept e-invoices
- Realize a cost-effective and secure means of exchanging business-to-government (B2G) e-invoices for legal and tax compliance

Why SAP
- Expertise to enable compliance with global and local tax regulations
- Prepackaged content that can be integrated with government systems and provides the very best in security capabilities

Resolution
Worked with SAP Globalization Services and SAP AGS, utilizing SAP MaxAttention™ services, to deploy SAP HANA® Cloud Integration technology for market integration and the SAP Application Interface Framework tool

Benefits
- Full and simplified compliance with the Superintendencia Nacional de Administración Tributaria (SUNAT) for e-invoices
- E-document framework that combines the interface management of SAP Application Interface Framework and the capabilities of SAP HANA Cloud Integration to deliver B2G integration for multiple countries
- Less integration effort and compliance risk by leveraging prepackaged content from SAP
- Adherence to the complex security requirements of e-communication
- Less compliance effort by relying on domain expertise and application support from SAP
- Faster time to value by delivering real-time legal changes
- Lower implementation costs and lower total cost of operations

SAP® Active Global Support (SAP AGS) and SAP Globalization Services organizations

“Combining SAP HANA Cloud Integration and SAP Application Interface Framework and teaming up with SAP AGS and SAP Globalization Services helped us realize effective B2G auditing transactions with all the necessary security requirements.”

• Rodney Masney, VP of Technology Service Delivery, Owens-Illinois Inc.
SAP HANA® Cloud Platform, integration service
A complementary offering to SAP Process Orchestration

Deciding Factors
- System Landscape
- Prepackaged Content
- TCO
- Go-Live Timelines
- Connectivity Options
- LOB Decisions
Data Integration to HCP with onPremise Tools
Agenda

Data Integration for HANA databases on the HANA Cloud Platform:

- Data integration to HCP with onPremise tools (1 slide)
- Native data integration on HCP with HANA smart data integration
The **SAP HANA Cloud Connector** establishes a **secure** and **reliable** tunnel so that on-premise data integration tools (e.g. SAP Data Services, SLT or 3rd party tools) can connect to the HANA database on the HANA Cloud Platform.

In SAP Cloud Connector create a database tunnel through a service channel. All ODBC/JDBC requests to this service channel will be redirected to the HANA instance on HCP.
Native Data Integration on HCP with HANA smart data integration
SAP HANA smart data integration delivers built-in data movement capabilities into the HANA database to ingest data from a wide variety of sources, as well as move data out (bi-directionally).

Native Integration Capabilities

- Supports all styles of data delivery
  - Virtualization / Federation
  - Real Time (some data sources)
  - Batch
- Supports data distribution (bi-directional)
- Architected for on premise, cloud or hybrid deployments

Web Based Design Tools

Open Framework

- Out of the box adapters for common sources
- Open SDK to build custom adapters
Data Provisioning Agent
The key to successful deployment in cloud with security top of mind

Lightweight installation inside the customer’s firewall
- Small download from SAP Service Marketplace
  - A Deployment Unit (DU) for HANA
  - An onPremise agent
- Simple installation and configuration
- Runs on Windows or Linux

Securely transfers data from on-premise to cloud
- Data sent over the cloud via HTTPS
- Data are streamed from source to target and never persisted

Operates without firewall exceptions
- Communication is always from the agent to the cloud
- No need for VPN, reverse proxy, or other firewall exceptions
- Agent uses long polling: places request to server and waits for response when a task is ready to execute
SAP HANA smart data integration adapters
Built-in real time adapters for common sources

3rd party DBMS adapters
• For Oracle, MSSQL, DB2, HANA, Sybase ASE and Teradata
• Real time push through log based changed data capture (Oracle, MSSQL, DB2, ASE) or trigger based changed data capture (HANA, Teradata).

SAP ECC1 adapters
Implements real time push functionality on top of 3rd party DBMS sources (Oracle, DB2, MSSQL)
In addition, it takes into account
• SAP ABAP Transparent, Clustered and Pooled tables
• SAP catalog hierarchy metadata

Twitter adapter
• Real time access to Twitter content on hashtags, users, etc.

1. Minimum supported version is ECC 6; Details on NetWeaver version dependency in PAM
SAP HANA smart data integration adapters

Built-in **batch** adapters for common sources

**OData adapter**
- Generally accessible from the cloud (e.g. Success Factors)
- Runs on the DPserver in HANA, not on the agent

**SOAP Adapter**
- Adapter for SOAP Web services

**Camel adapter for Facebook**
- Generic Camel adapter (100+ open source adapters available) – [https://camel.apache.org/components.html](https://camel.apache.org/components.html)
- In SP11 only tested for the Camel Facebook component

**Hive adapter**
- Adapter for Hadoop

**ABAP adapter**
- For business content extractors (aka BW datasources)
SAP HANA smart data integration
Use case: Data Federation (smart data access)

Data Federation enables users to see data from remote sources as virtual tables in the HANA database, without physically moving all data into HANA.

- Ideally suited for ad-hoc queries on data sets that cannot be moved in HANA.
- Initially delivered through Smart Data Access
  - Available since HANA SPS07
  - Was not available on HCP because the SDA architecture was not cloud ready (local ODBC drivers). But…
- Now extended to HCP with Smart Data Integration
  - Extends SDA functionality with more adapters that can run outside of HANA
SAP HANA smart data integration
Use case: Data replication

With Data Replication data can be replicated in real-time from the source system into HANA, with minimal transformations.

- Simple web UI to create a replication task:
  - 1. Select remote source
  - 2. Choose list of tables to replicate
  - 3. Save and activate
- Initial load followed by continuous real-time delta load
- More advanced options available
  - Replicate table structure changes
  - Filters and mapping expressions
  - ...
With flowgraphs more complex data transformation rules can be defined to extract, transform and load data into HANA.

- Rich set of transformations available.
- Also flowgraphs can be real-time and replicate + transform data on the fly.
During setup of a HANA MDC (Multitenant Database Containers) instance, you can **enable the data provisioning server**.

Data provisioning agent and deployment unit available under a developer license on [tools.hana.ondemand.com](http://tools.hana.ondemand.com) (HCI tab).

More information on HANA smart data integration

SAP HANA smart data integration
Licensing and packaging for productive use

Check with your SAP account manager for latest details, but in summary:

- HANA smart data integration is included in the premium and professional editions of the HCP extension bundles.

- HANA smart data integration is included in “HCP, integration service” bundles (Data and Enterprise edition).

**Note:** HANA smart data integration (SDI) is replacing HANA Cloud Integration for data services (HCI-DS) for use cases that involve loading data into HANA on HCP, so SDI has been included in all bundles that have HCI-DS.
Thank you