SAP Solution Manager

Business Process Change Analyzer How-to guide

Applicable Releases:

Solution Manager 7.1 SP12

Target groups:

Technology Consultants

Application Consultants

Version 12

April 2014

Rajeev Gollapudi, Active Global Support, SAP Labs India

Document History

Document Version	Description
1.0	For SAP Solution Manager Ehp1 SP18
2.0	For SAP Solution Manager Ehp1 SP20
3.0	For SAP Solution Manager Ehp1 SP20 – updates
4.0	For SAP Solution Manager Ehp1 SP23 - updates
5.0	For SAP Solution Manager 7.1 SP2
6.0	Additional notes
7.0	For SAP Solution Manager 7.1 SP5
7.1	Additional updates for SAP Solution Manager 7.1 SP5
8.0	Additional updates for 3rd party integration
10.0	For SAP Solution Manager 7.1 SP10
10.1	HP ALM integration details
10.2	UPL Troubleshooting
10.3	Restructuring document
12	For SAP Solution Manager 7.1 SP12

Typographic Conventions

Type Style	Description
Example Text	Words or characters quoted from the screen. These include field names, Screen titles, pushbuttons labels, menu names, menu paths, and menu options.
Example text	Emphasized words or phrases in body text, graphic titles, and table titles
`Example text`	File and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.
Example text	User entry texts. These are words or characters that you enter in the system exactly as they appear in the documentation.
<Example text>	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
`EXAMPLE TEXT`	Keys on the keyboard, for example, `F2` or `ENTER`.

Icons

Icon	Description
	Caution
	Note or Important
	Example
	Recommendation or Tip

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1. Introduction

SAP-centric solutions are changed through SAP or customer triggered change events which require customers to test their business processes thoroughly. The identification of the test scope is a crucial activity that determines the time and effort needed to perform the test. Since changes to SAP-centric solutions constitute the main cause of various testing activities, it is important to differentiate between the types of SAP solution change.

Planned changes to a SAP solution are motivated by a wide range of reasons:

- Maintenance in the form of SAP support packages and legal change packages
- Functional improvements in the form of SAP enhancement packages
- Changes to the configuration
- Adjustments to interfaces for SAP partner or third-party applications.
- Custom developments

For these types of change the recommended approach for test managements is to

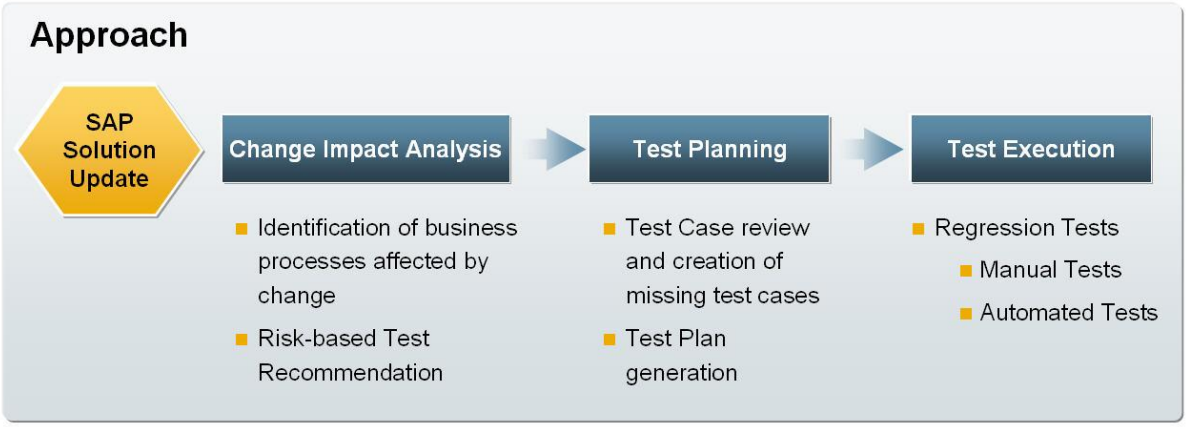
1. Do an initial risk assessment on the effects the change has on critical business processes.
2. Based on the impact analysis results, plan for testing only those business processes which are affected by the change and optimize the test scope if necessary.
3. Execute the test cases for the affected business processes either manually or using the automated test scripts.

SAP Solution updates occur frequently

- SAP triggered: Support Packages, Enhancement Packages
- Customer triggered: Customizing changes, Custom code development

Customer Pain Point

- Which business processes are affected by planned change?



Currently to follow such an approach to test management, there are two main pain points for SAP customers

- Difficulty in identifying critical business processes affected by change events.
- Difficulty in arriving at test recommendations for these change events.

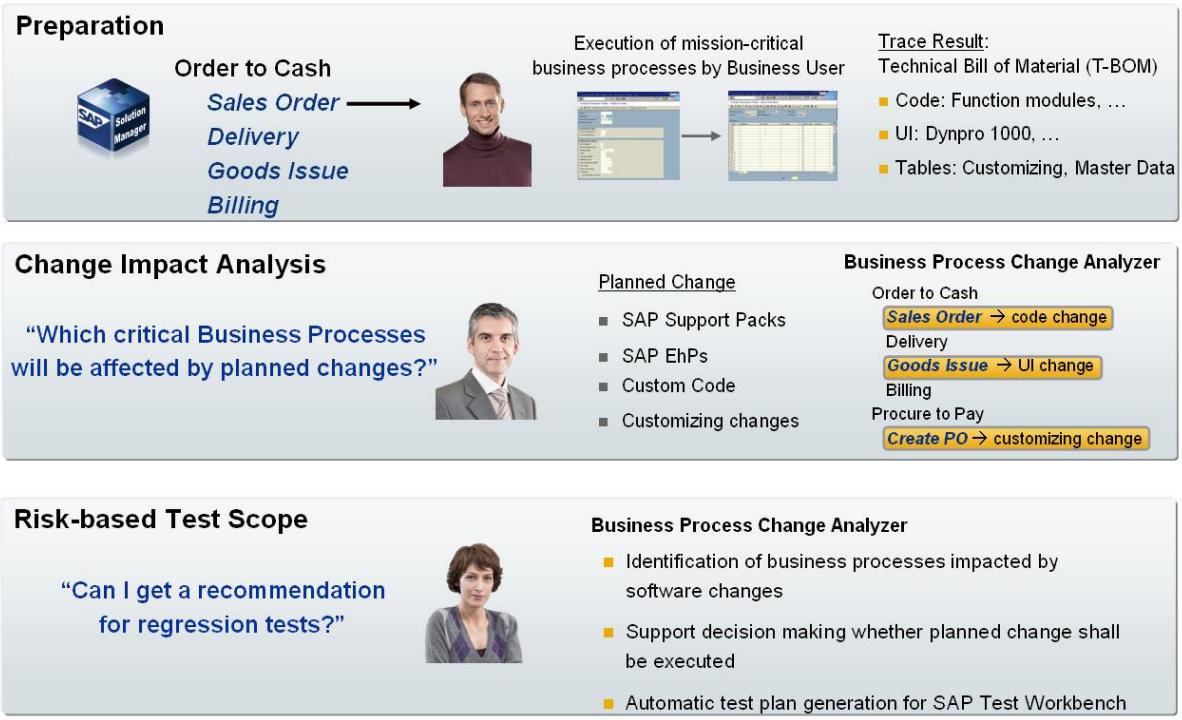
In order to address these pain points, SAP Solution Manager 7.0 EhP1 (SP18) introduced a new type of analysis application called "**Business Process Change Analyzer (BPCA)**" capable of performing change impact analysis and identifying the potential impact on critical business processes.

The purpose of this application is to identify core business processes which are affected by a change. This is done by comparing the Technical Bill of Material (TBOM) which lists the SAP objects that are used when business processes are executed with the detailed information about the objects affected by a change event. This allows the customer to make the intended change at the planned time or a later point if there is not enough time to run a satisfactory regression test on all affected areas.

In SAP Solution Manager 7.1 SP10 this application was significantly enhanced and this document gives step by step instructions, tips and tricks on how to prepare and use the Business Process Change Analyzer application as of this new release.

1.1 Business Process Change Analyzer - Overview

Business Process Change Analyzer is an application which helps in executing a change impact analysis and allows the customer to do a risk based test planning and execution. It is part of the end to end Integration Testing standard for SAP Solutions. The below picture shows the different phases of Business Process Change Analyzer



There are three broad phases in the usage of BPCA.

- **Preparation**: In order to prepare for a change impact analysis, we need to make sure the business processes are well documented in a Project or a Solution within SAP Solution Manager. BPCA expects the following information be documented in SAP Solution Manager
    - Business Processes Hierarchy: Business process steps need to be maintained in a SAP Solution Manager Project or Solution. A guideline of how to do this is also available as part of the Solution Documentation standard for SAP Solutions. At a minimum, the core business processes with their steps need to be documented for the purpose of BPCA
    - Associated Transactions: Each of these business process steps should also be associated with the corresponding transactions in the target managed system.

    - TBOMs: Technical Bill of Materials is collected for each transaction associated with various business process steps. This is done when the user executes these business process steps, while a trace running in the background collects information of all SAP objects touched during this execution. This is a mandatory documentation step which is needed for all critical business process steps for evaluating them against any changes using BPCA.
    - Business Process steps associated with Test Cases: To be able to use BPCA to generate regression test plans, the test case information should be documented at each process step (in turn for each transaction being evaluated). This should be done in the SAP Solution Manager Business Blueprint tool. These test cases can be either manual or automated.
- **Analysis**: Once all the preparation steps are done, we will be ready to analyze any changes to find out the impact on the business processes. We can then identify the critical business processes which are affected by the planned change by analyzing the changes using the transport requests which represent these changes. There are 3 different kinds of change events that can be analyzed using BPCA
    - Support Packages shipped by SAP
    - Customizing changes
    - Code/UI changes
- **Risk based test scope optimization**: Once the affected business process steps and the corresponding transactions are known, we will then be able to optimize the test scope based on test coverage, test efforts and process priorities and then create test plans to do regression testing for these process steps/transactions.

To ensure as much accuracy as possible, it is recommended that the TBOMs should be created dynamically at run time to record all the SAP objects used in the business process variant and not statically on the source code. To this end, the customer executes the critical business processes in an appropriate system again. As the processes are being executed, the BPCA records all of the SAP objects (module pools, function modules, configuration and master data tables, interfaces, and so on) that are used and generates a technical bill of materials (TBOM) that is assigned to the business process using the SAP Solution Manager Business Blueprint.

If SAP support packages, SAP enhancement packages, custom developments, or configuration adjustments shall be implemented later on, the business processes that are affected can be identified with the BPCA. These analyzes can be saved with a time stamp and contain very detailed information that can be used for subsequent test applications.

Customers can use the test cases contained in the Business Process Hierarchy to create test plans that are tailored to the relevant changes.

2. Technical Prerequisites

For being able to analyze the impact and appropriately plan for a software change using BPCA, we need to have the following pre-requisites

2.1 Solution Tools Plug-in" (ST-PI) installed on managed systems

The latest Solution Tools Plug-In add-on is required to be installed on the managed system for Business Process Change Analyzer to work, please refer to SAP note 539977 for release strategy for this Add-on.

All remote/managed systems also need to have kernel version 4.6x or 7.xx for dynamic TBOM recording. For static TBOM recording, there are no kernel requirements.

Please refer to the SAP note 1316524 for more information on the pre-requisites for BPCA.

For working SAP Solution Manager 7.1 SP10 features like UPL based semi-dynamic TBOMS you need ST-PI SP08 or higher.

2.2 Connect managed systems to SAP Solution Manager

BPCA requires that the managed systems are connected to SAP Solution Manager system. Various functionalities of BPCA require RFC destinations to be defined between SAP Solution Manager and the managed system. Below table shows the requirement of the type of RFC by each of the features of BPCA

Step	Primary RFC	Secondary RFC
To create a dynamic TBOM	Trusted RFC	Login RFC
To create a static TBOM	Trusted RFC	Read RFC
Search for Transport Requests in the managed system	Read RFC	Trusted RFC
To execute a change impact analysis	Read RFC (SAP Note 1623668)	Trusted RFC
To find business functions in the managed system	Read RFC	Trusted RFC
To create TBOMs for transactions which spawn off background jobs	Trusted RFC	
Outdate Check	Read RFC	Trusted RFC
TBOM creation using Work Item	Trusted RFC	Login RFC
TBOM Creation using TAF	Trusted RFC	Login RFC
TBOM creation using SAP TAO	Trusted RFC	Login RFC

In the above table, the secondary RFC is used if the primary one is not available.

You can use the SAP Solution Manager Basic Configuration application (transaction SOLMAN_SETUP) to connect the managed system to SAP Solution Manager

2.3 Authorizations and User parameters

2.3.1 SAP Solution Manager System

The following authorizations are needed by users of BPCA to be able to create and analyze T-BOM
Composite Role: SAP_BPCA_ALL_COMP

Authorization: TBOM creation, BPCA Analysis creation, Test Plan creation

Single Roles:

SAP_SMWORK_BASIC_TEST_MAN
SAP_SMWORK_ITEST
SAP_SM_BPCA_RES_ALL
SAP_SM_BPCA_TBOM_EXE
SAP_SM_SOLUTION_DIS
SAP_SOLAR01_ALL
SAP_SOLAR02_ALL
SAP_SOLMAN_DIRECTORY_DISP
SAP_SOL_KW_ALL
SAP_SOL_PROJ_ADMIN_DIS
SAP_STWB_WORK_ALL

For more information please refer to
http://service.sap.com/instguides -> SAP Components --> SAP Solution Manager -> Release 7.1 -> 4 Operations -> Security Guide SAP Solution Manager 7.1
Look for the section "Business Process Change Analysis (BPCA) in the Solution Manager System"

Composite Role: SAP_BPCA_CONF_COMP
Authorization: Configuration activities for SAML and HP ALM integration.

Apart from the above required authorizations the following are the optional User Parameters

Parameter ID: AGS_BPCA_TBOM_EXPERT

Value	Description
1	The TBOM tab is preselected in the attributes dialog
2	Technical data, filter(s) and lock are available in the TBOM dialog
3	Option "Static" is available for creating the TBOM

.

Parameter ID: AGS_BPCA_TB_FR_TWKL

Value	Description
X	The TBOM creation is possible from the tester worklist.
<blank>	The TBOM creation is not possible from the tester worklist.

Parameter ID: AGS_TBWI_EMAIL_OFF

Value	Description
X	The user does not receive any emails from the TBOM worklist.
<blank>	The user receives emails from the TBOM worklist.

2.3.2 User for TBOM Recording with eCATT scripts

To record TBOM recordings of automatic test cases, you have to create a user in SAP Solution Manager and in the managed system. The recording runs under the name of this user, which should be used only for TBOM recording using eCATT.

Note: During TBOM recording, the system records **all** actions that take place with this user. Since automatic test cases are executed from Solution Manager on the managed systems using RFC, the definition of the RFC connections is decisive for the user that you are using to execute the automatic test cases. We strongly recommend using RFC connections with fixed users for the TBOM recording of automatic test cases.

Requirements

You have set up a trusted RFC connection to the managed system.

Activities

Create a user

1. Create a dialog user.

Assign a role

2. Assign role SAP_BPCA_ECATT_COMP to the user.

   Note: Copy the role into your own namespace, define individual roles and assign the role to your user.

2.3.3 Authorizations on the Managed System

Needed User Roles in Managed System:

In addition to the application related user roles e.g. for the business transaction an additional role SAP_SM_BPCA_TBOM is needed which is part of software component ST-PI 2008_01_xxx

The following authorizations should be included:

Authorization Object: S_RFC ACTVT: 16, RFC_NAME: E2E_TESTING_AGENT, SUNI, RFC_TYPE: FUGR
Authorization Object: S_ADMI_FCD Value: PADM, STOM, STOR
Authorization Object: S_DATASET ACTVT:06, 33 FILENAME: *

PROGRAM: SAPLE2E_TESTING_AGENT
Authorization Object: S_PATH ACTVT: 01, 02, 03, 06 FS_BRGRU: *

Latest version of the role is attached to note 1560714.

2.3.3.1 Authorization to use Trusted RFC logon

The most convenient way to navigate to the managed system without additional logon is realized via trusted RFC connection that is by default setup with the SOLMAN_SETUP wizard. To be able to use this feature the relevant users need the authorization S_RFCACL on both systems. Please note that due to security reason this authorization is not part of the standard profiles SAP_ALL and SAP_NEW.

2.3.4 Business Partner

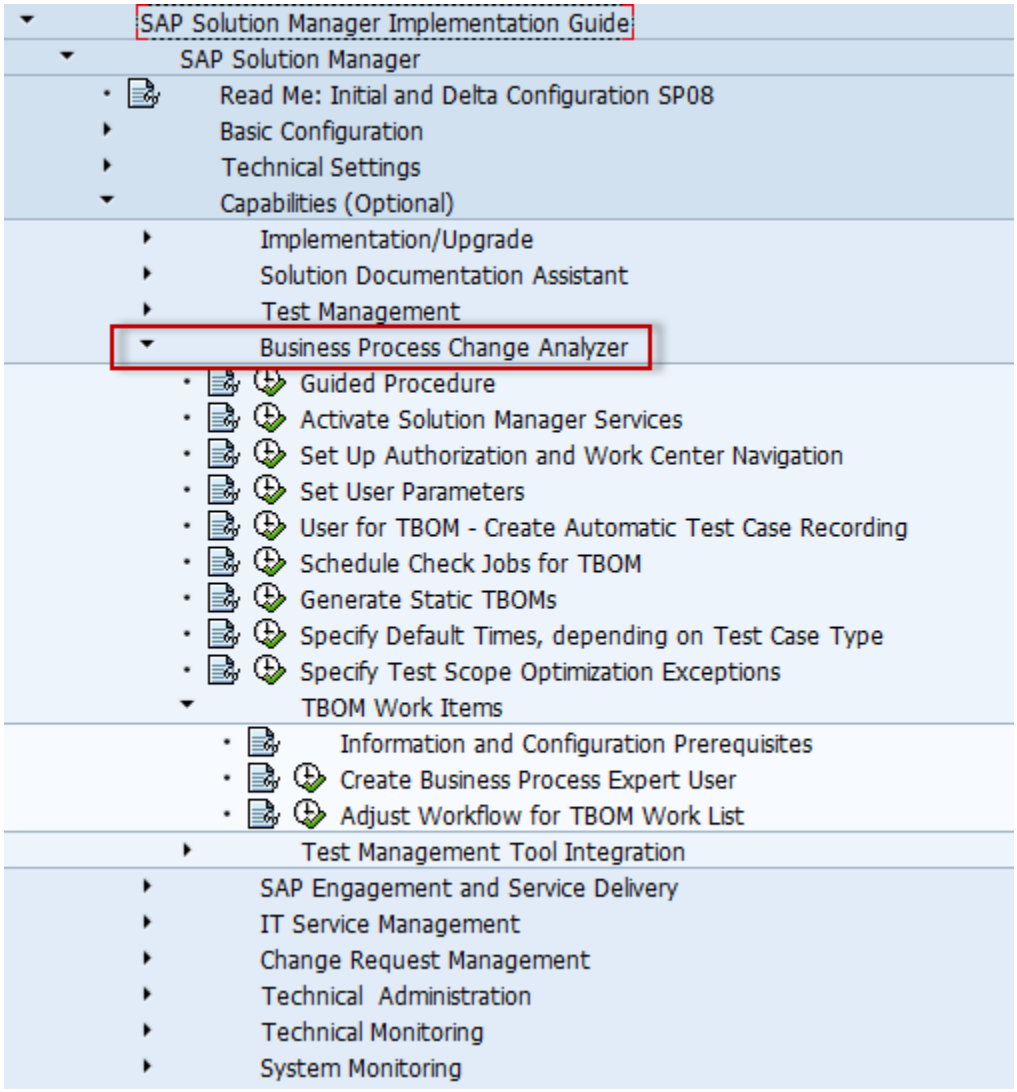
To be able to use the TBOM work items, business partners are required for each involved user.

