

# **3<sup>rd</sup> Party ETL Tool Certification**

## **SAP HANA Test Plan**

Version 2.0



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## Preface

This document describes the technical criteria and the requirements to replicate data into SAP HANA database using 3<sup>rd</sup> party data replication tools (ETL) which leverage SAP HANA ODBC/JDBC interfaces or custom partner JDBC/ODBC drivers. The objective is to integrate the SAP HANA database with 3<sup>rd</sup> party partner ETL tools and certify the integration by SAP, once the minimum certification requirements are met by the partner ETL tool.

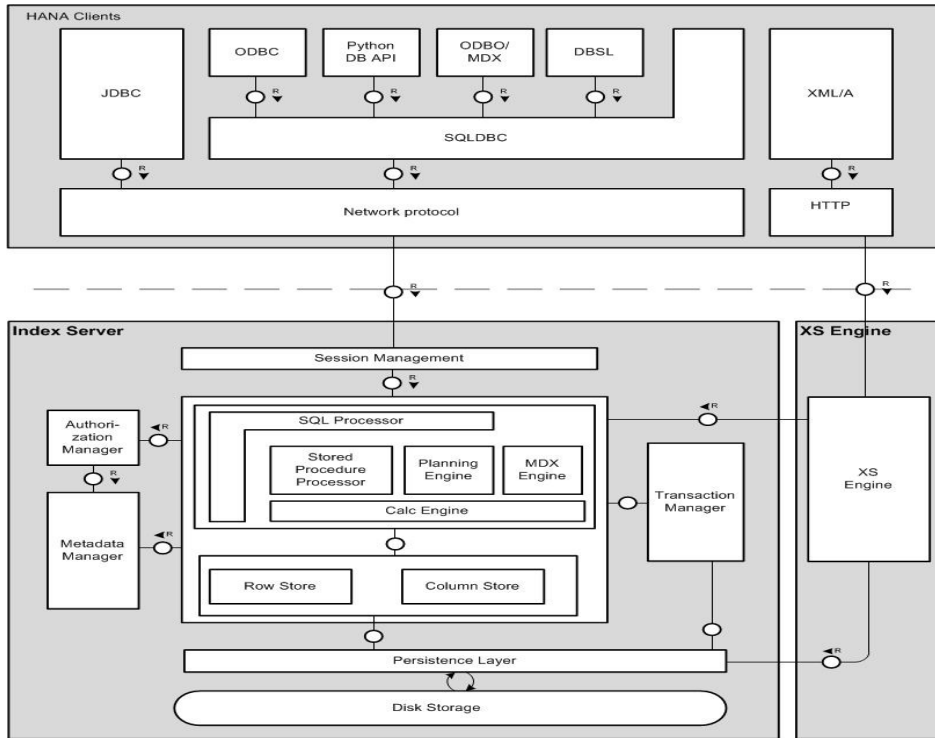
The following sections in the document describe in detail the necessary steps to perform the certification tests.

If you have any issues that you encounter during the certification preparation or have any recommendations to share, please contact your technical consultant or [icc-info@sap.com](mailto:icc-info@sap.com) (with your problem) for assistance during the certification process.

## Introduction

The SAP HANA (in-memory) database supports a wide variety of interfaces: ODBC (for C/C++ based programs), JDBC (for Java applications), ODBO (for analytic applications), and internally the Python DBAPI and SQLDBC as well as others.

SAP HANA database interfaces provide the implementation layer between the SAP HANA database and an application. The supported interface components provide a database access Application Programming Interface (API) for their respective language and environment. For some interface components, the API is defined by a standards body or an application.



Interface	Environment	API Description	Version
JDBC	Java	Java Community Process (JCP)	4.0 +
ODBC	C/C++	SQL Standard (SQL/CLI), Microsoft	3.51 +

Latest supported versions are listed here: <https://launchpad.support.sap.com/#/notes/2499500>

## Certification prerequisites

The following system landscape prerequisites must be deployed by the partners in their lab environment for the SAP HANA certification:

- SAP HANA-2.0 (SP02, latest revision) appliance, or SAP HANA 1.0 SP12
- SAP HANA tooling: Studio, Cockpit and/or Web development workbench
- SAP HANA drivers installed - Latest revision or install your own native drivers
- SAP Data sources connectivity (ECC, ERP, BW, SCM, CRM etc.)
- Non-Sap data sources connectivity (3<sup>rd</sup> party Applications/Databases)
- Partner ETL tool landscape configured and connected to SAP HANA via ODBC/JDBC
- Connectivity to SAP HANA Cloud instance on a supported infrastructure as a service platform -> For cloud based ETL scenarios

## ETL partner platform landscape

The partner will document all their system landscape details during the certification period.

