

Palantir HyperAuto for SAP

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Powering Palantir HyperAuto

ERP and CRM systems are the central pillars of many business' data architectures, spanning companies of all sizes, industries and geographies. And for good reason, as these systems excel at standardizing and managing data associated with transactional business processes. As more business functions - from Purchasing and Sales, to Material and Demand Management - use these systems, the quantity and complexity of stored data compounds, including transformative insights regarding business operations.

Unfortunately, these insights often remain untapped due to the rigid, complex data models used by the systems in play. Analyzing ERP or CRM data often requires the manual work and expertise of a specialist - a time-consuming and expensive prospect. Moreover, real-world business decisions often require ERP and CRM data to be integrated either with each other or with data outside these systems. This, again, requires labor and time-intensive work - if it can be done at all.

Palantir HyperAuto is powered by software-defined data integration (SDDI), a solution that connects to and integrates data from ERP and CRM systems automatically, enabling insights in hours, not months. Once integrated, end-users from across the organization can utilize ERP and CRM data to power custom workflows and analytics. Best of all, the solution enables seamless write-back, feeding operational insights back into the underlying systems to power more impact.

[In this technical whitepaper, we are making a deep-dive into how Palantir HyperAuto works for SAP, one of the most widely adopted ERP systems globally, to illustrate in a very concrete form our guiding principles:](#)

01	Integrate data from first principles	→	The richest and most flexible downstream applications of data integration rely on starting from the most granular source data. Using preprocessed data may feel like a shortcut, but doing so immediately narrows the scope of problems that could be addressed in the future.
02	Automate as much as possible	→	Metadata is as valuable as the data itself, as it can power dynamic data pipeline generation, ultimately slashing the overheads of manual data integration now and in the future. A data pipeline, albeit one written by hand, is a form of automation; in dynamically generating that pipeline, you are automating your automation.
03	Build a highly extensible knowledge framework	→	Not everything can be automated, but learnings encoded as product will compound over time. Make it easy to contribute knowledge and review those contributions to maintain a high bar for quality.
04	Close the operational loop	→	A first-class method for writing back to source systems ensures data-driven decisions result in concrete actions. So often, data only flows in one direction, but in a world that has moved from monolithic platforms to multi-system interoperability, bi-directionality is key.

Palantir HyperAuto for SAP

SAP has been successful at enabling organizations to integrate automated back office functions such as accounting, sales, payroll, finance and HR. However, in recent years the landscape of data sources required to run a successful business has grown significantly. In the absence of the flexible, first-class pipelines that are required to integrate varied data sources, many organizations resort to creating custom services that accompany SAP and result in a fragmented landscape which fails to maximize the potential of the underlying data or the applications themselves.

Introducing Palantir HyperAuto for SAP

Palantir HyperAuto solves for this problem with a comprehensive collection of tools that lets data-driven organizations maximize the value of their SAP data alongside other critical data sources, and includes:

01	SAP-Certified Connector	→	Increase the speed and efficiency of SAP data ingestion, discover new insights, and unlock increased value immediately.
02	HyperAuto Data Explorer	→	Take a guided tour of SAP modules and objects, and bulk create data extracts for specific use cases or workflows.
03	Pipeline Builder and Object Modeller	→	Automatically generate data pipelines that transform raw SAP data into curated datasets and objects.

Why Palantir HyperAuto for SAP?

This collection of tools is designed to alleviate speed and resource inefficiencies—enabling organizations to unlock value immediately with Palantir.

Increase Speed and Efficiency

- Increase speed of data ingestion and perform better at scale
- Reduce burden on internal resources and teams by removing manual processes
- Seamlessly transform SAP data into objects ready for business use cases

Integrated Technical Functionality

- Write back data to SAP
- Activate pre-built business logic and workflows

Critical transparency and security

- Granular access controls and full visibility of data provenance
- Monitor resource usage and leverage debugging tools

The Palantir SAP Connector

↳ Overview

Palantir HyperAuto for SAP is underpinned by the SAP-certified connector. The connector is designed to alleviate the speed and resource inefficiencies that occur when using an intermediary extract, transform, load (ETL) approach to integrating SAP data. It is an SAP-certified add-on that securely extracts data and metadata from SAP systems for use by Palantir HyperAuto. It is installed in the SAP application layer, adheres to standard SAP security policies, and uses native SAP application logic for data access.

