SAP Business One Add-On Solution Certification for SAP HANA
Test Plan 1.0

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PREFACE

This document is the test plan for SAP Business One Add-On for SAP HANA Solution certification. The compliance of the delivered Add-On Solution with this test plan will be checked against an SAP Business One reference system.

HOW TO READ THIS DOCUMENT

This document is meant to show an overview of the checkpoints for certification.

INTRODUCTION

Purpose

This document describes the tests to be performed during SAP Business One Add-On for SAP HANA Solution Certification for the integration of an external solution or an Add-On enhancement to SAP Business One version for SAP HANA.

Overview

The requirements for the certification test are mainly grouped as technical and functionality requirements. Unless noted otherwise all the requirements are mandatory.

Test Location

SAP Business One Add-On Solution Certification is performed by the SAP Integration and Certification Center (ICC). Depending on the Add-On Solution as well as the agreement between SAP ICC and the Add-On developer, the certification test can be performed:

- In an SAP ICC laboratory – preferred
- Remotely over an Internet Collaboration Session – optional
- At the SSP location – optional

When testing in an SAP ICC laboratory, SAP ICC will provide the necessary hardware, SAP software (SAP Business One, SAP HANA, SDK etc.) and the database system. The Developer will bring any additional hardware and/or software required together with the Add-On to be certified.

Optionally the certification test can also be performed remotely over an Internet collaboration session. In this case, the vendor will provide the hardware and all required software. The vendor will also be responsible for the associated communication charges during the course of the certification test – internet collaboration session, telephone etc.

Rarely, due to technical dependencies SSPs might prefer the certification test to be performed at their own location – for example, if the Add-On depends on hardware that is not easy to deliver to an ICC laboratory. Then the required hardware and software for the certification test are provided by the SSP. In addition, the SSP will also cover the travel expenses of the ICC consultant.

Test Environment

In addition to the Add-On solution to be certified, the following constitute the necessary environment for the certification testing.

- SAP HANA Database System for SAP Business One
- SAP Business One – the version mentioned in the certification contract
- Latest support packages for SAP Business One
  - Required patch level will be communicated by the ICC consultant
- SAP Business One Test Environment – B1TE and the SAP Business One Test Environment for SAP HANA – B1HTE

Test process

The following lists different tasks that need to be performed for a successful certification test.

- The SSP sends the completed Technical Product Profile (TPP) to the ICC consultant
- ICC consultant reviews the TPP and communicates to finally agree on the functional test cases.
- Utilizing the B1TE and B1HTE tools as needed
  - Technical requirements are verified
  - Functional requirements are verified
- After a successful test, SSP's Add-On is awarded with a Certification certificate
- If one or more of the mandatory tests fails, the test is rescheduled to continue at a later date so that the SSP can correct the missing or non-compliant functionality.

PREPARING FOR THE TEST

Based on the test location, the following subsections outline the preparations necessary for a smooth certification test session.

Test in an ICC Laboratory

In order to perform the certification test in one of SAP's ICC laboratories, the ICC consultant is responsible to prepare the necessary environment.

Hence the ICC consultant will have the following installed before the scheduled certification date.

- Database System
  - By default the SAP HANA database system will be installed.
- SAP Business One System – including the SDK
  - The version specified in the certification contract
  - Unless requested otherwise, the ICC consultant will install the default SAP SBO-Demo database for the region. (e.g. SBODemo_US for Americas)
- Recent SAP Business One support package
  - Unless agreed otherwise, the most recent patch level will be applied.
- SAP Business One Test Environment (same version as the SAP Business One system) and SAP Business One for SAP HANA Test Environment.

The SSP will bring

- the installation (setup) file(s) for the Add-On solution to be certified
- any other required software and/or hardware that is not provided (licensed) by SAP
- two solution licenses to be used during the certification testing
  - If the SSP chooses to comply with the optional technical requirement of using the SAP Business One Licensing mechanism. Otherwise this is not required – see the section 3.2 Licensing (Optional) for more information on this.