Report to create users and/or business partners based on existing users in managed systems: AI_SDK_USER_BP_GEN

http://help.sap.com/saphelp_smehp1/helpdata/en/85/390f6e3c534892b18f5ec4212d0571/frameset.htm

2.4 Further Configuration Steps

Please check the IMG activities for further configuration steps in addition to the required users, parameters and authorizations described above:

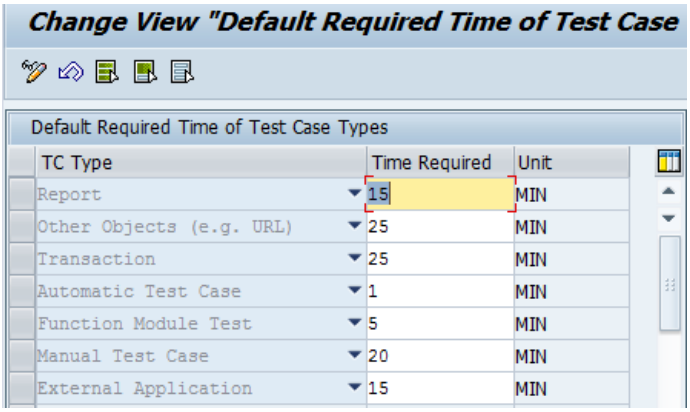


At least the following customizing steps should be considered in advanced before starting the implementation of an example:

Specify Default Times, depending on Test Case Type

Expected Test Effort per test case is put into consideration during Test Scope Optimization. The default values per test case type can be defined as follows:

Test Management Work Center → Administration → Default Required Time of Test Case Types

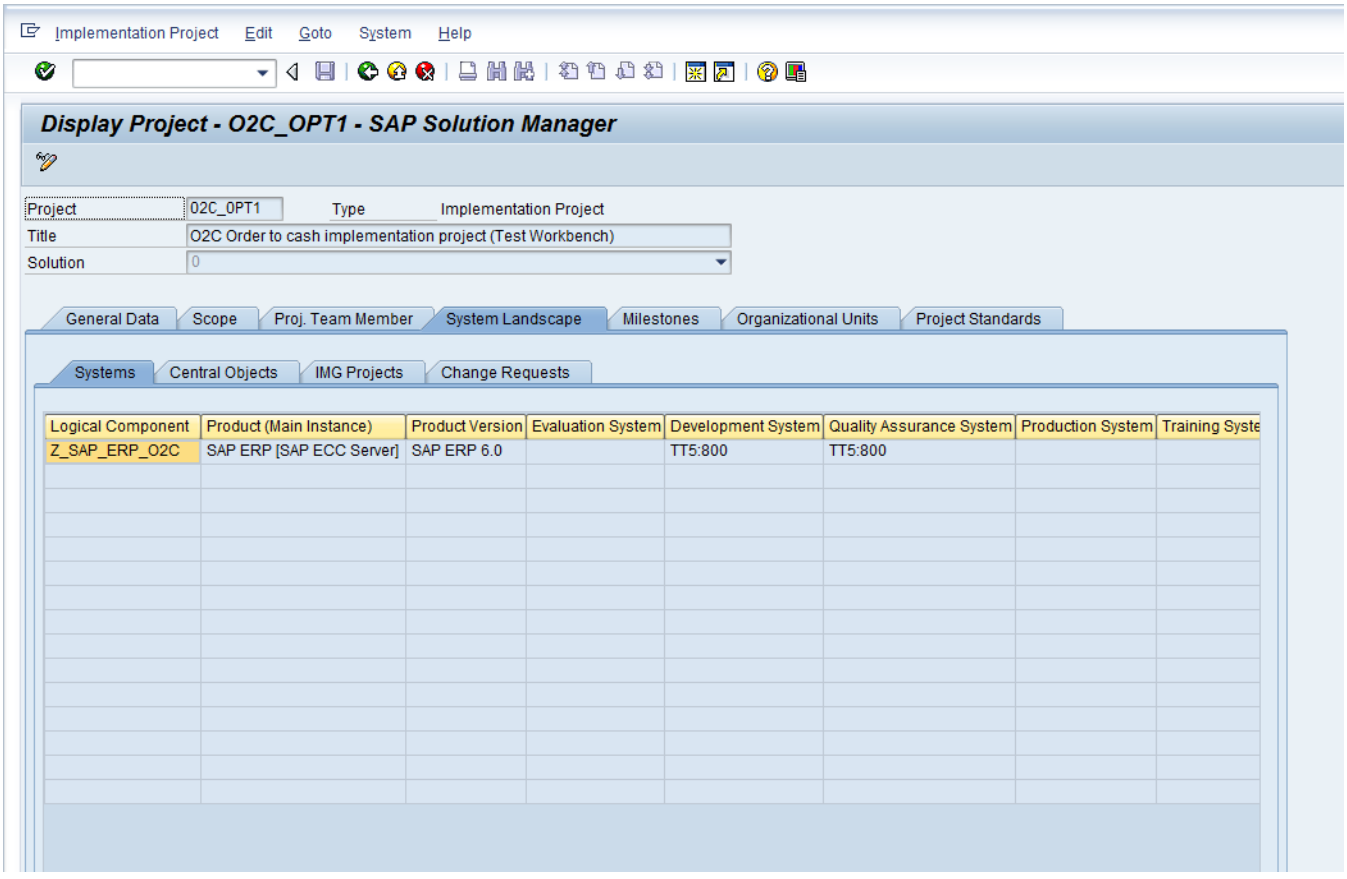


3. BPCA Preparation: Business Process Documentation

For preparing for analysis of business process using BPCA, we need make sure the project which has the critical business process we want to analyze are defined, has Technical Bill of Materials(TBOM) created. We need to create the TBOMs if they are not present using the SAP Solution Manager Business Blueprint. The following sections describe how to evaluate the project and then create the TBOMs if necessary.

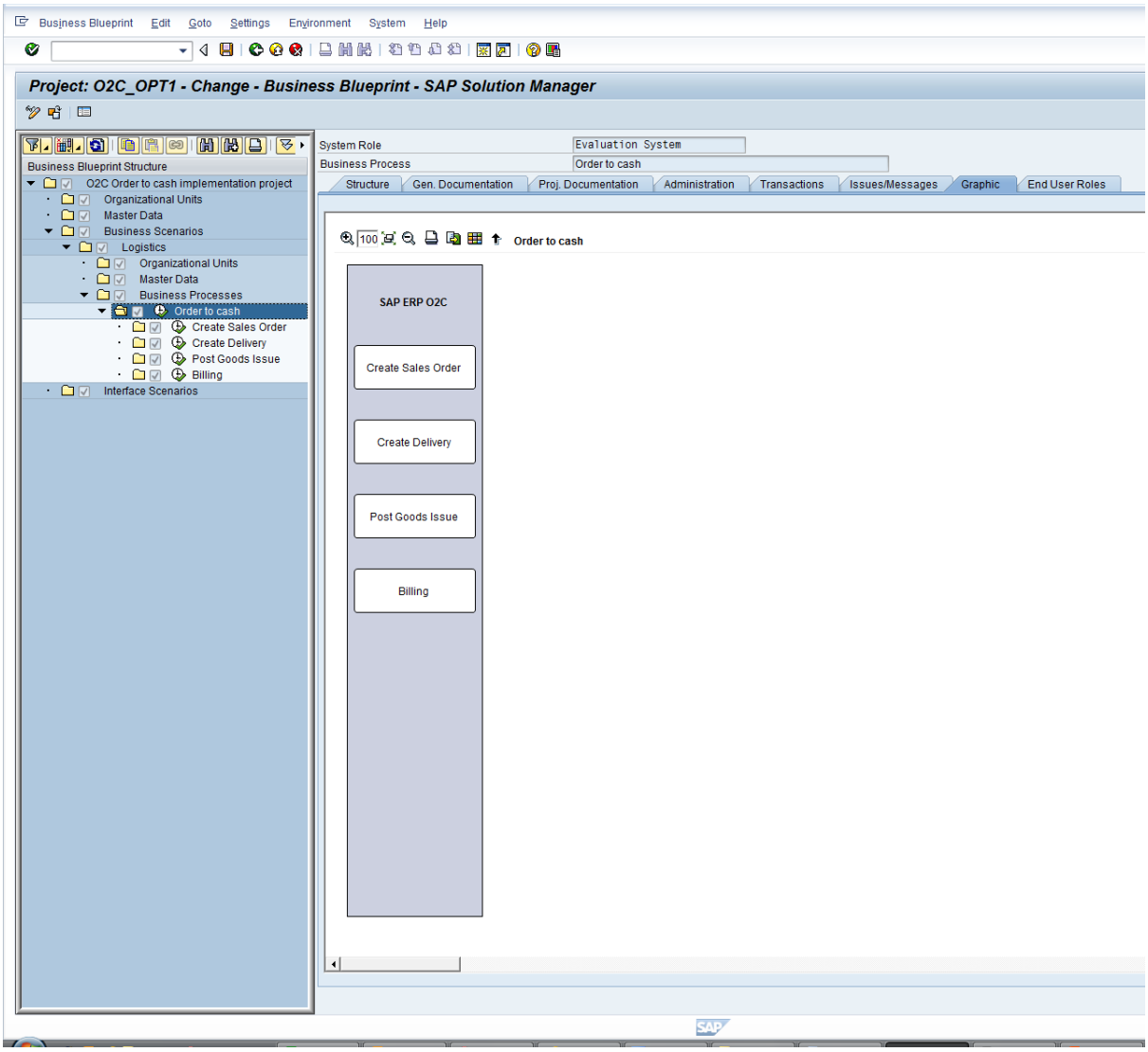
BPCA uses a SAP Solution Manager Project or Solution as the basis for analysis and also for structuring the results. The project to be used for BPCA should have the following configuration

1. Managed Systems are connected with Project / Solution. The screenshot below shows the details of the project “O2C_OPT1” in the Project Administration transaction (SOLAR_PROJECT_ADMIN). We can see that an SAP ERP 6.0 system "TT5" has been added as a managed system under the system landscape tab for the project "O2C_OPT1"



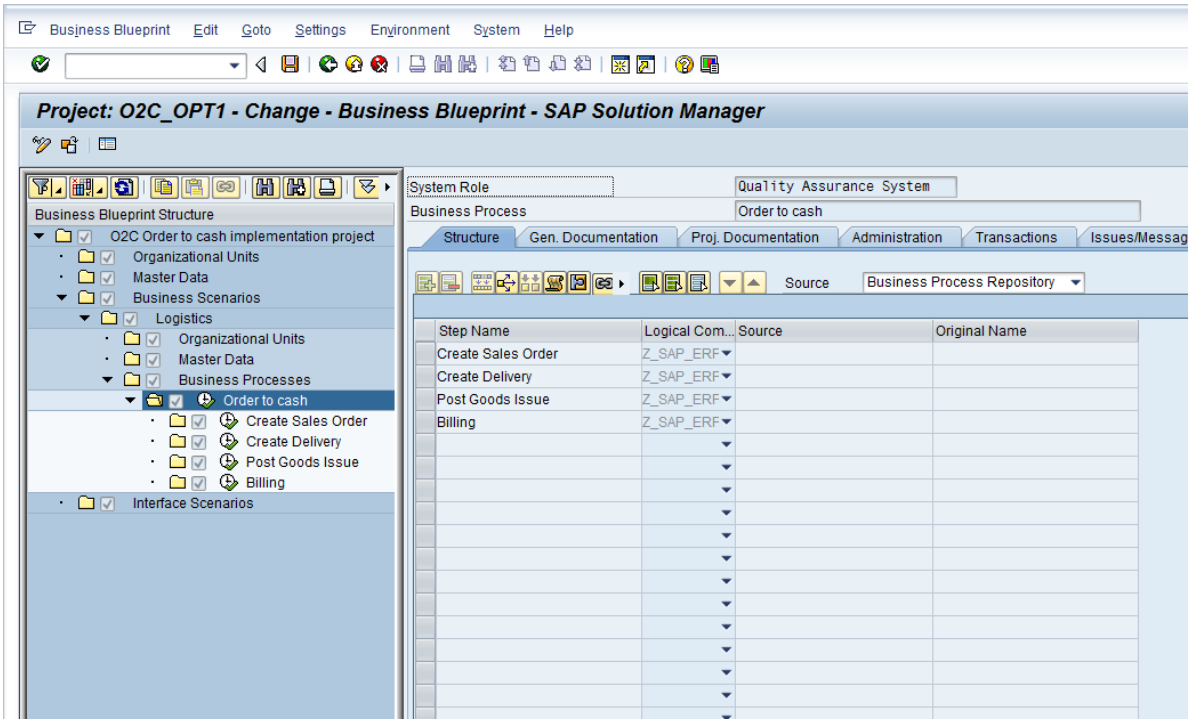
2. Business Processes must be defined in SAP Solution Manager within Project or Solution
    a. At least mission-critical processes shall be defined in Project / Solution
    b. Define Customer Attribute to assign priority to Business Process Priority

    The below screenshot shows the business process hierarchy for the project "O2C_OPT1"

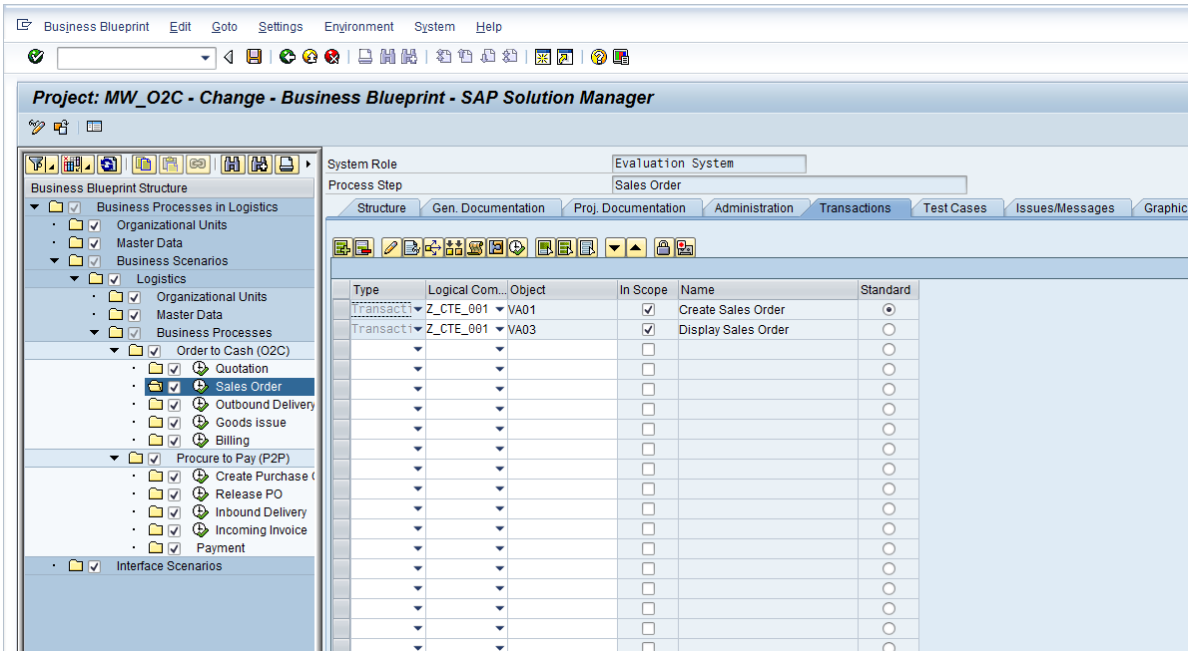


3. Managed systems must be assigned to Business Processes steps via Logical Components

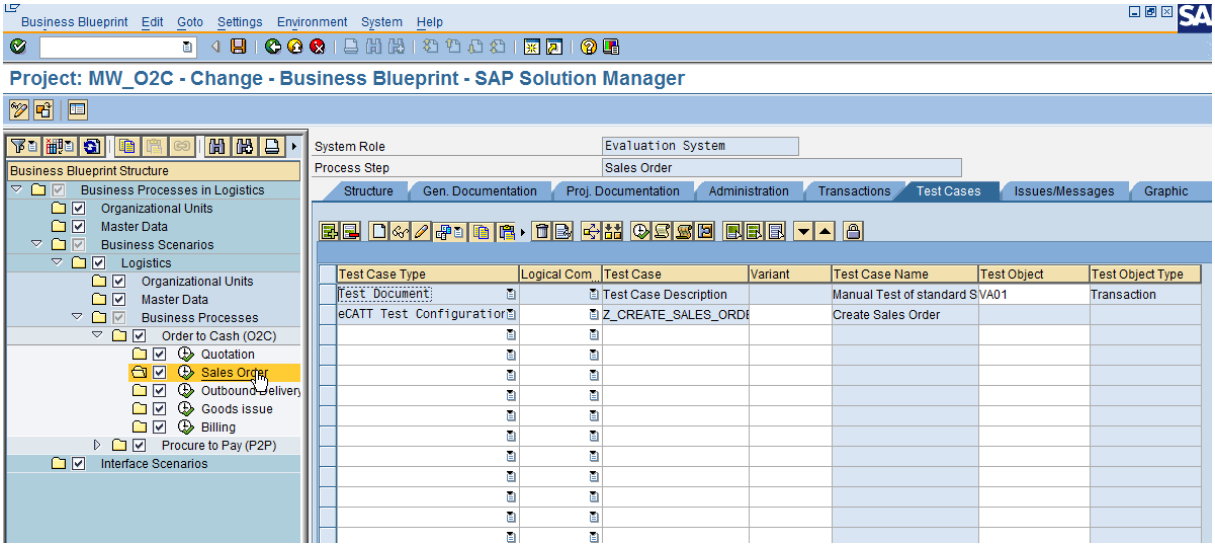
    Below screenshot shows individual business process step for the Order to Cash business process under the O2C_OPT1 project associated with the corresponding logical components.