↳ These SAP object/system types can all be accessed using the connector:

01 – SAP ERP Tables

05 – SAP Landscape Transformation (SLT) Replication Server

02 – SAP Business Warehouse InfoProviders

06 – SAP Business Content Extractors

03 – SAP Business Warehouse BEx Queries

07 – SAP Functions/BAPIs

04 – SAP ABAP Core Data Service (CDS) Views

08 – SAP HANA Information Views

↳ Key features

- The connector is an SAP-certified add-on, installed using SAINT (SAP Add-On Installation Tool).
- The connector runs a web service via SICF. This allows the Data Connector to request underlying data from ERP, BW or SLT over HTTPS.
- Configuration of the data syncs (including, e.g., object name, optional filters, schedules) is defined and maintained in the SDDI Source Explorer.
- The connector uses the SAP NetWeaver application layer and is independent of the underlying database. There is no direct database access.

HyperAuto Source Explorer

↳ Overview

The Source Explorer for SAP is enabled automatically in the Data Connection UI when the HyperAuto SAP Connector is available. It provides a clean, intuitive interface to examine the contents of an SAP system and to bulk create data extracts for chosen modules or predefined workflows.

The screenshot shows the HyperAuto Source Explorer interface for SAP. On the left, there is a sidebar with a search bar and a tree view of SAP modules. The 'Material' module is expanded, showing various tables like MARA, MAK2, MARC, etc. The central area displays a network diagram of these tables, with lines indicating relationships between them. On the right, there is a details panel for the selected table, 'MARA (General Material Data)'. This panel shows the table's name, client, and a list of columns and their data types. The columns listed include Client (MANDT - CHAR), Material Number (MATNR - CHAR), Material Type (MTART - CHAR), Industry sector (MBRSH - CHAR), Material Group (MATKL - CHAR), Base Unit of Measure (MEINS - UNIT), Purchase Order Unit of Measure (BSTME - UNIT), Basic Material (WRKST - CHAR), Laboratory/design office (LABOR - CHAR), Purchasing Value Key (EKWSL - CHAR), Weight Unit (GEWEI - UNIT), Volume unit (VOLEH - UNIT), and Container requirements (BEHVO - CHAR).