Remote test using an Internet Collaboration Session

If the certification test will be performed over an Internet Collaboration session (SAPConnect, WebEx, Live Meeting etc.) the SSP will:

- Schedule the Internet Collaboration session for the date and time agreed with the ICC consultant

- Provide the database system – based on the system requirements of SAP Business One version specified in the certification contract
  - Special cases should be clarified with the ICC consultant before the certification test (e.g. MSDE vs. HANA Server etc.)
- Install SAP Business One system – based on the version specified in the certification contract
- Apply the recent support packages for SAP Business One
  - Based on patch level agreed with the ICC consultant
- Install SAP Business One Test Environment – B1TE and B1HTE
  - B1TE and B1HTE can be downloaded from SAP Developer Network
- Obtain two solution licenses to be used during the certification testing
  - If the SSP chooses to comply with the optional technical requirement of using the SAP Business One Licensing mechanism. Otherwise this is not required – see the section 3.2 Licensing (Optional) for more information on this.

During the certification test session, the ICC consultant will
- provide a link to download a clean SAP Business One database backup
  - Unless requested otherwise, the default SAP SBO-Demo database for the region. (e.g. SBODemo_US for Americas)
  - This database backup will be restored over the SAP SBO-Demo database that the SSP recently installed.

Test at the SSP's office

In general the process outlined in the previous section (Testing over an Internet Collaboration Session) applies.

TECHNICAL REQUIREMENTS

Unless noted otherwise all the requirements listed below are mandatory.

Install/Uninstall

Requirement
The installation process should run smoothly and according to the documentation supplied by the SSP.

Action
- Run the installation
- Check the configuration / customization against the provided documents.
- Verify that the process runs smoothly.
- A few, documented, "manual" changes are allowed. Manual changes are those that a system administrator cannot perform inside the Add-On or SAP Business One or a configuration tool:
  - Editing a configuration file
  - Changing values in the database
  - Direct changes in SAP Business One tables are not allowed
  - Use SAP Business One DB Profiler (B1TE) to check usage of APIs.

Tools
The SAP Business One DB Profiler tracks usage of Business Objects (including UDOs) in the SAP Business One application or DI objects in DI API or DI Server. These should be the only changes in the SAP Business One database tables.

Expected Result
Duration depends on particular Add-On; should in general be finished after a couple of minutes. Only a very few manual changes / configurations to be performed – if at all.

Licensing (Optional)

Requirement
Optionally the SSP may choose to use the licensing mechanism offered in SAP Business One. In order to comply with this requirement, the SSP should have registered the Add-On for licensing and use the mechanism (AddOnIdentifier generated from License Key Name; to be used in Add-On code).

Action
Before assigning an Add-On solution license to the user, the Add-On will be launched.

Expected Result
As the license for the Add-On solution is not assigned to the user yet the Add-On will fail to connect to the API(s).

Remarks
SAP Business One license mechanism is described in detail in the SAP Business One SDK Help Center and the licensing documentation. In addition he requests licenses for the system – including licenses for his Add-On.
When using the SAP Business One license mechanism UI API + DI API work on a named user basis.
An Add-On using only DI Server is not affected by this requirement since DI Server works in a license mode per CPU.

Advanced Database Objects

Requirement
The use of certain advanced database objects such as stored procedures is allowed but others as triggers in the SAP Business One databases are not allowed.

Except the SAP provided stored procedures SBO_SP_TransactionNotification and SBO_SP_PostTransactionNotice, modifying and/or creating as well as executing any SAP or non-SAP stored procedures that are not for querying are not allowed as they:

- may cause conflicts with SAP Business One processes
- cause possible problems during upgrading and/or patching the SAP Business One databases

Therefore the usage of stored procedures in the SAP Business One databases will not be accepted regardless of their purpose as to write and/or extract data. Similarly as they may get erased during upgrades and conflict with SAP Business One processes, triggers are also not allowed in SAP Business One databases.

Please note:
- SBO_SP_TransactionNotification can be used for both propagating information about a change in a Business Object (UDO or standard SAP Business One) as well as interrupting (i.e. rolling back) the propagated transaction.
- Setting the @error parameter to a non-zero value (hence causing a rollback) is allowed.
- For purely transaction propagating purposes SAP recommends to use of the newly introduced stored procedure SBO_SP_PostTransactionNotice.