4. We need to make sure that transactions are associated with the relevant business process steps. In our example, we have associated all relevant transactions to the individual business process steps. If the business process hierarchy is created using the "Business Process Repository", there is no need to manually associate the transactions to the business process step. The screenshot below shows the transactions associated with the Business process step "Create Sales Order" under the project "O2C_OPT1"



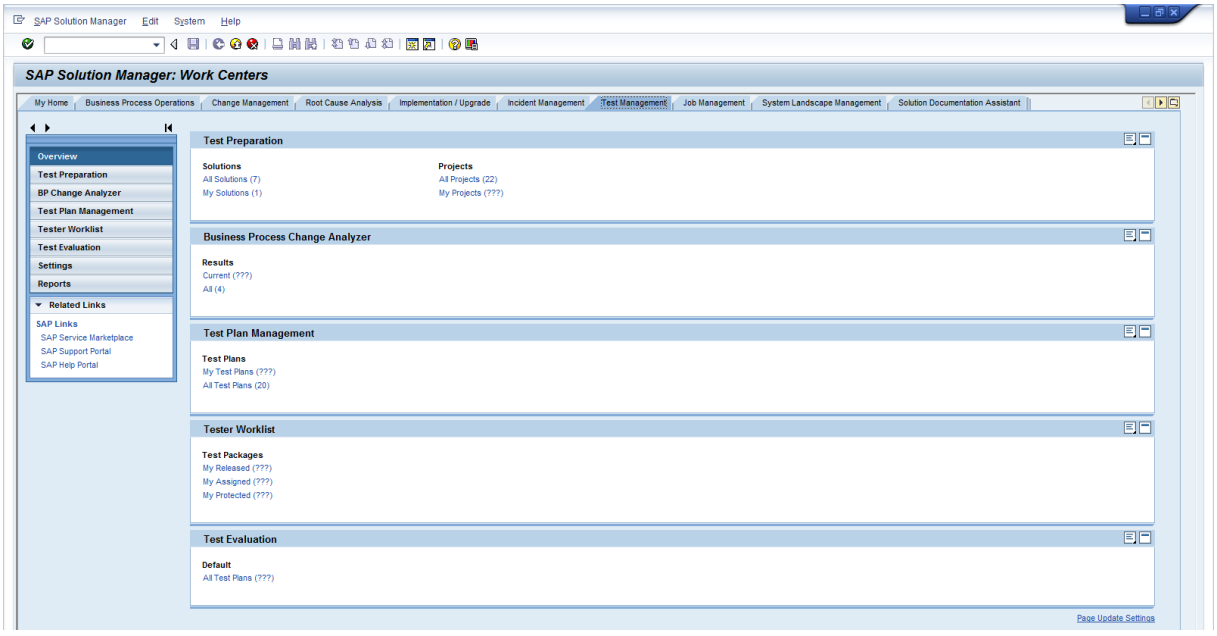
5. We need to make sure that Test cases (manual or automated) are associated with the relevant business process steps. Without these test cases we will not be able to generate the test plans for regression testing after doing an impact analysis. The below screenshot shows the test cases associated with the business process step "Sales Order" under the project "O2C_OPT1"



3.1.1 Identify and mark critical business processes

The criticality of a business process can be set in the business blueprint of a project which has these business processes documented. This criticality setting can then be used in prioritizing the business processes during Test Scope Optimization and also as a filter while generating an analysis result using BPCA.

Step 1: Go to Test Management work center in Solution Manager using the Transaction SOLMAN_WORKCENTER. Below screenshot shows the overview screen of the test management work center.



Step 2: Go to Test Preparation view. Select the "projects" sub-view. Within “projects” sub-view, select the “all projects” active query.

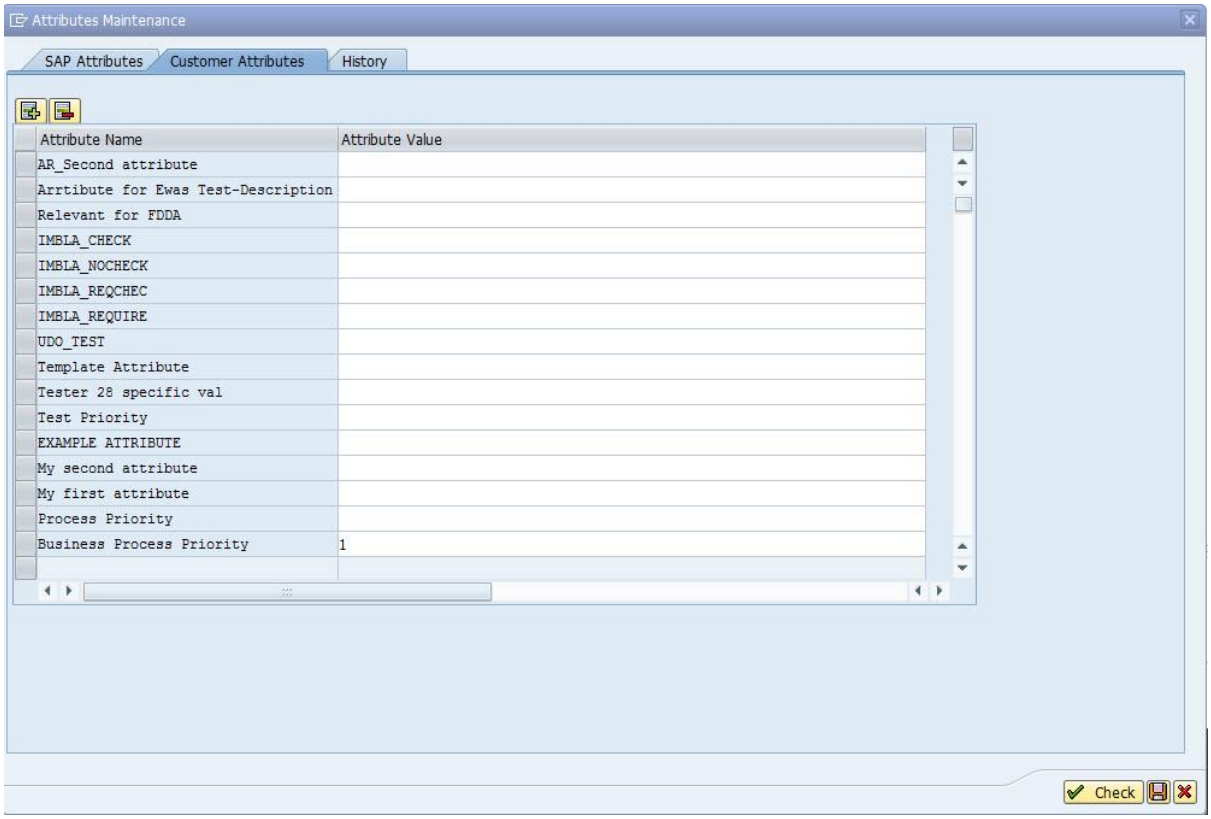
Step 3: Select the project "BPCA_TRN"

Step 4: Select "Business Blueprint". Click “open” in the file download dialog box. After clicking “allow” in SAP GUI security dialog box, we will be taken to the Business Blueprint screen for the project "BPCA_TRN" in SAP GUI.

Step 5: Navigate to the "Business Processes" in the business process hierarchy.

Step 6: Select a business process for which you want to change the business process priority and right-click it to choose the attribute from the menu. In our example we will choose the "Order to Cash" business scenario.

Step 7: In the attribute screen go to the custom attributes tab.



Step 8: Here you can change the business process priority to "1" to indicate that this "Order to Cash" business process has higher priority.

Note

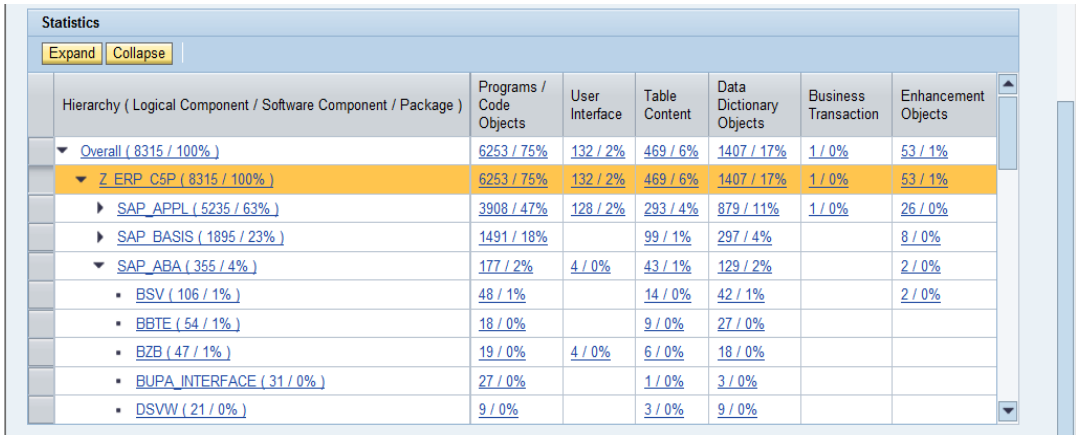
The custom attribute has to be defined using the SAP Solution Manager Implementation Guide (IMG Guide: Transaction SPRO). For more details please look at section 8.6 in this document.

4. BPCA Preparation – Technical Bill of Material (TBOM)

4.1 Technical Bill of Materials

Customers should run through the business process transactions so that BPCA can collect the SAP technical objects used during the execution of the business process. This collection of technical objects is called technical bill of materials or TBOMs

For example, to create a TBOM for the business process step “Create Sales Order” which is executed using the transaction “VA01” in the ERP system, the user has to go to SAP Solution Manager and run the business process transaction (in this case VA01) – by giving the required input parameters and completing the creation of sales order. BPCA will enable a trace on the ERP system and collects all the SAP objects used during this execution. This list becomes the TBOM for the process step “Create Sales Order”. Below is a screenshot of the TBOM created for one such execution of the transaction VA01,



Hierarchy (Logical Component / Software Component / Package)	Programs / Code Objects	User Interface	Table Content	Data Dictionary Objects	Business Transaction	Enhancement Objects
Overall (8315 / 100%)	6253 / 75%	132 / 2%	469 / 6%	1407 / 17%	1 / 0%	53 / 1%
Z_ERP_C5P (8315 / 100%)	6253 / 75%	132 / 2%	469 / 6%	1407 / 17%	1 / 0%	53 / 1%
SAP_APPL (5235 / 63%)	3908 / 47%	128 / 2%	293 / 4%	879 / 11%	1 / 0%	26 / 0%
SAP_BASIS (1895 / 23%)	1491 / 18%		99 / 1%	297 / 4%		8 / 0%
SAP_ABA (355 / 4%)	177 / 2%	4 / 0%	43 / 1%	129 / 2%		2 / 0%
BSV (106 / 1%)	48 / 1%		14 / 0%	42 / 1%		2 / 0%
BBTE (54 / 1%)	18 / 0%		9 / 0%	27 / 0%		
BZB (47 / 1%)	19 / 0%	4 / 0%	6 / 0%	18 / 0%		
BUPA_INTERFACE (31 / 0%)	27 / 0%		1 / 0%	3 / 0%		
DSVW (21 / 0%)	9 / 0%		3 / 0%	9 / 0%		

In the above example, the TBOM for VA01 transaction has a total of 8315 objects. Observe that different kinds of objects have been collected, like we see there are 6253 program or code objects, 132 user interfaces, 469 table content and so on. These numbers will differ for different customer situations and also different execution variants of the same transaction code.

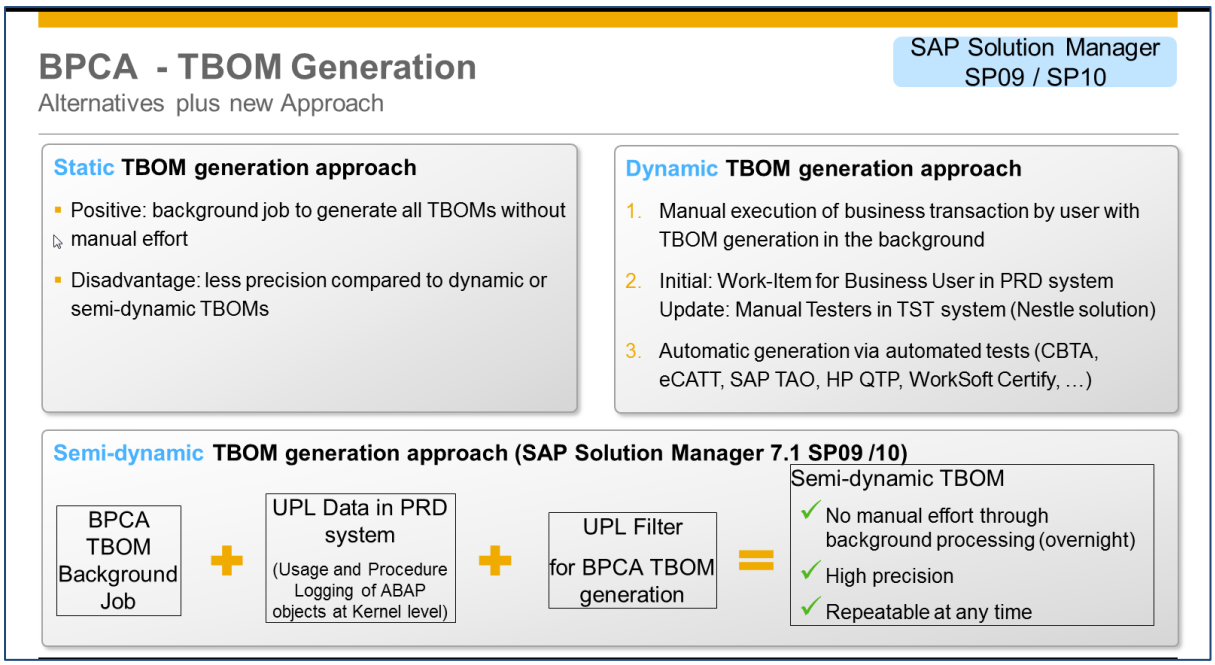


Figure 1 : TBOM Generation Options

The above figure shows the different types of TBOMs and different TBOM generations we have in SAP Solution Manager.

With SAP Solution Manager 7.1 SP10 we have 3 different types of TBOMs

- Dynamic TBOMs – dynamic TBOMs collect only those objects used by a given transaction during the execution. This means the transaction/process step has to be executed either automatically or manually to create dynamic TBOMs. Dynamic TBOMs are more granular and accurate and thus can be used to differentiate process step variants (Ex: Create rush order vs Create standard order using VA01 transaction)
- Semi-Dynamic TBOMs – semi-dynamic TBOMs are created using UPL data (Usage and Procedure Logging) from the production system. It is possible to create these TBOMs from SAP Solution Manager 7.1 SP10. They can be created in a mass fashion using a background job in BPCA. They are accurate as they are based on usage data from production system. But semi-dynamic TBOMs cannot be used to differentiate process step variants.
- Static TBOMs – static TBOMs are created by just going through the source code scan of a given transaction. They have restriction on the number of levels of such a scan. Thus the static TBOMs are prone to be inaccurate as they will contain objects not used by the customer and sometimes might miss out some objects in the deep levels of the code. They are not recommended to be used for productive usage of BPCA.

With SAP Solution Manager 7.1 BPCA allows the following ways of creating dynamic TBOMs

1. Manual TBOM creation
2. TBOM creation using automated test scripts using Test Automation Framework
3. TBOM creation by testers via Tester Work list
4. TBOM creation using business process experts using TBOM work items

Below sections explain each of the different ways to create dynamic and semi-dynamic TBOMs.

4.1.1 How to generate TBOMs - Manually

The following steps describe the procedure to create a dynamic TBOM manually.