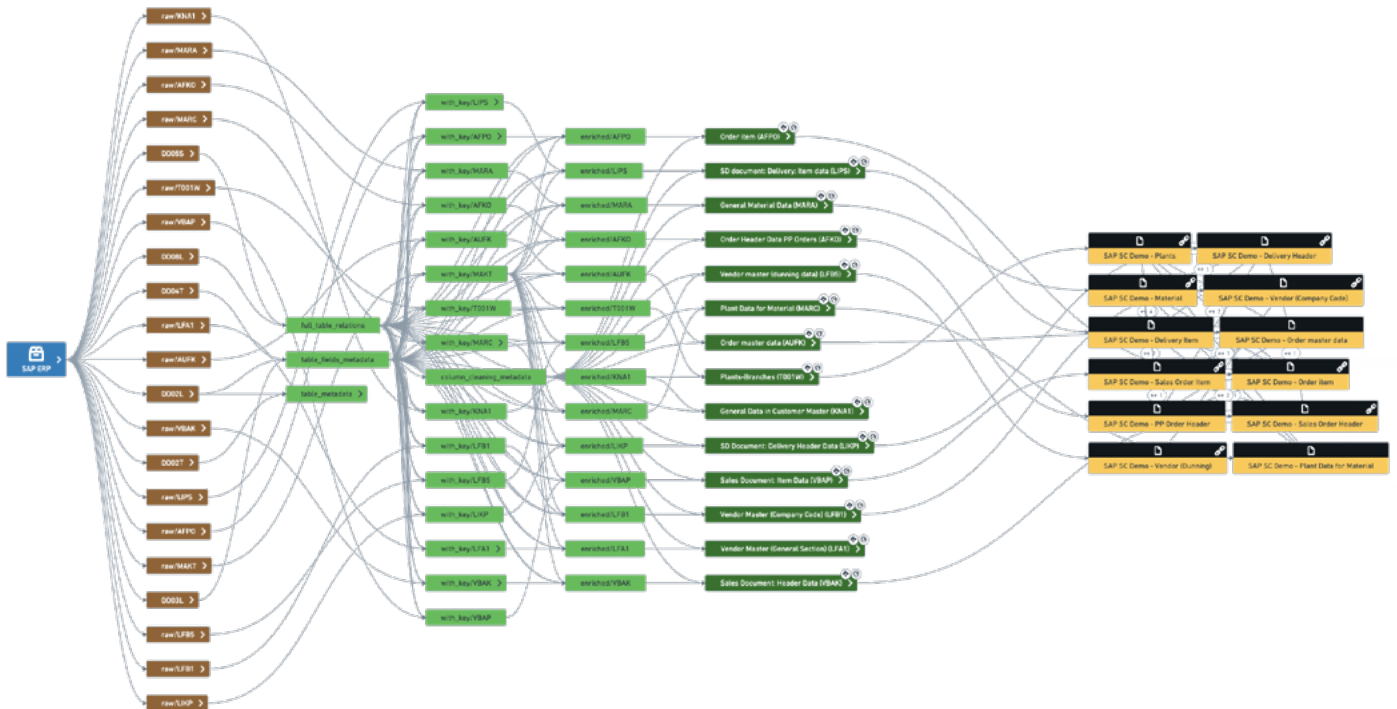
↳ Key features

- Seamlessly navigate SAP Modules (e.g. Material Management or Sales Distribution) and drill down to discover all associated common objects (e.g. Material, Vendor, or Purchase Order) and ERP tables.
- Inspect the schema of a given table and preview a set of records to better understand the data before extracting.
- Comprehensive search function empowers a user to find other ERP tables outside of predefined modules.
- Create data extracts with a single click.
- The Source Explorer for SAP creates a configuration file—used by the Automatic Pipeline Generator—which bootstraps the process of automatically creating curated datasets and objects from the raw ERP tables.

HyperAuto Automatic Pipeline Generator

↳ Overview

The Source Explorer for SAP is enabled automatically in the Data Connection UI when the HyperAuto SAP Connector is available. It provides a clean, intuitive interface to examine the contents of an SAP system and to bulk create data extracts for chosen modules or predefined workflows.



↳ Key features

- Powered by a single configuration file (from the Source Explorer), no further user input is needed.
- Flexibility to modify and augment the pipelines to satisfy custom requirements.
- Incremental logic structure to ensure performance over large data scales.
- Automated key generation and joins for guaranteed data correctness and limited human error.
- Automated ontology generation for immediate business value.

Performance

Given the vital role SAP systems have in an organization, it's critical that data integration efforts are cognizant of performance and associated load. Palantir HyperAuto can monitor and pivot to adapt to maintain optimal performance.

- The Connector checks data load on the system before starting extraction. If certain configurable thresholds are breached, extraction is aborted. These system load checks include memory, CPU and background process checks.
- When large data extractions take place, data is paged. In this case, system load checks are performed throughout the paging and if resources are insufficient the extraction is aborted.
- All aspects of the system load check functionality are highly configurable to support fine-tuning to your system's needs.

↳ Key features

- SAP SLT (SAP Landscape Transformation) Replication Server is a data replication tool that uses database triggers to perform change data capture (CDC), enabling efficient data replication from source SAP systems to a target system.
- SAP SLT and the HyperAuto SAP Connector can be configured to work together to enable CDC replication from SAP.
- When a HyperAuto dataset sync is first configured for an SAP object, SLT will perform a full load. Consecutive triggers will fetch only the changes for the object.
- Purging of SLT queues is managed by SLT. It is also possible to configure an HyperAuto dataset sync to have SLT perform a full load (snapshot) of specific SAP objects rather than operate in CDC mode (incremental).