Expected Result
No triggers and stored procedures added and/or used by the Add-On solution.

Tools
B1HTE

Remarks

The use of advanced database objects in non-SAP Business One databases is permitted. The use of views for extracting data is permitted.

Modifying SAP Business One Data

Requirement

The use of the Data Interface (DI) objects (via DI API or DI Server API) is required to modify (i.e. add, remove, delete) SAP Business One data. In contrast to using DML (i.e. SQLScript queries) queries, this ensures the consistency of the SAP Business One data.

Any additional connection should be indicated to SAP in advance (in the Technical Product Profile). This includes details about its purpose and a description of how intensively it is used in order to plan the tracking of these connections accordingly.

SAP will track opening of connections to the database and check for potential DML actions on SAP Business One tables run through these connections and DML actions run through DI API RecordSet object. Such DML actions are not acceptable for certification.

This rule applies to any table in the SAP Business One database except user-defined tables (UDT) which are not used for user-defined objects (UDO) or any custom tables.

Action

Run the SAP Business One DB Profiler and see the changes logged there to detect lack of usage of DI API / DI Server objects.

The Profiler will be running during the test. At the end of the tests (or at any point of time) the logged information will be evaluated. Unclear results will be discussed. Eventually cases might be retested and investigated more deeply.

Expected Result

Reasonable number of lines in the log (basically every DML call should go through the objects in the APIs). Each test case described to test the Functional Requirements should include a list which objects are expected to be used (ideally, but not mandatory with details about the usage: access / create / update / delete / ...).

Data from SAP Business One tables may only be read according to the preconditions described above in the requirements section.

Tools

B1 DB Profiler:
B1 .NET Profiler (.NET only)
B1 DI Logs Reader

Remarks

DML operations are acceptable with the RecordSet object for user table(s) only.

For other business objects use only the relevant DI objects and not the RecordSet object. Any DML operations on system tables pose a high risk for data corruption, and will not be supported.

For the sake of maximum version compatibility and database system independency the usage of SQL statements should be avoided whenever possible.

Exception / Error handling

Requirement

Errors and exceptions have to be handled correctly.
- When handling transactions via DI API, please note the following:
  - There is only one level of transactions – hierarchical transactions are not supported

- In case of any errors which cause an exception (wrong data format) or failure of a single transaction (Add, Update, etc.) the global transaction will be rolled back.

  Hence any single transaction afterwards will have immediate impact in the data in the SAP Business One database. If this is the case an exception will be thrown when the developer tries to call the function to end the transaction (EndTransaction).

  The SSP is required to describe where this mechanism is used and handle potential error cases accordingly

- When calling the UI API methods please note that any misusage of the UI API methods will result in an exception that the Add-On should handle. Similarly the Add-On should also handle the exceptions that occur in any EventHandler routine.

Action
Error cases may be constructed by SAP based on the test cases provided in addition to the tracking done through the B1 .NET Profiler.

Transaction handling in DI API:
The cases where this option is used have to be specified in the Functional Test section. During the test drive SAP will check these cases. If possible, SAP will take a look at source code and see how a potential failure - e.g. because of how a wrong data format is handled; the entire transaction has to be started again after the user / the Add-On corrected erroneous data.

Exceptions in UI API:
Check the logs of B1 Profiler.

Expected Result
Transaction handling in DI API: The expected behavior is that all operations in a global transaction fail - or all succeed.

Exceptions in UI API: Potential exceptions should be captured and handled by the Add-On – though the UI API might be able to handle them instead in certain cases.

Tools
B1 DB Profiler
B1 .NET Profiler
B1 DI Logs

Compliance with SDK guidelines

Requirements
SDK Guidelines can be found in the SAP Business One SDK Help Center and must be followed.

Documentation of event handlers

Requirement
Complete documentation of event handlers (i.e. handling the calls originating from SAP Business One forms) has to be provided by the SSP.

Action
In addition to manually verifying the functionality of the user interface, the B1 Event Bubble Checker (B1TE) will be configured to track UI events to identify possible cases where the events are blocked by the Add-On.

This will be compared with the information given in the TPP.