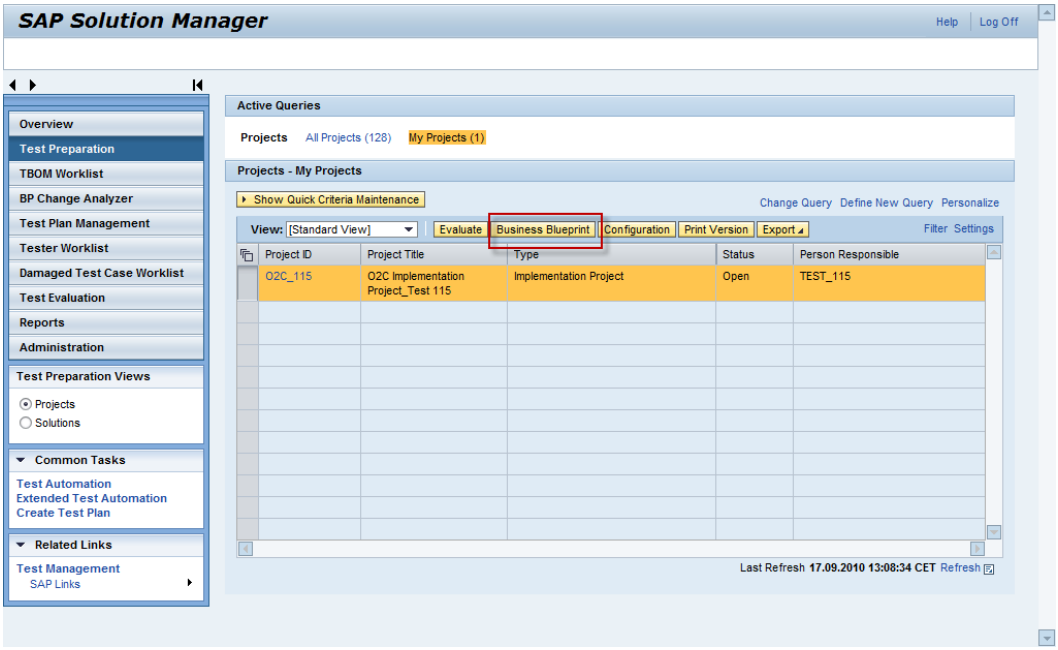
Step 1: Go to Test Management work center in Solution Manager using the Favorite link : Work Center: Testing Management

Step 2: Go to the Test Preparation tab

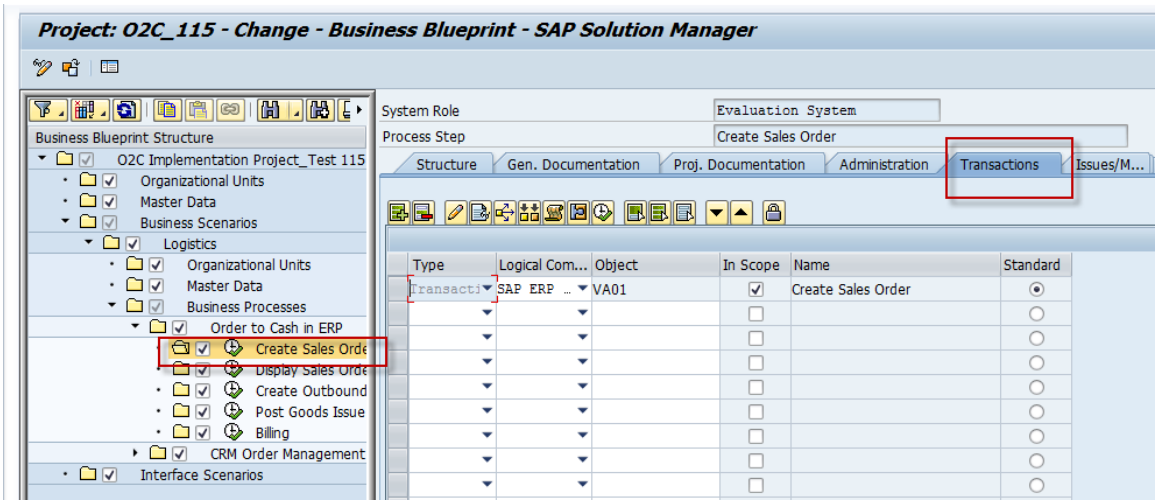
Step 3: Click on “My projects” query. If you don’t see any entries in the table, refresh the query by clicking on the “refresh” link on the bottom right corner of the table.

Step 4: You will see your project BPCA_TRN

Step 5: Click “Business Blueprint” button.



Step 6: O2C Order to cash implementation project-> Business Scenarios->Logistics->Business Processes-> Order to Cash in ERP ->Create Sales Order

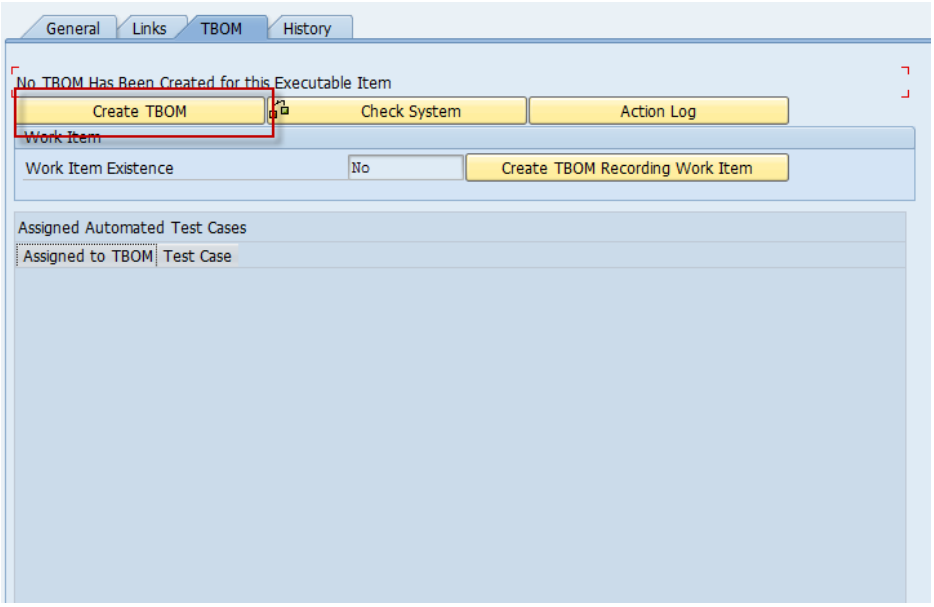


Step 7: Go to the transactions tab

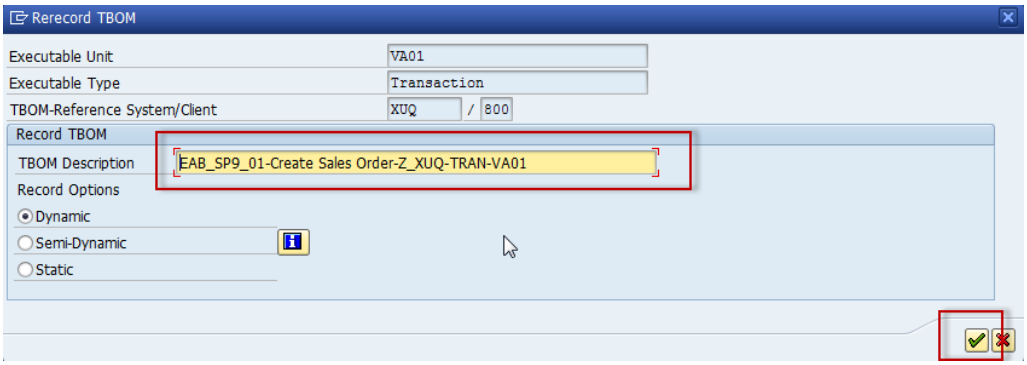
Step 8: Select the transaction VA01

Step 9: Click on the attribute button 

Step 10: In the "Attribute maintenance" screen, go to "TBOM" tab



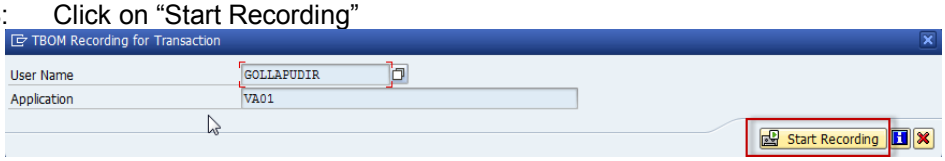
Step 11: Click "Create TBOM" button. The create TBOM screen appears. You can change the description of the TBOM



Please ignore the error for system M25 in any additional pop-ups after clicking the ok button above

Step 12: Click the "Ok" button.

Step 13: Click on “Start Recording”



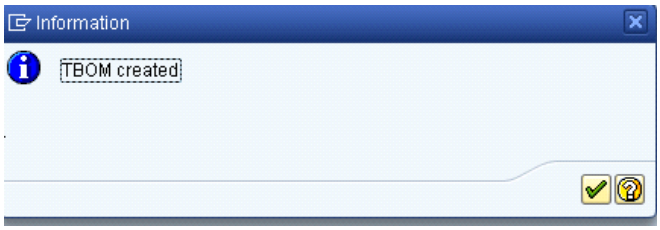
Step 14: You will be taken to the VA01 transaction. Create a sales order using that transaction using the relevant data. Below table shows sample data

TEST STEP	INPUT DATA	EXPECTED RESULTS
Enter the value in field - order type	OR	
Enter the value in field - Sales Organization	1000	

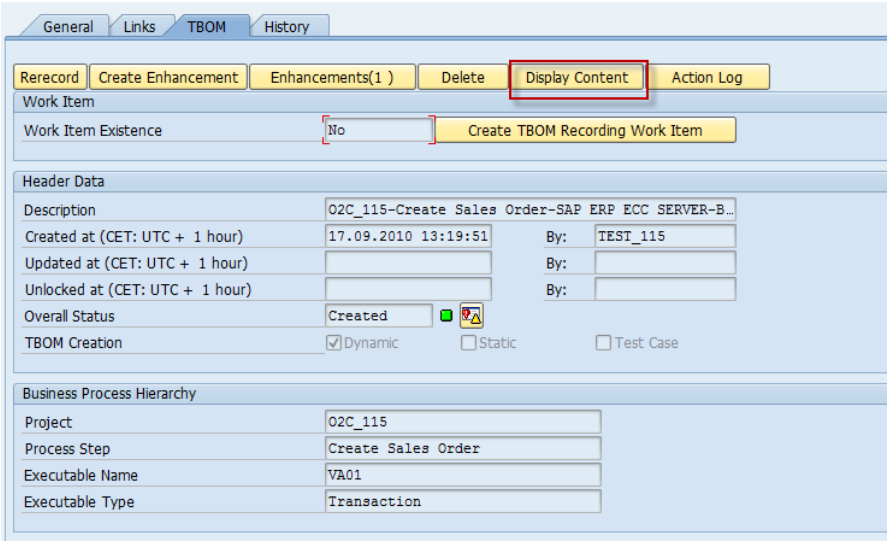
Enter the value in field - Distribution channel	12	
Enter the value in field – Division	00	
Press "Enter"		"Create Standard order" screen appears
Enter the value in field – Ship to party	1001	
Enter the value in field - Sold to party	1001	
Enter the value in field – PO Number	TEST	
Enter the value in field - material	L-80R	
Enter the value in field - order quantity	1	
Press "Enter"		All the other data is automatically populated
Click on the "Save" icon on the top		TBOM will be created

Step 15: Click on “Stop Recording”

Step 16: TBOM will be created and we will see a success message.



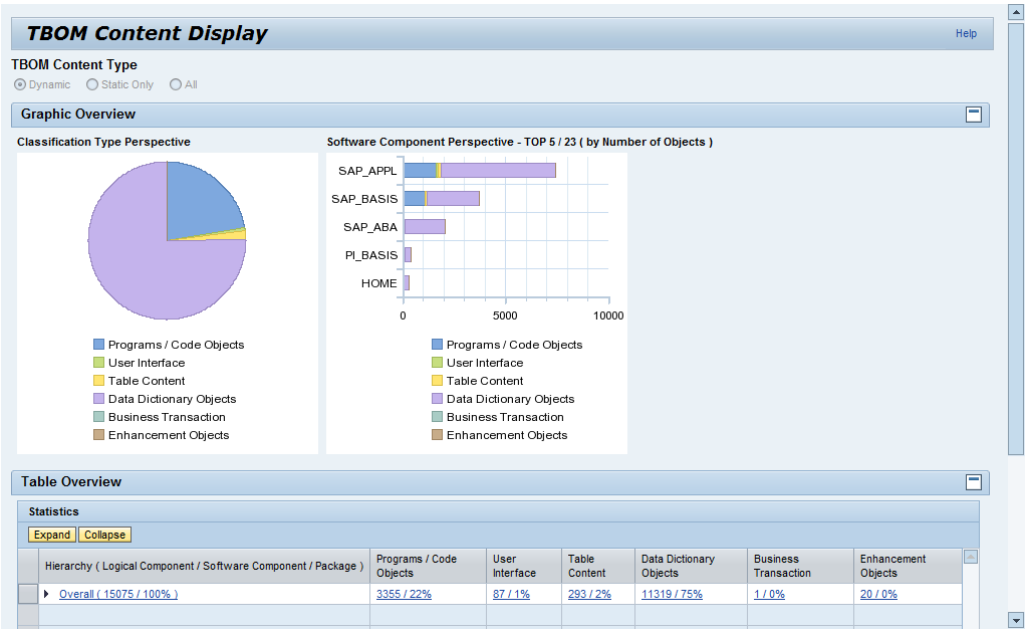
Step 17: In the attribute maintenance window, click on „Display Content“ button.



Note

The TBOM tab shows the current status and various other details about the TBOM like the last update date, systems involved in the TBOM (it could be more than one system), TBOM enhancements where you can expand the TBOM content with more variants of the same process step.

Step 18: The TBOM content display screen appears.



Note

In SAP Solution Manager 7.1, BPCA also collects the table keys along with the table names as part of the TBOMs. These key values are used in the analysis of table changes like Customizing changes described in Section 4.2 below

.

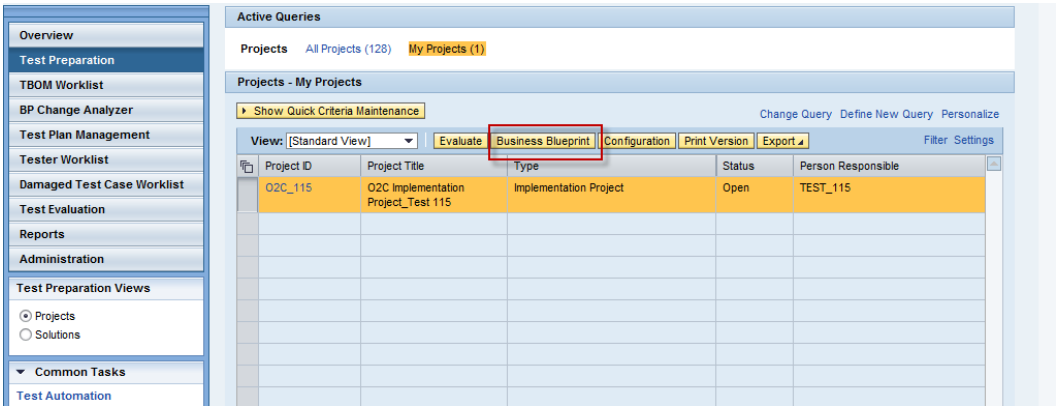
4.1.2 How to generate TBOMs – using Test Automation Framework

The test automation framework allows you to reuse the automated test scripts created using the framework for TBOM creation. Although using this framework you can create automated test scripts from various 3rd party test automation tool, for the below mentioned procedure we will use eCATT as a test automation tool.

Step 1: Go to Test Management work center in Solution Manager using the Favorite link : Work Center: Testing Management

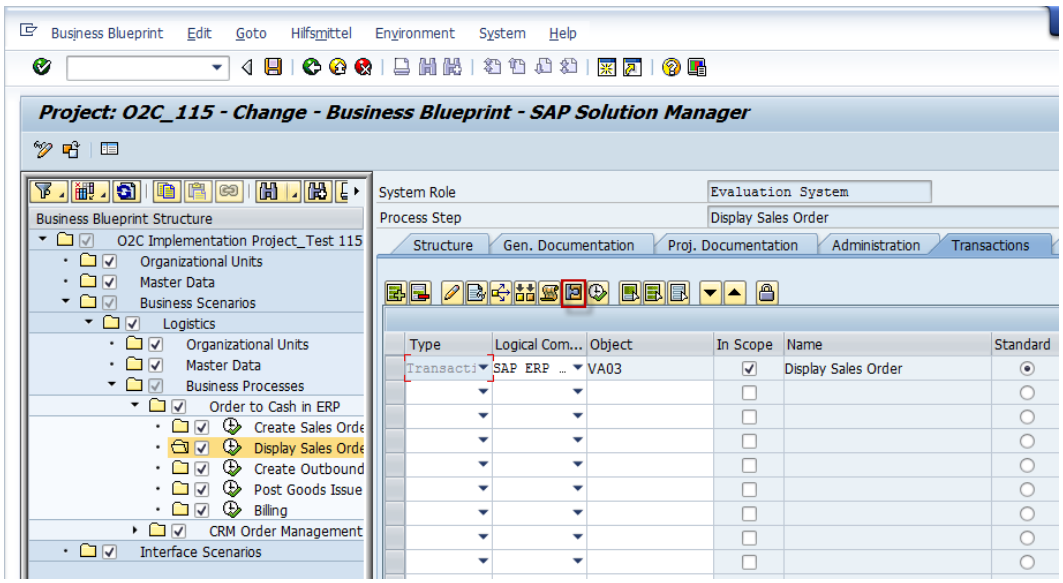
Step 2: Go to the Test Preparation tab

Step 3: Select your project and click “Business Blueprint” button.