Security and Governance

Palantir HyperAuto runs on Palantir Foundry and benefits from the many security and governance features provided by the platform.

Palantir Foundry combines best-in-class authorization, permissioning and security protocols with powerful enterprise auditing functionality—that’s managed internally at your organization—to create a comprehensive approach to data security.

Palantir Foundry’s default tooling ensures access to the right data at the right time. For SAP data, users can leverage Foundry’s granular access control framework to secure information all the way down to the dataset level and assign specific degrees of access for different user groups and organizations. For each individual dataset, you can define the users who are permitted to discover, read, modify, and delete the data.

Palantir Foundry maintains an audit trail that captures all user activity within the platform. For every user action—read, write, deletion—Foundry captures what data was accessed, where, when, and by whom. Foundry also captures a detailed history of integration, including time of connection, source, and revision history. This metadata is used to track data provenance and manage compliance with data auditing and retention policies.

↳ Auditing

We designed Foundry to promote analytical integrity and data accuracy. Foundry’s approach to auditing means that you can easily understand data provenance, quickly monitor data syncs, and trace steps taken by users to ensure results can always be reproduced.

- Understand Data Provenance: Palantir Foundry maintains a comprehensive history of all data, including an archive of all raw information from every source system. Foundry’s versioning infrastructure stores data, the metadata associated with the process of integration, and any subsequent transformations.
- Monitor Syncs with Foundry Sync Log Report: An SAP Data Transfer Monitor allowing for detailed logs on syncs. Providing reporting on log headers, log item and page information for all Foundry syncs.

↳ Authorization

- SAP Standard Security: The HyperAuto SAP Connector uses an SAP technical user secured and authorized within SAP. Therefore, all SAP standard security procedures and policies apply. There is no additional maintenance of data flow security.
- Table/Object-Level Security: Access can be configured at the table/object-level by editing the default authorization roles that are provided with the add-on.

Default Authorization Roles in the SAP Connector

- Service Roles: These are basic roles that are required for a user to run the HyperAuto SAP Connector services.
- Content Roles: These roles are required for data to be extracted from SAP systems. These roles can be modified according to business requirements.

With the connector Data Administrators retain control over the data being shared with Foundry and can leverage additional tooling, including:

- Encryption and Data Masking Configurations
- Global Filters (Pre-Filters): Control sensitive data extracted from SAP systems. Administrators can specify predefined filters in SAP itself, which override filters defined in the HyperAuto Source Explorer, and are applied before any data leaves the SAP system.

Writeback

Writeback to SAP is fast and secure—right out of the box. Writeback can also be scaled across a number of use cases, removing the need to create new APIs and processes as the data foundation and number of use cases grow with the business.

By utilizing SAP's remote-enabled functions (typically BAPI functions), the HyperAuto SAP Connector supports writeback to SAP, which can either be user-driven (based on an action taken by an end-user) or triggered by a scheduled data pipeline. When writeback is user-driven, the OAuth 2.0 Authorization Code flow ensures that the action taken in SAP is correctly attributed to the named user – important for security, licensing and audit purposes.

Prerequisites

The Connector requires the source SAP system to be running on:

- SAP NetWeaver
- v7.4 SP5 or above
- or v7.5 (no minimum SP level)

If your primary SAP system is running a NetWeaver Application Server version lower than 7.4, we have a solution that exposes a subset of the functionality of the main Palantir Foundry Connector for SAP Applications. However, this solution still requires a NetWeaver Application Server on version 7.4 or higher to act as a gateway via which Foundry will connect with the earlier version; this Application Server can be empty.

Licensing and Certification

The HyperAuto SAP Connector is an official SAP-certified solution, which means the connector is installed as an ABAP add-on. You are able to review our certification on the SAP website [here](#).

While the HyperAuto SAP Connector is a certified solution, customers should review the specific terms of their own license prior to using our connector.