Expected Result
The information in the B1 .NET Profiler and the B1 Event Bubble Checker should match with the information provided in the TPP / user documentation.

Remarks
It is important for the customer to know about differences between the functionality described in the documentation of the SAP Business One application and the entire solution – i.e. standard SAP Business One + the Add-On solution.

Tools
B1 Event Bubble Checker
B1 .NET Profiler

Compliance with Screen Design Guidelines
Requirement
The Add-On solution should integrate with SAP Business One seamlessly.
Following the SAP Business One User Interface Standards and Guidelines will improve usability and consistency of the integrated solution.

Action
Basic layout checks are done through the tool B1 Form Checker (B1TE).
Forms and Menus will also be checked visually for the look and feel as well as the functionality.

Expected Result
The B1 .NET Profiler and B1 Form Checker will be running during the test. The B1 Form Checker should not list errors.
Depending on the results (e.g. errors or warnings generated) SAP might need to run additional or more intensive checks and may find that the Guidelines are formally met, but the integration is too far from being seamless. This is the overall goal of the Guidelines and the checks.

Tools
B1 Form Checker
B1 .NET Profiler
B1 Debug Information option

Remarks
The use of ActiveX controls might be critical and should be described in the in detail in the TPP.
In general displaying images via an ActiveX control is allowed. However, SAP provided controls should be used where applicable.

Extending SAP Business One GUI

Requirement
The use of the SAP Business One SDK User Interface (UI) API is required to extend the SAP Business One GUI.
The UI API shields the GUI of the SAP Business One application from corruptions due to incompatible changes performed by an Add-On program. In addition it should be ensured that a solution integrated into SAP Business One GUI provides a seamless look & feel to the end-user.
An Add-On solution should therefore not hook on SAP Business One forms window handles to display screens.

Action

During the session, SAP will have the B1 .NET Profiler running aside the solution and keep an eye on the logs. In case a window is hooked on to SAP Business One forms, there will be no logs of events in B1 .NET Profiler for this window.

Expected Result

Partner Add-Ons should not use such a mechanism.

Tools

B1 .NET Profiler (.NET only)

FUNCTIONALREQUIREMENTS

Requirement

Partner should provide information about the purpose of the Add-On solution including test cases.

Tools

Potentially scripting tools (maybe using UI API – or Windows mechanisms) could be used where applicable.
The test cases in section 5.1 of the TPP will be copied into the Certification Test Report.

STABILITY/PERFORMANCEREQUIREMENTS

If applicable, performance/load testing will be performed for the Add-On.
These performance/load test cases will determine if the product can handle a number of users or amount of data without running out of resources or having transactions suffer excessive delay.

Requirement

Mechanisms used to process data should be suitable for its purpose.
The test cases in section 5.2 of the TPP will be copied into the Certification Test Report.

APPENDIX

Test Tools

A short description of the SAP Business One Test Environment – B1TE and B1HTE - can be found below. For more information please see the documentation that comes with B1TE and B1HTE.

B1HTE Object Test

SAP Business One DB Browser is a stand-alone tool to browse through the SAP Business One database table definitions.
SAP will verify the DB structure for namespace compliance.

B1 DB Profiler – at this time not available for SAP HANA certification.

B1 DB Profiler tracks usage of DI objects.
Check log of B1 DB Profiler, if applicable, to detect lack of usage of DI API / DI Server objects. Direct writes will appear different from DI object usages in SQL Profiler.

B1 .NET Profiler

Tool will be used to track calls to UI API and DI API. Applicable for .NET based Add-Ons.

B1 DI Logs Reader

Tool to be used to track calls to DI API. Applicable for any add-on developed using DI API or Java Connector.

B1 Form Checker
Tool will check basic compliance with Standards & Guidelines (namespace usage for menus, form types, form UIDs) and Screen Design Guidelines (distance from border, size on UI elements etc.).

B1 Bubble Checker
Tool to track the events that the Add-On blocks to propagate to other event handlers.

B1HTE

B1HTE has a list of tests designed to validate HANA object creation and definition. All of the tests are designed to check the SAP HANA database content and the compliance with the general SAP Business One SDK guidelines. Please read the documentation for more details on the scope of the tool.