Step 4: Go to the business process step where you want to create a TBOM

a. O2C Order to cash implementation project-> Business Scenarios->Logistics->Business Processes-> Order to Cash in ERP ->Display Sales Order



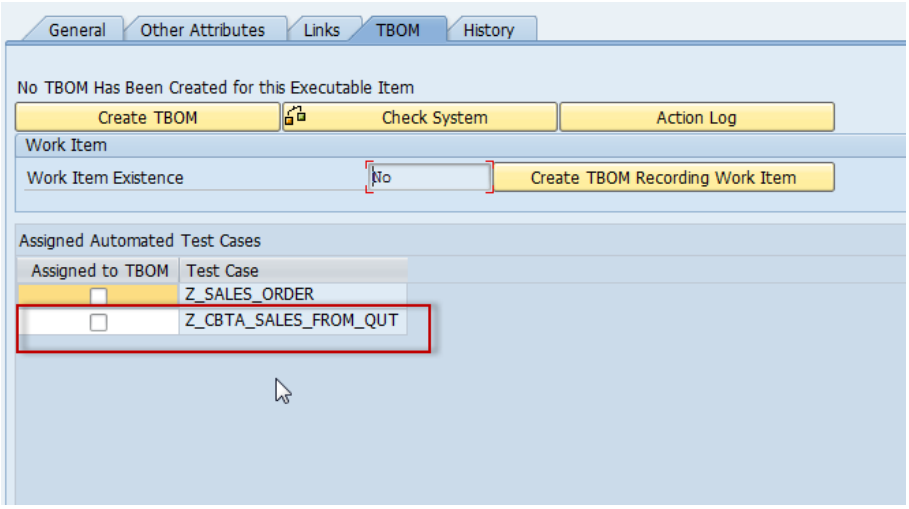
Step 5: Go to the transactions tab

Step 6: Select the transaction

Step 7: Click on the attribute button 

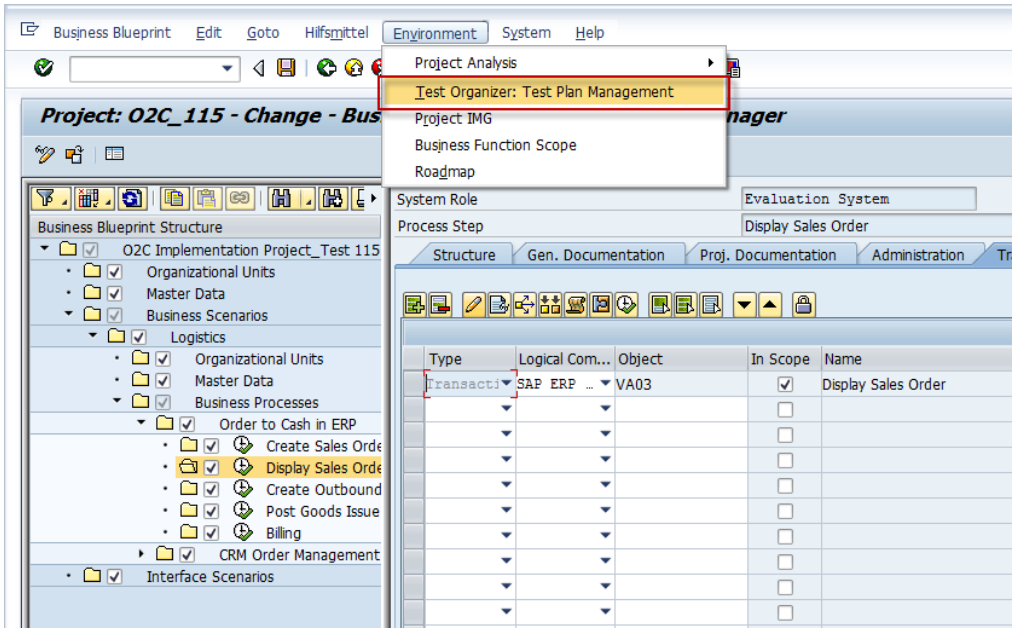
Step 8: In the "Attribute maintenance" screen, go to "TBOM" tab

Step 9: Select the check box for an existing test case to be assigned to TBOM



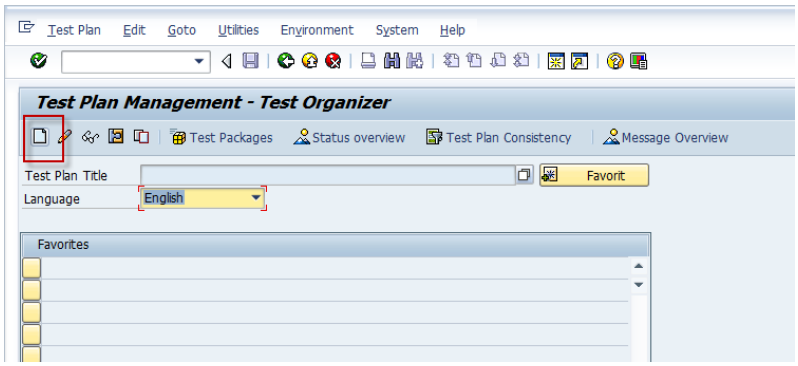
Step 10: Click on the save button.

Step 11: In the Business Blueprint application go to the menu Environment → Test Organizer: Test Plan Management

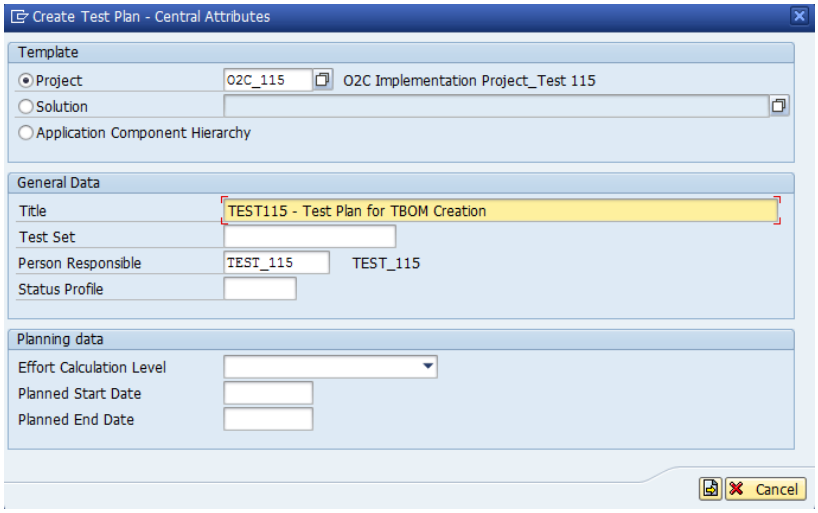


Step 12: The Test Plan Management – Test Organizer application is launched

Step 13: Click on the new button.

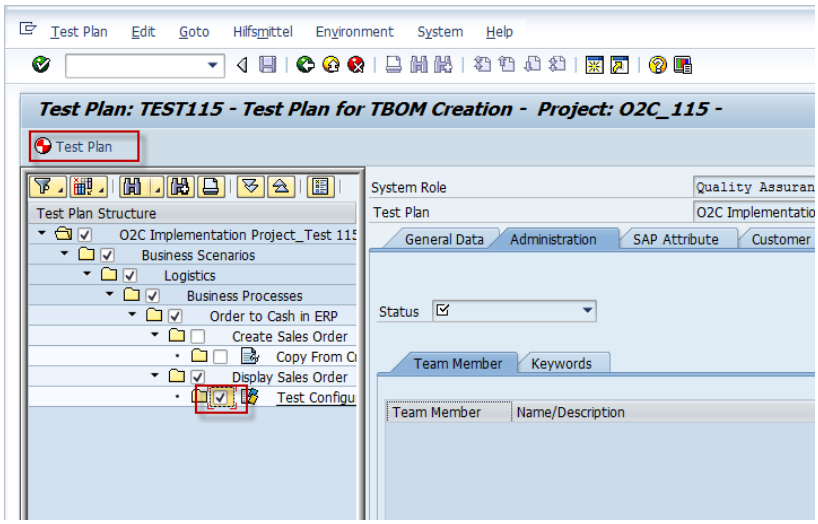


Step 15: In the new Test Plan Creation module enter your project and give a new Title for the test plan.



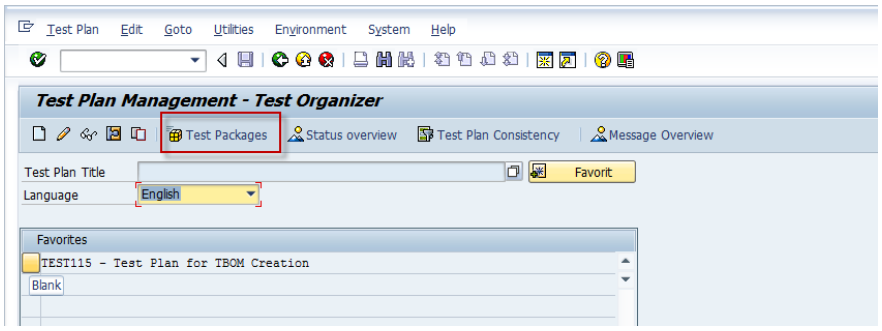
Step 16: Click on the next button while using the default values.

Step 17: In the Test Plan creation window, expand the process hierarchy tree and select only the test case for “Display Sales Order”. Click on “Test Plan” button

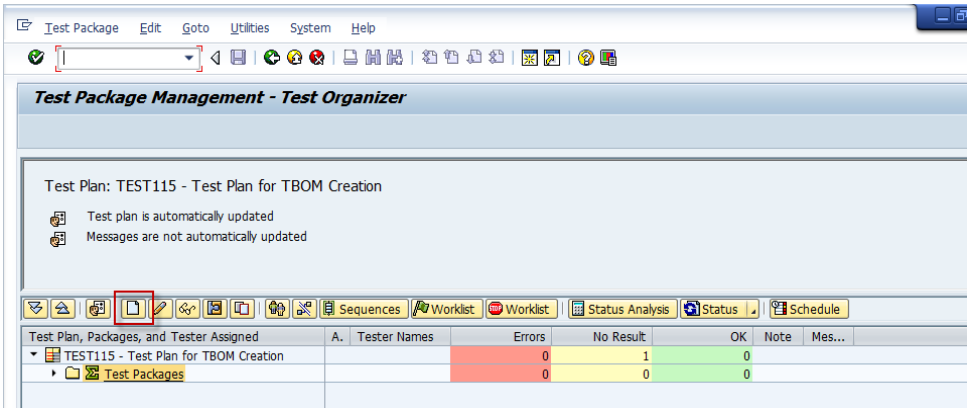


Step 18: Confirm the pop-up about the Object Directory Entry while selecting the “Local Object” button and also confirm the following success message pop-up.

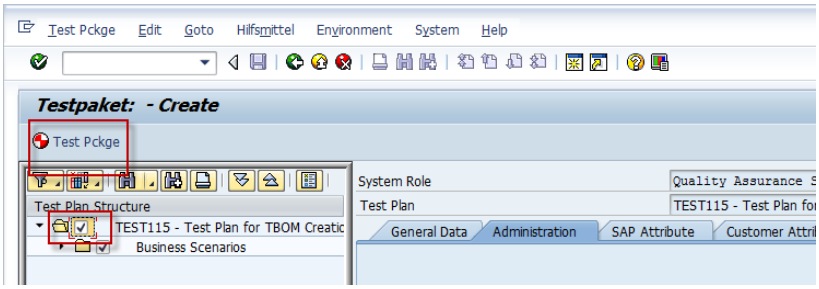
Step 19: Select the newly created Test Plan and click on “Test Packages” button.



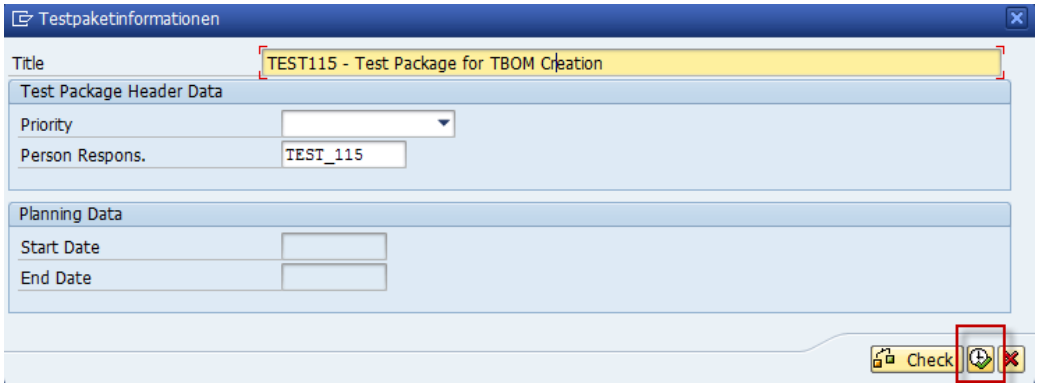
Step 21: In the Test Package Management window, click on “New” button.



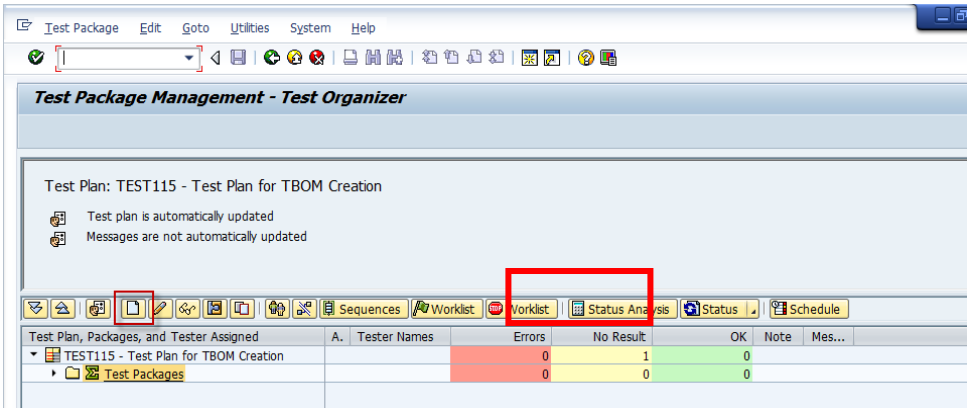
Step 22: In the Test Package creation window, select the check box on the root node to select all test cases in the Test Plan and click on “Test Pckge” button.



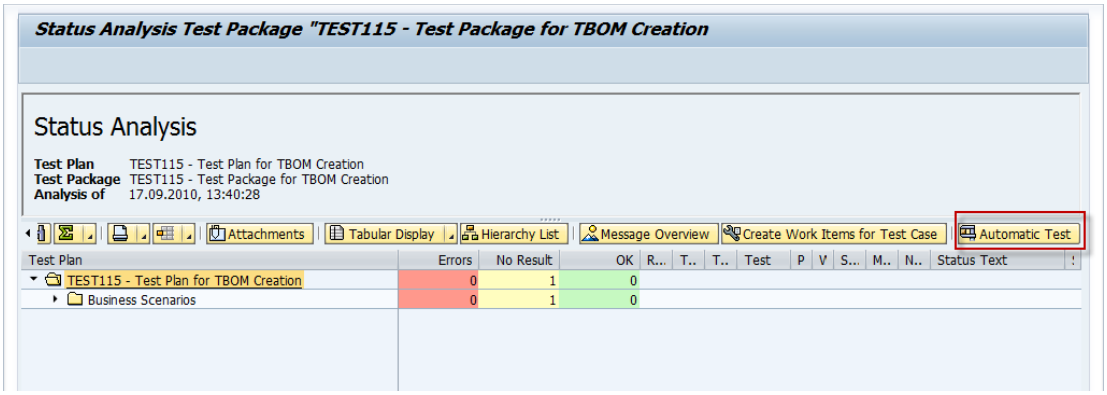
Step 23: In the creation pop-up enter the title of the test package and click on generate button.



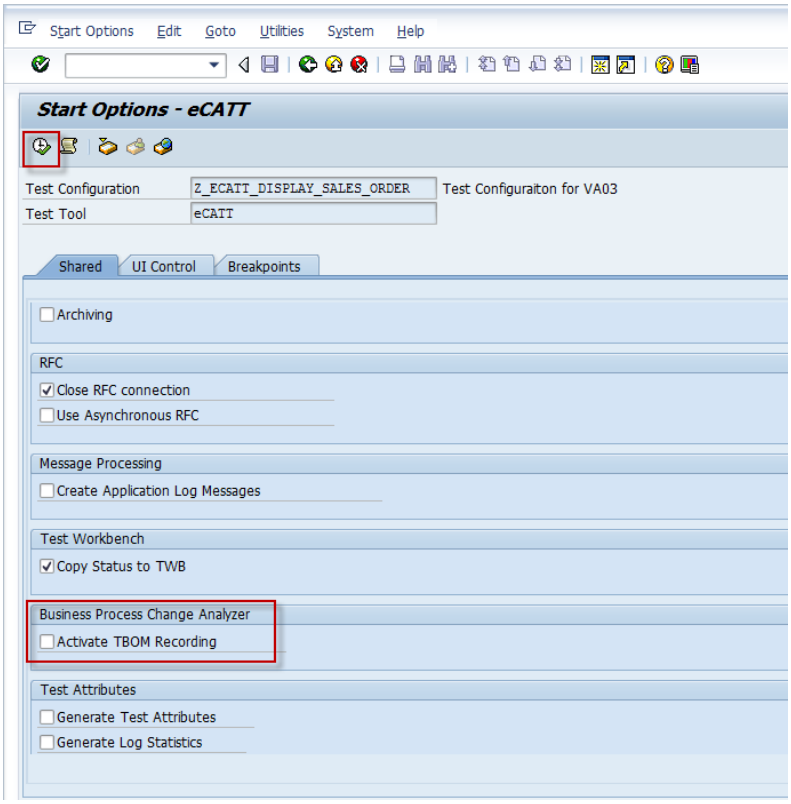
Step 24: In the Test Package Maintenance window, click on “Status Analysis” to go into the test package



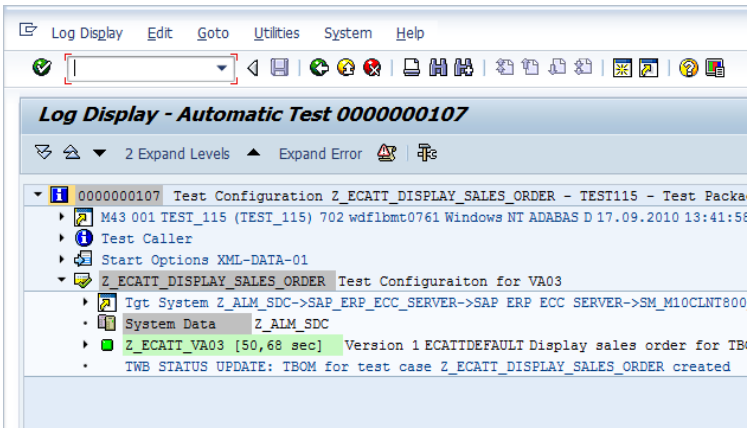
Step 25: Click on “Automatic Test” button. This will launch the Automatic test execution window



Step 26: In the options for execution select “Activate TBOM recording”. Click on execute button.