## Technical requirements

This section provides a list of the ETL relevant SAP HANA database features and associated requirements for tighter integration between the ETL tool and the SAP HANA database. A partner ETL tool certified on SAP HANA should enable consumption of these features to the end user for all data replication business scenarios. If your tool has any limitations in supporting these, they should be communicated clearly during the certification process.

Feature /Functionality	Mandatory Requirements for Partners to meet	Check Box
Connectivity	Connect the ETL tool to different Source and Target systems (Sap/non-Sap systems)  SSL, encryption – user-id/password	<input type="checkbox"/>
Data: Read, Write	Mechanism to read and write data to SAP HANA DB	<input type="checkbox"/>
Data: Update	Mechanism to update data to SAP HANA DB	<input type="checkbox"/>
Bulk Data Inserts (Initial Loads)	Mechanism to insert bulk data loads to SAP HANA DB for initial loading	<input type="checkbox"/>
Delta/Incremental Loading (CDC)	Mechanism to insert data to SAP HANA DB for delta loading via Change Data Capture (CDC)	<input type="checkbox"/>
Security (Authentication)	Enable SSO via Kerberos or SAML  All Connections to SAP HANA are expected to support Kerberos.  SAML (Security Assertion Markup Language) Authentication is preferred for browser based tools	<input type="checkbox"/>
HANA Object Types : HANA Data model (Row and Column Tables)	Partner ETL tool design-time environments will support SAP HANA object types such as support for partitioning of tables, max length a field is supported in HANA DB, etc.  Optional: support for dynamic tiering and extended store tables	<input type="checkbox"/>

HANA Repository – Metadata Storage and Lookup	Partner ETL tool will support SAP HANA repository in SAP HANA Studio or SAP HANA web based tooling for all Metadata storage and look up.	<input type="checkbox"/>
Administration	ETL tool supports administration capabilities, tracks the processes threads during runtime, Admin support during disaster recovery & fail over	<input type="checkbox"/>
Monitoring	ETL tool supports monitoring & scheduling capabilities.	<input type="checkbox"/>
Debugging	ETL tool supports debugging capabilities	<input type="checkbox"/>
Error Handling	ETL tool supports error handling capabilities when field/object types are changed inside HANA DB during replication process	<input type="checkbox"/>
Unicode support	Fully Unicode-enabled support	<input type="checkbox"/>
Data Types	Supports special data types ex: Blob, Geo-spatial, etc.	<input type="checkbox"/>
Language	Supports Left to Right or Right to Left languages	<input type="checkbox"/>
LCM tools (Optional requirement)	Provides LCM support for metadata transfer, migration, deployment, upgrades, SAP Solution Manager, CTSPPlus etc.	<input type="checkbox"/>
Documentation	Provide setup guides and document all the necessary steps for the Integration	<input type="checkbox"/>

**Note:** The ETL partner must check and document all the technical requirements from the above list based upon their ETL tool capabilities.

## Test cases

All the test case results (statistics) must be recorded and documented in the table below to measure throughput and performance of the vendor toolset. The test cases must be executed with an ETL user with specific privileges assigned in SAP HANA and must not be executed with “SYSTEM” (SAP HANA) user.

- 1. Data loading into SAP HANA via partner ETL tool using SAP data sources:**  
Capture the statistics of the initial data loading into SAP HANA with different data sizes and volumes. (For example: Hierarchy type tables, Customer master data table, etc.)
- 2. Data loading into SAP HANA via partner ETL tool using non-SAP data sources:**  
Capture the statistics of the initial data loading into SAP HANA with different data sizes and volumes
- 3. Delta data loading into SAP HANA via partner ETL tool using SAP data sources:** Capture the statistics of the delta data loading into SAP HANA using the capabilities of the partner toolset.
- 4. Delta data loading into SAP HANA via partner ETL tool using non-SAP data sources:** Capture the statistics of the delta data loading into SAP HANA using the capabilities of the partner toolset.
- 5. Data loading into SAP HANA cloud instance via partner ETL tool from various data sources:** Load data into SAP HANA to achieve the required throughput using a standard network connection. Also load data into SAP HANA at a certain speed with a standard data model to measure the statistics and threshold. (For Dev/QA SAP HANA landscapes in the cloud. Ex: AWS)
- 6. Error test case:** Break the connectivity between the partner ETL tool and SAP HANA while loading data into SAP HANA, the partner tool must be able to identify the root cause of problem and troubleshoot the error and restart the job to continue the data loading process from where it stopped. Check the data is consistent after the job

**Note:** Test case 6. Is not applicable from a performance perspective.

## Sample test data files



DataSet1.txt



DataSetXMLSchema.xsd

## Performance Summary

Test Case #	Tools	Test Description	# Rows	# Of Columns	Row Size	Elapsed Time (sec)	Throughput (Mb/Sec)	Data Size (GB)	Data Loading per Hr (GB)