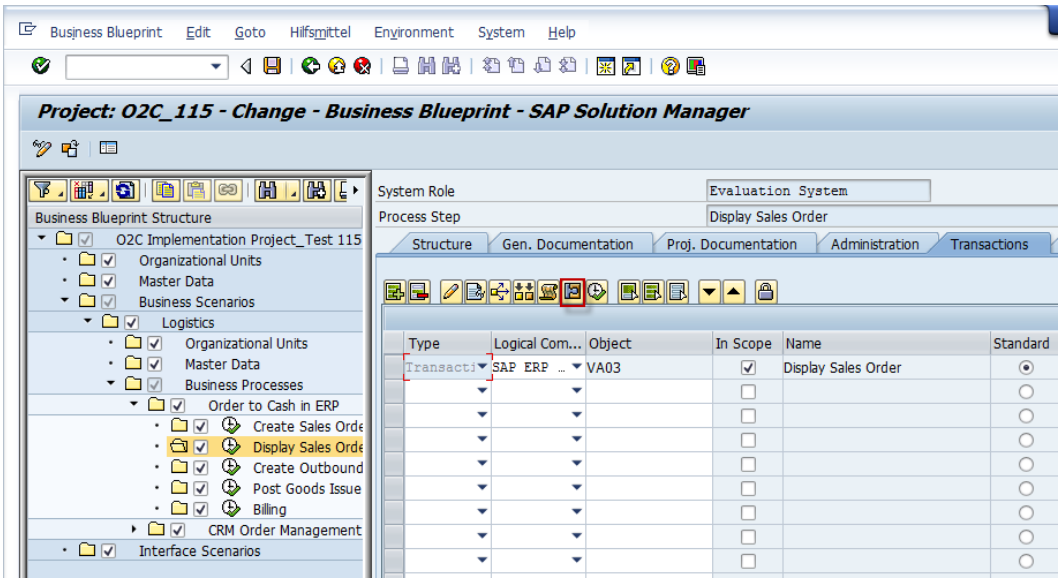
Step 27: VA03 transaction will now automatically be executed on the managed system and you will see a success log in the end.



Step 28: Click on the close icon 

Step 29: You will now be taken to Business Blueprint Application.

Step 30: Go to O2C Order to cash implementation project-> Business Scenarios->Logistics->Business Processes-> Order to Cash in ERP ->Display Sales Order

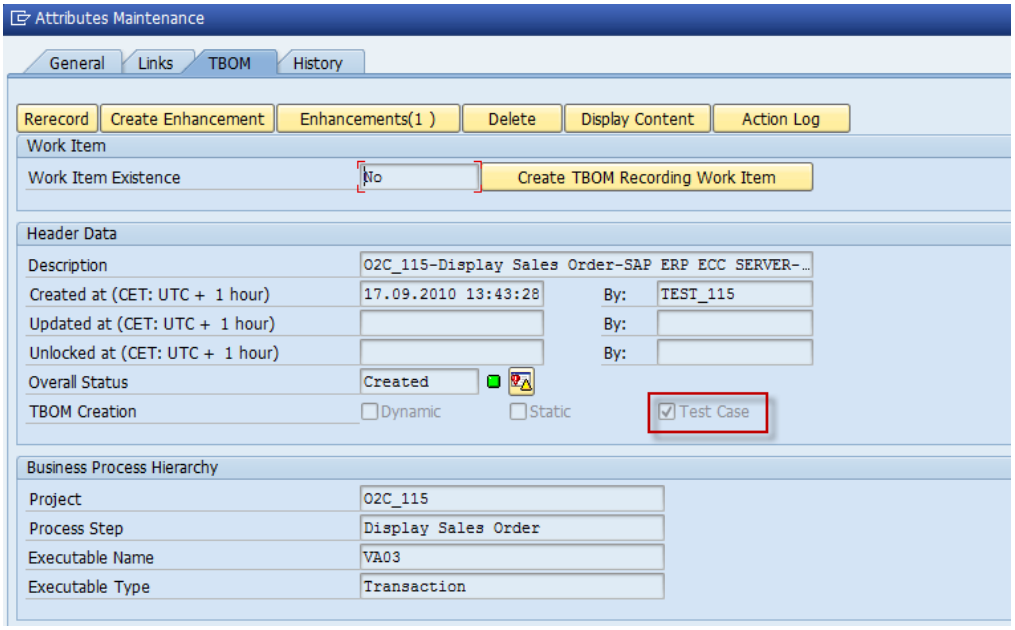


Step 31: Go to the transactions tab

Step 32: Select the transaction

Step 33: Click on the attribute button 

Step 34: In the TBOM tab of the attribute maintenance window you will see that the TBOM is automatically created and the TBOM Creation type will be “Test Case”



Note

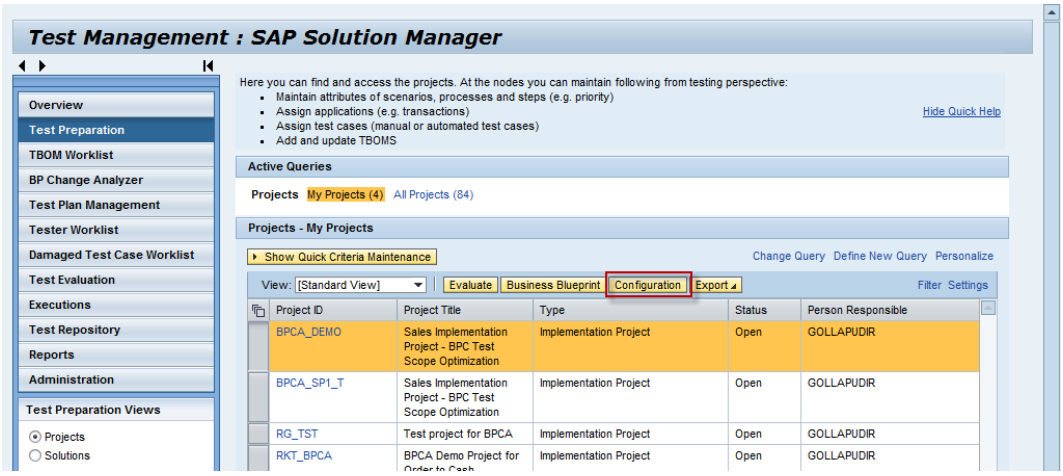
For creating TBOMs for “Executable Variants” you need to apply the SAP Note: 1964616 on your SAP Solution Manager system

4.1.3 How to generate TBOM using tester work list

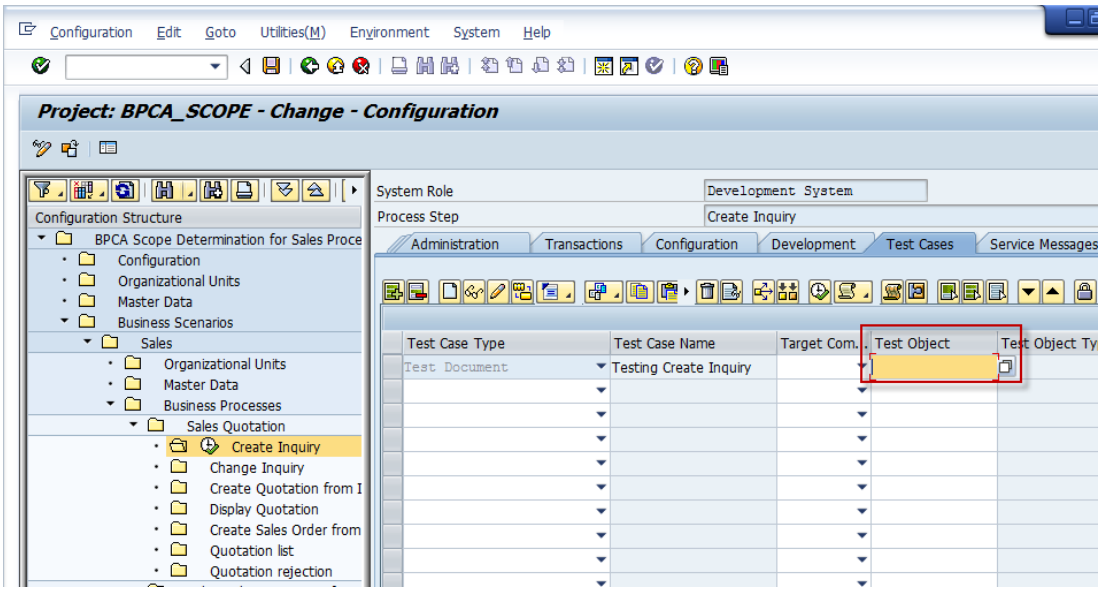
To create a TBOM the user has to execute the business process step with the right set of test data and screen flow. Manual testers anyway go through business processes as part of the testing process and customers would like to use the manual testing efforts to create/update TBOMs. This approach is now possible with SAP Solution Manager 7.1

4.1.3.1 Preparation

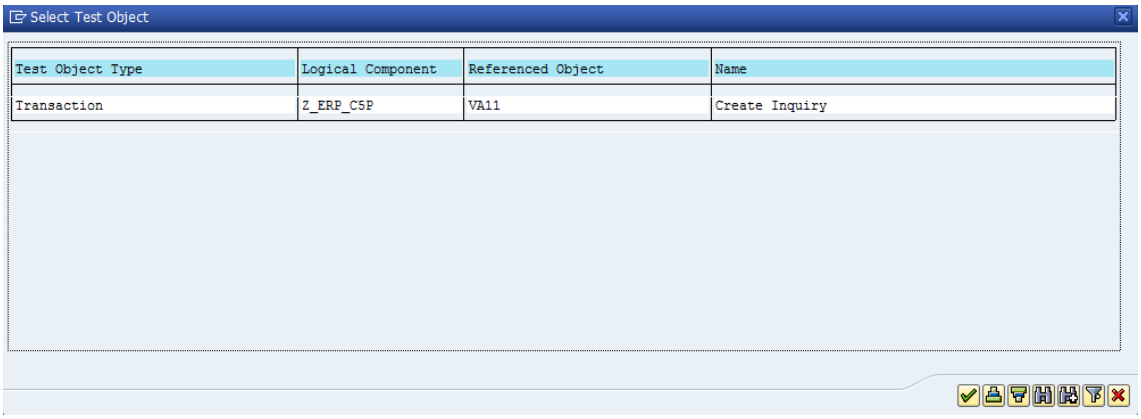
- For tester to create a TBOM while executing a test, the User parameter AGS_BPCA_TB_FR_TWKL should have the value “X”
- Manual test cases are documented in SAP Solution Manager project under the test cases tab in SOLAR02
- Manual test cases have to be assigned to test objects (executables)
    - Go to Test Management work center
    - Go to “Test Preparation” application
    - Select the project
    - Select “Config” button



    - Go to test cases tab
    - Select the test case and click on F4 help for the “Test Object” column



- Select the executable from the associated list of transactions as “test object”

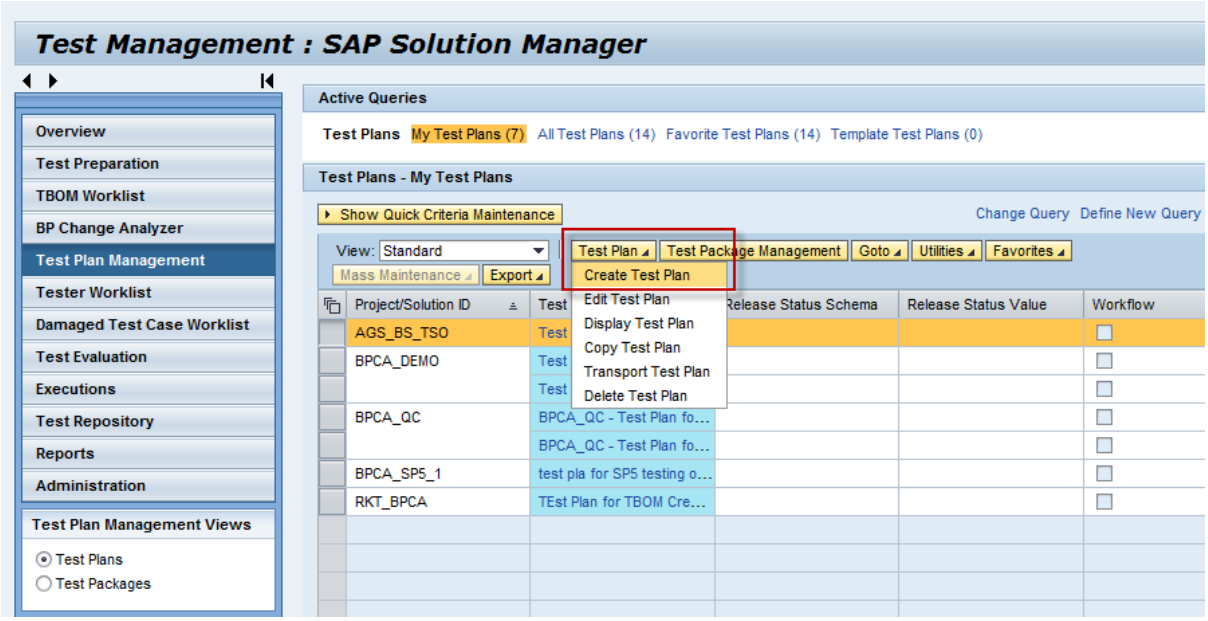


4.1.3.2 How to create TBOMs using tester work lists

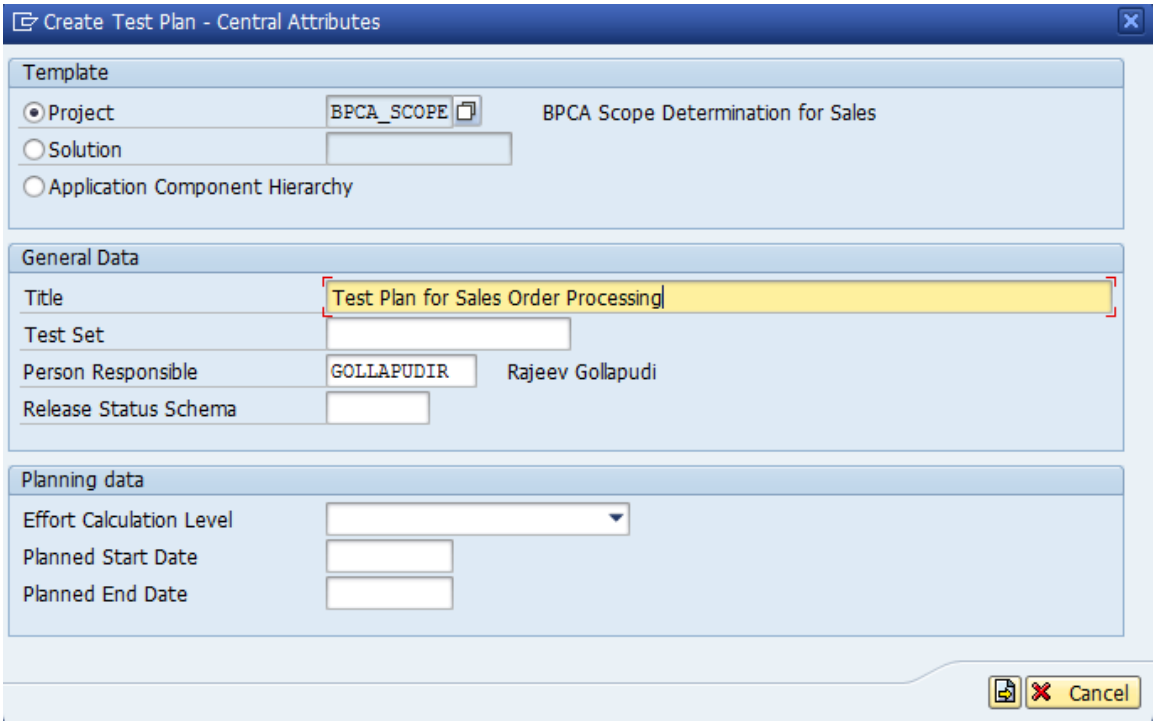
Step 1: Go to Test Management Work Center

Step 2: Go to “Test Plan Management” application

Step 3: Click on “Create Test Plan” button under “Test Plan” button menu



Step 4: Enter the details for creating a test plan for the project where test cases are available along with test objects



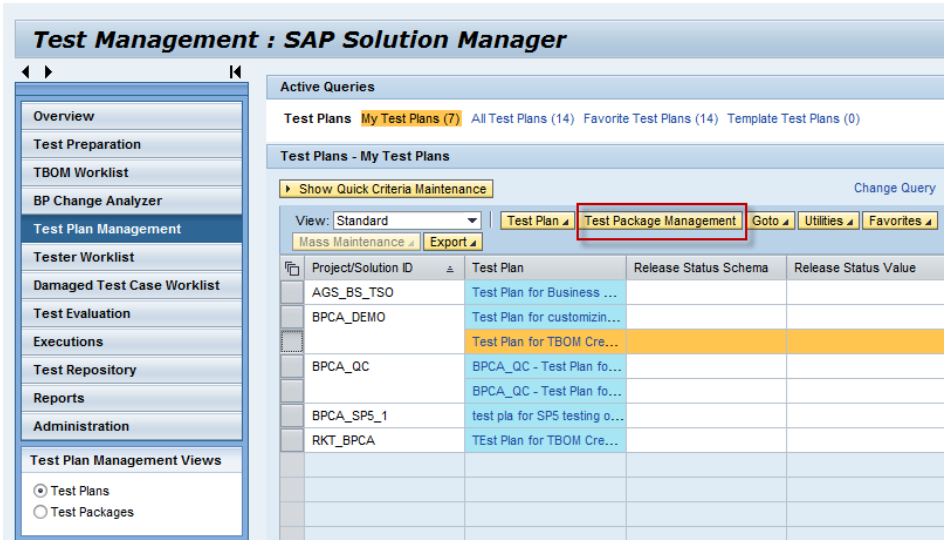
Step 5: Select the test cases relevant for TBOM creation in the business process hierarchy

Step 6: Generate the test plan

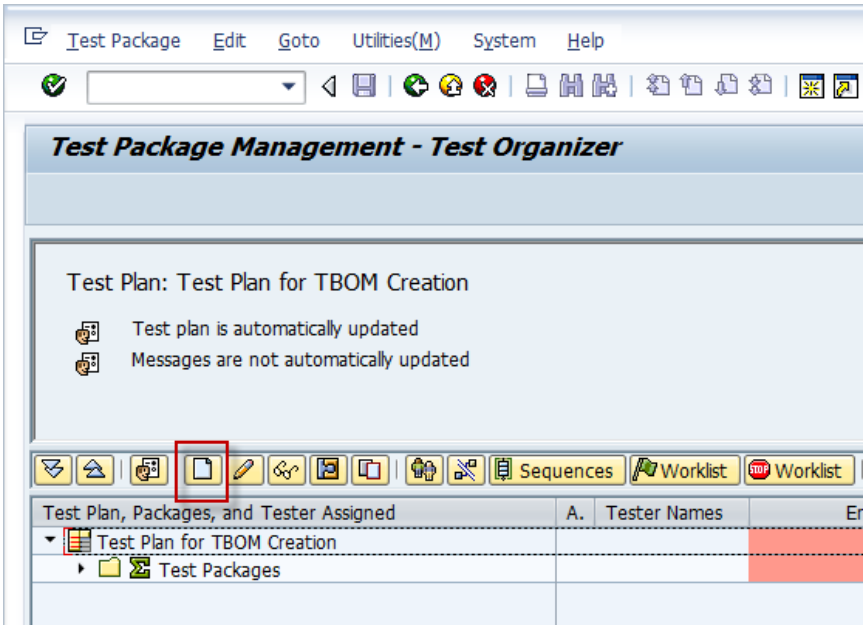
Step 7: Go to Test Management work center

Step 8: Go to “Test Plan Management” application

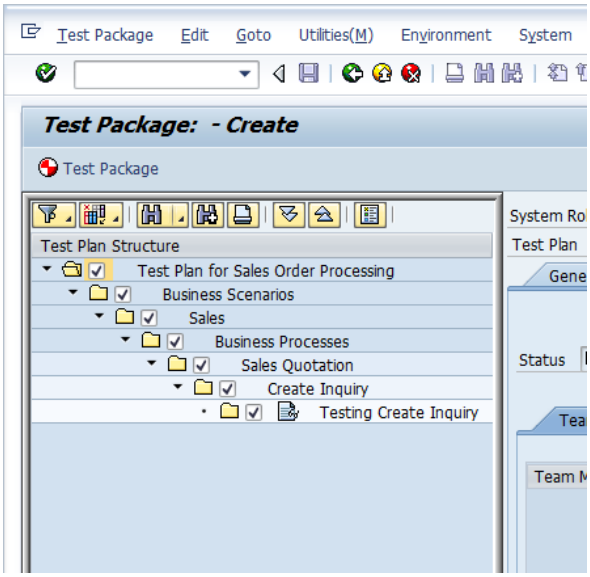
Step 9: Select the newly created test plan and click on “Test Package Management” button

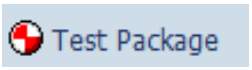


Step 10: Click “Create” button

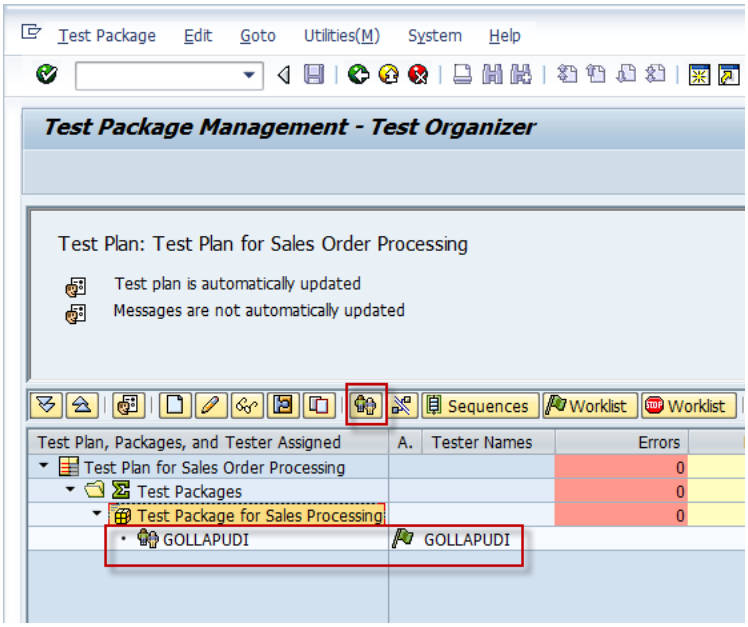


Step 11: Select the test cases to be added to the test package



Step 12: Generate the test package by clicking on 

Step 13: Assign a tester to this test package

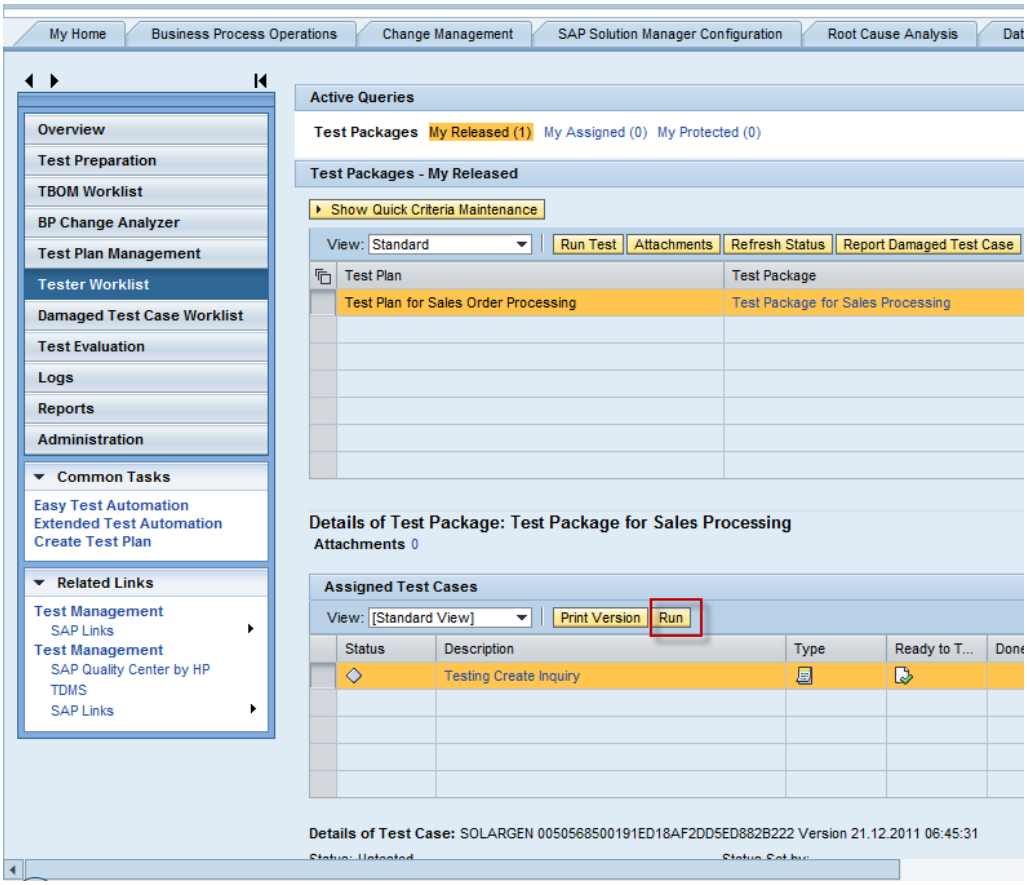


Step 14: Now the tester should be able to execute the tests and also create the TBOMs

Step 15: As a tester go to the “Test Management” work center

Step 16: Go to “Testers worklist”

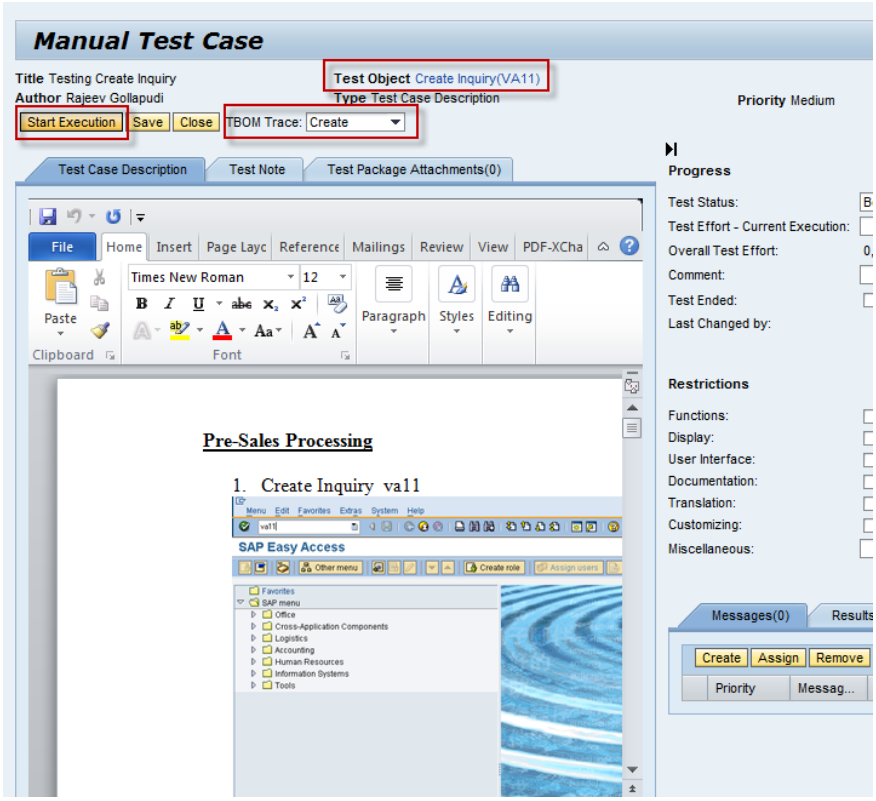
Step 17: Select the test package assigned to the current logged in user



Step 18: Select a test case and Click on “Run”

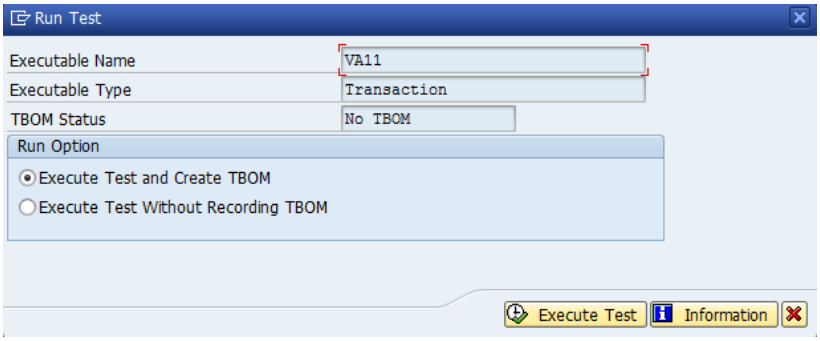
Step 19: The manual test case execution window is shown

Step 20: Click on “Start Execution” button

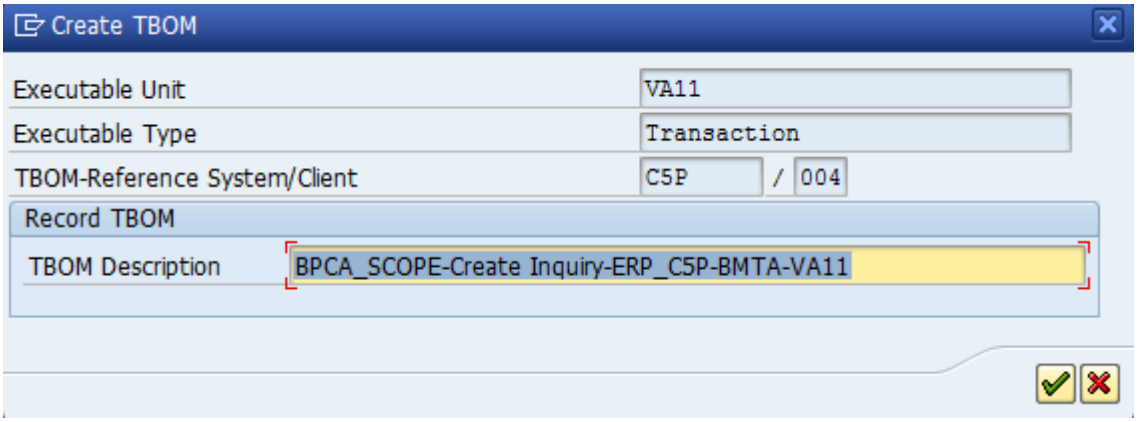


Step 21: The tester is shown an option to create or enhance a TBOM (if TBOM already exists")

Step 22: Select a option "Execute Test and Create TBOM" and click on "Execute Test"

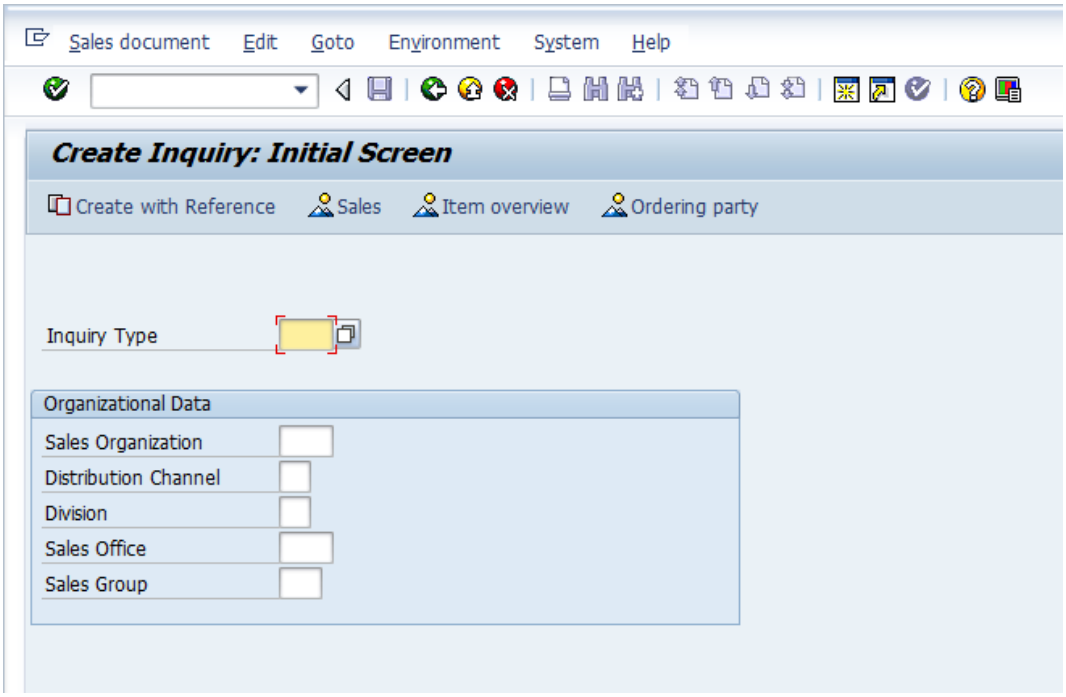


Step 23: TBOM Creation dialog appears. Change the TBOM name(optional)



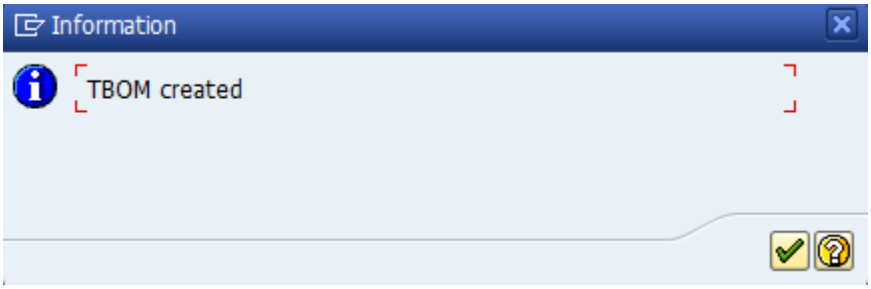
Step 24: Click "ok"

Step 25: User is taken to the transaction being tested (in this example VA11- Create Inquiry)



Step 26: Tester tests the transaction and closes the session

Step 27: TBOM is created



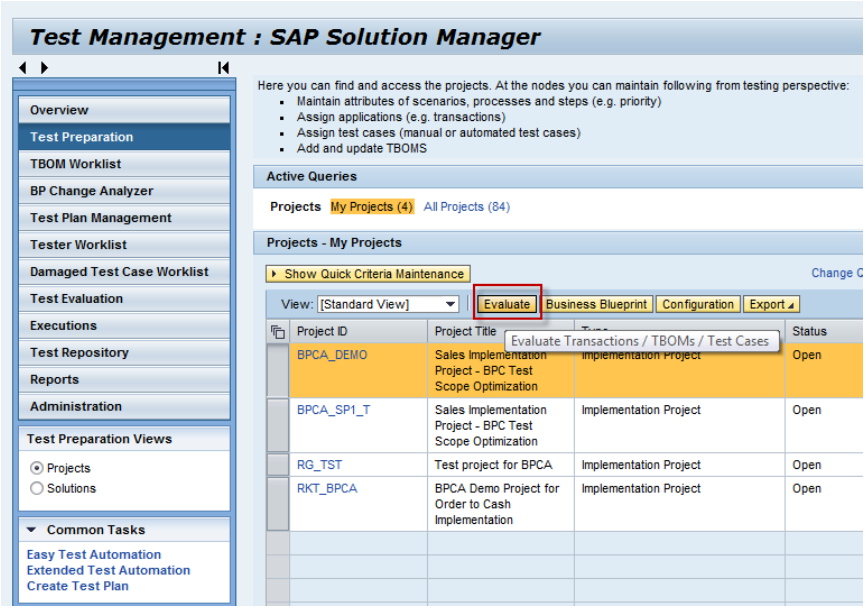
4.1.4 How to generate TBOM work item – Quality Expert

It is possible for the quality expert to create TBOM work items and assign them to relevant business process experts. Then the business process expert can process the work items and execute the business transaction (as described in) so that TBOMs are created in the background. The below mentioned procedure describes how a quality expert can create such work items and assign them to a business process expert.

Step 1: Go to Test Management Work Center

Step 2: Go to “Test Preparation” application

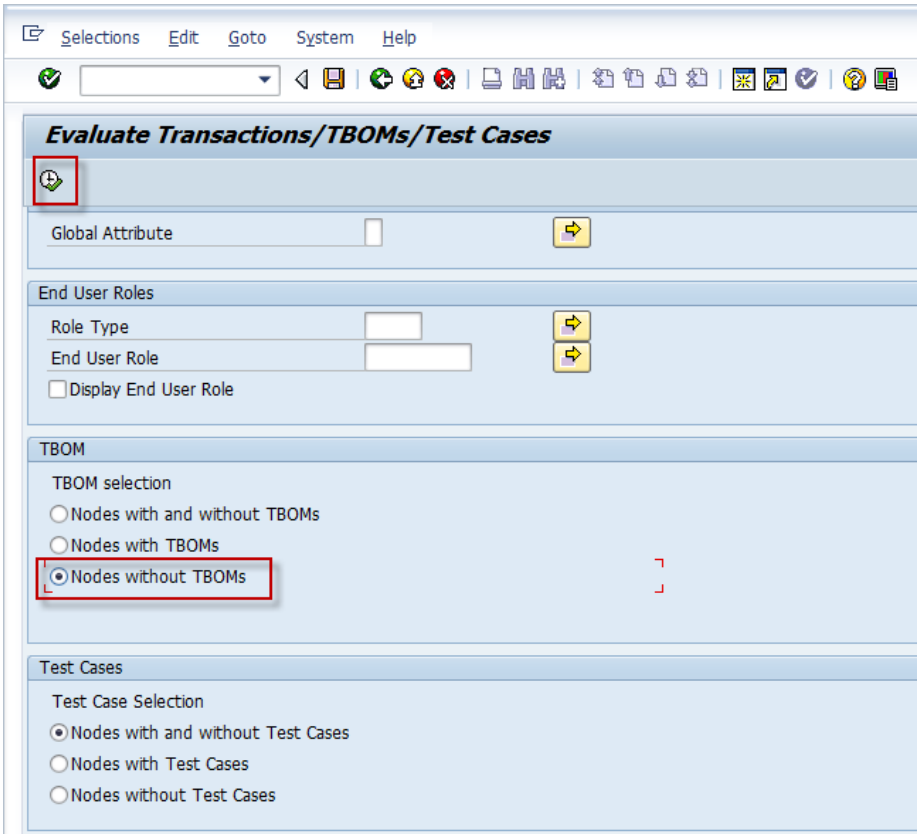
Step 3: Select a project and click “Evaluate”



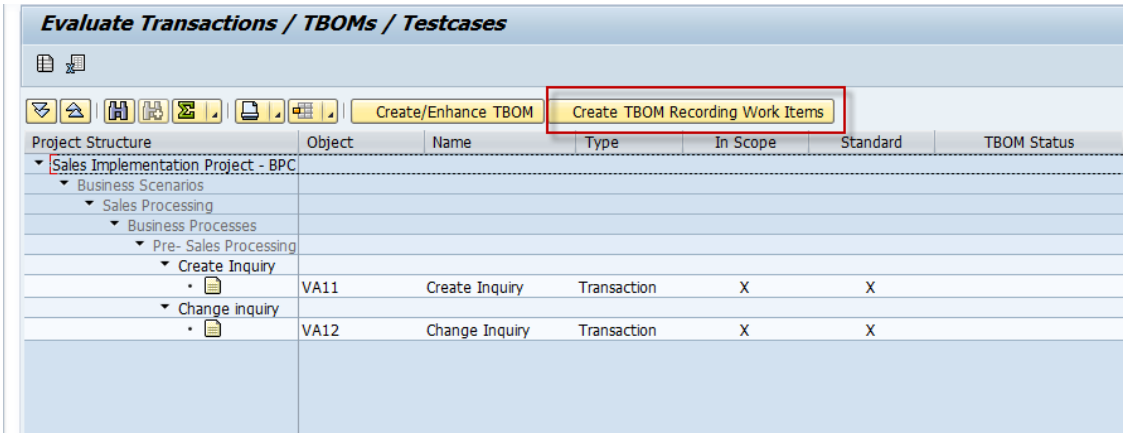
Step 4: The evaluation report parameters screen is shown

Step 5: Scroll down and select “Nodes without TBOMs”

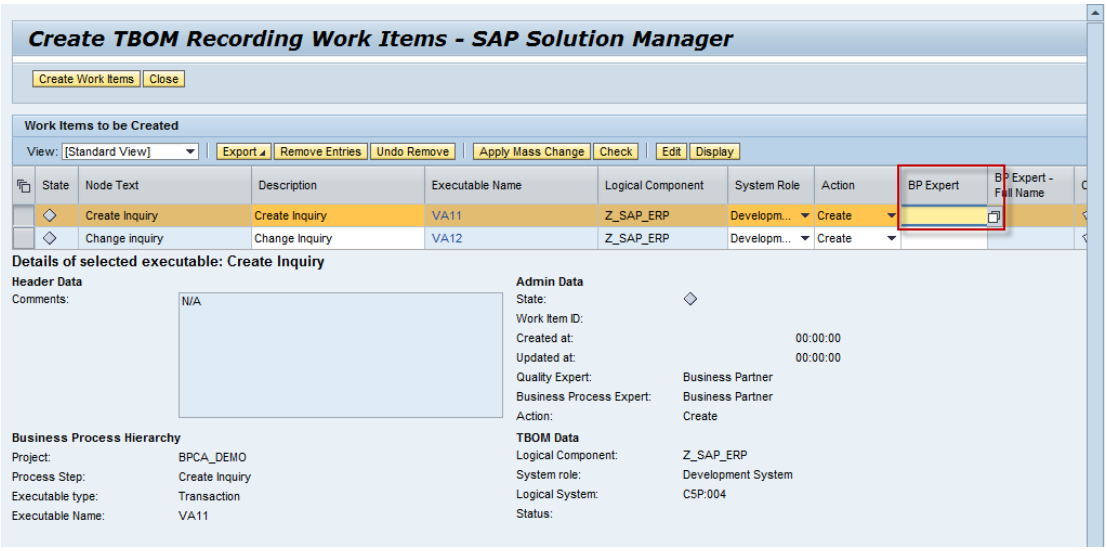
Step 6: Execute the report



Step 7: Click on “Create TBOM Recording Work Items”



Step 8: Search for business process expert by clicking on the Search  button

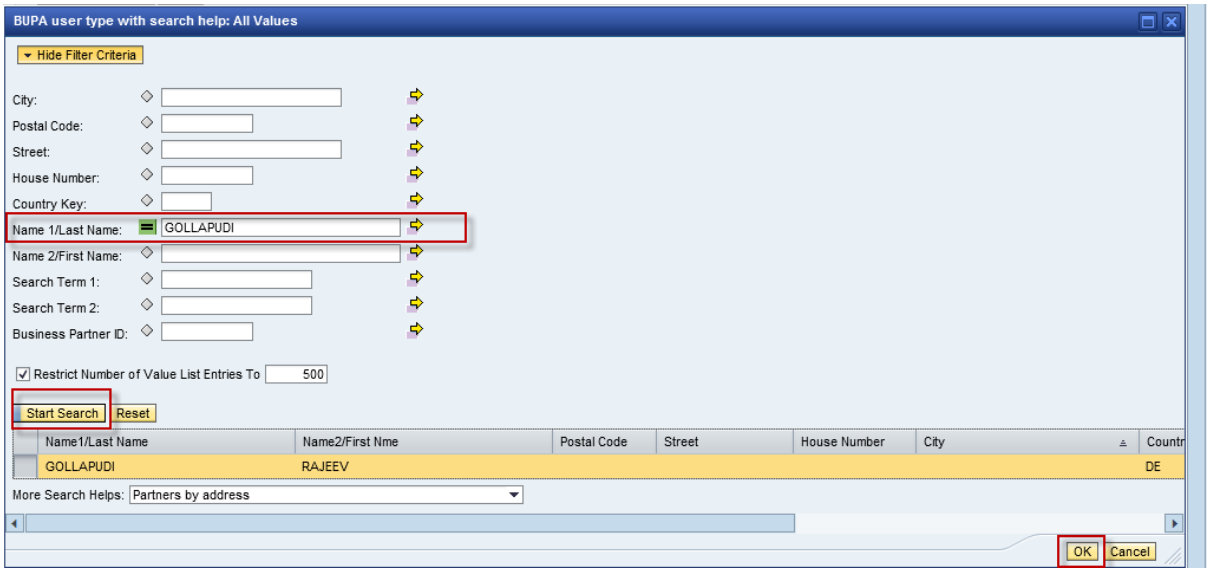


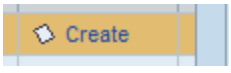
Note

If a business partner was selected previously for a given transaction, that same business partner is shown as default when creating the work items.

Step 9: Give search criteria for “Business Partner”

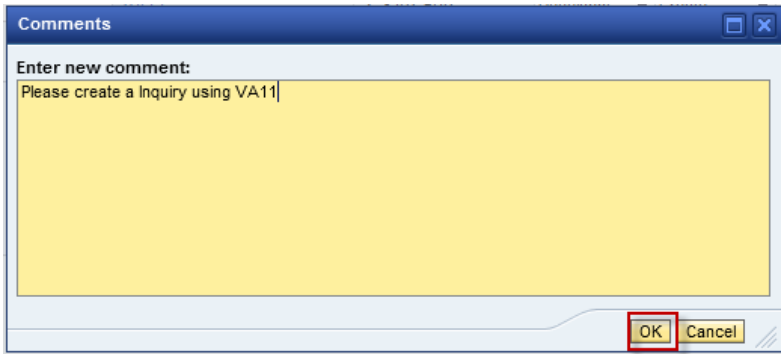
Step 10: Select Business Partner



Step 11: In the work item creation screen, click on Create button 

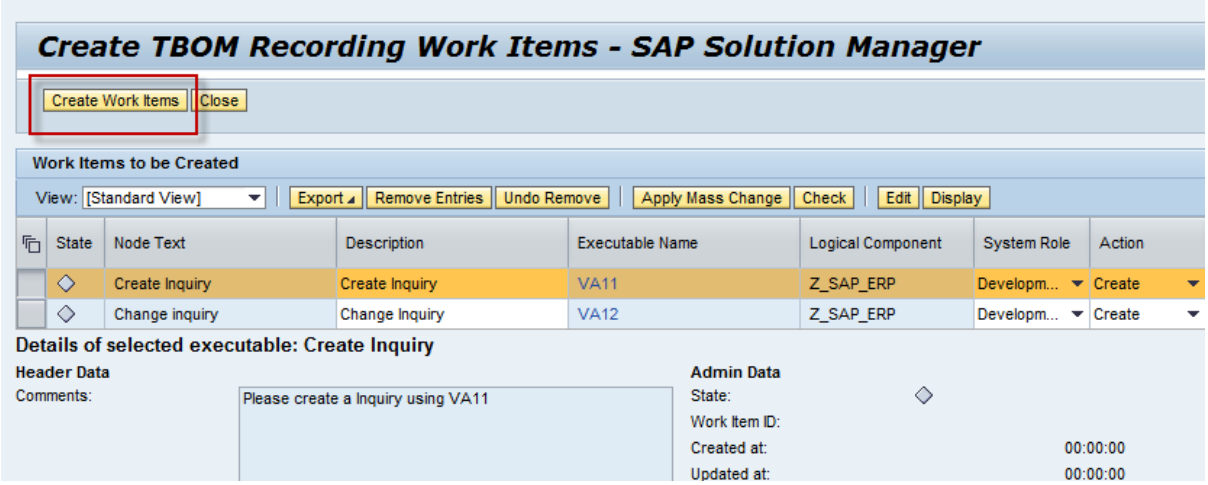
in the “Comments” column

Step 12: Enter comments for the work item to inform the business partner about the process step



Step 13: Optionally change the “System Role” – This system role determines on which system the business process expert will execute the transaction to create the TBOM

Step 14: Click on “Create work items” button



Step 15: Work items will be created and a ID is generated for the same

Step 16: An Email is received by the quality Expert about the work item

Dear Rajeev Gollapudi,

New TBOM recording work items have been assigned to you.
Please access the work items and execute the requested action.

You can access your TBOM recording inbox containing all your
open TBOM recording work items via the following link.

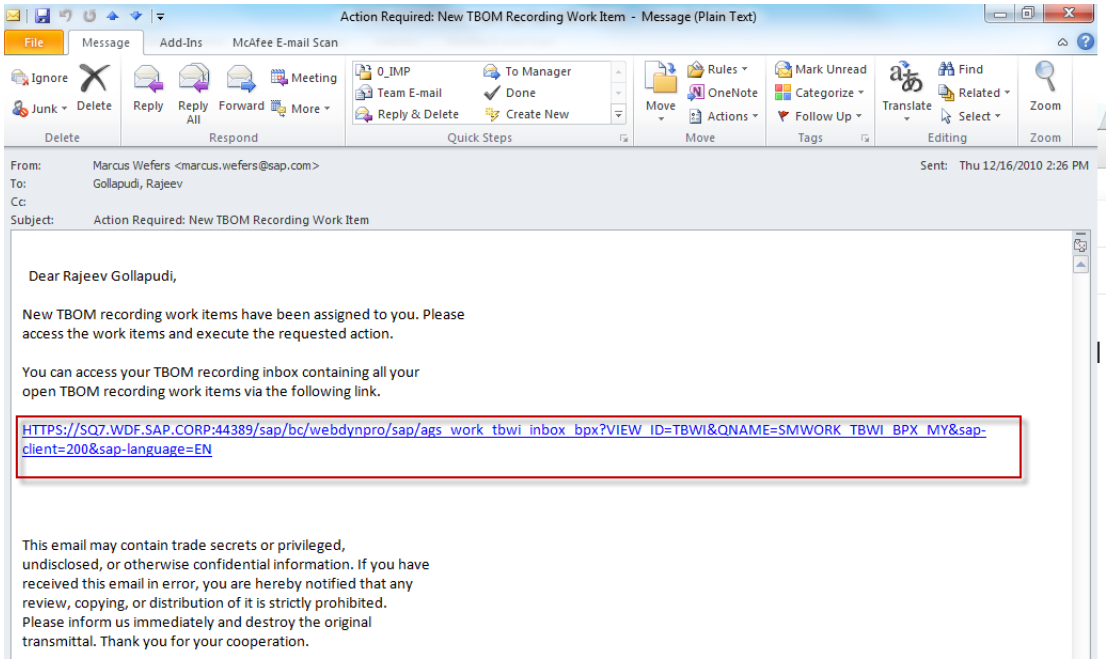
http://ldai1sq7.wdf.sap.corp:50089/sap/bc/webdynpro/sap/aqs_wo
k_tbwi_inbox_bpx?VIEW_ID=TBWI&QNAME=SMWORK_TBWI_BPX_MY&sap-cli
nt=200&sap-language=EN

This email may contain trade secrets or privileged,
undisclosed, or otherwise confidential information. If you
have received this email in error, you are hereby notified
that any review, copying, or distribution of it is strictly
prohibited. Please inform us immediately and destroy the
original transmittal. Thank you for your cooperation.

4.1.5 How to process TBOM work item – Business Process Expert

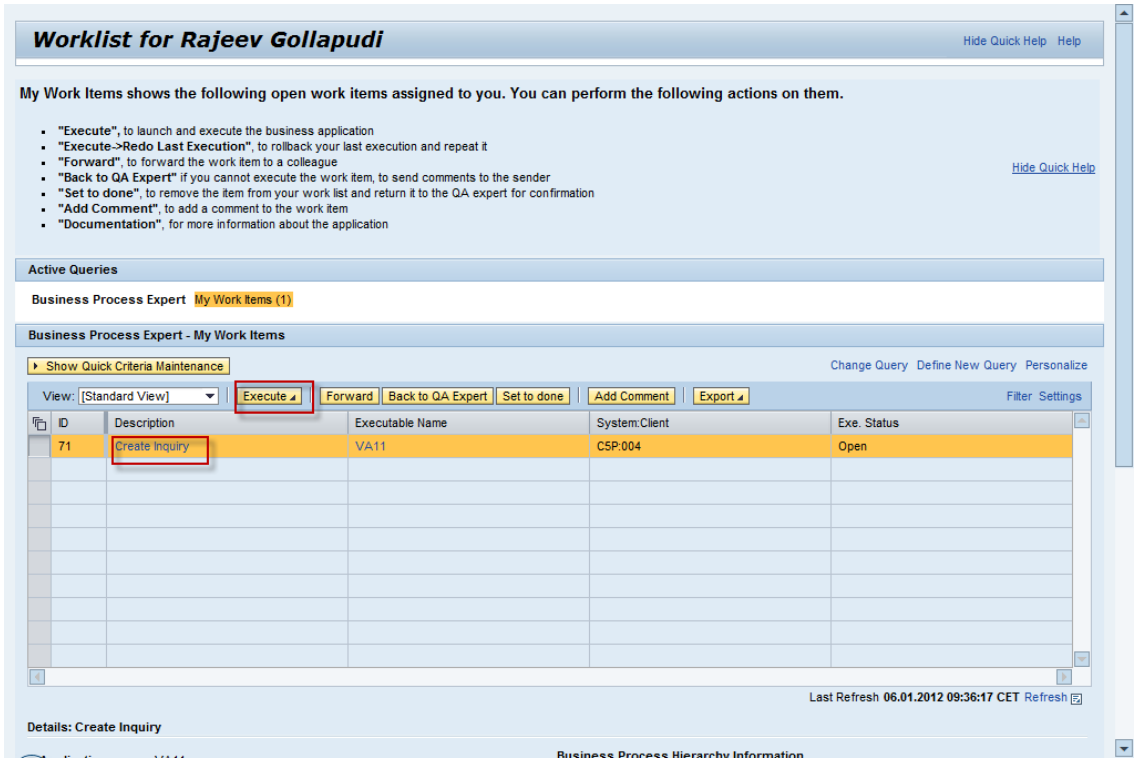
Once a TBOM recording work item is created by a quality expert (As explained in previous section), a business process expert (BPX) needs to process the work item to record the TBOM

Step 1: BPX receives an email notification about a new TBOM Work item



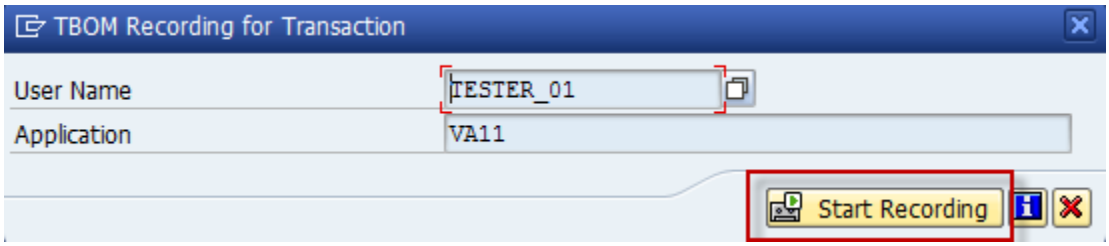
Step 2: BPX clicks on the link given in the email

Step 3: BPX TBOM Work list is shown



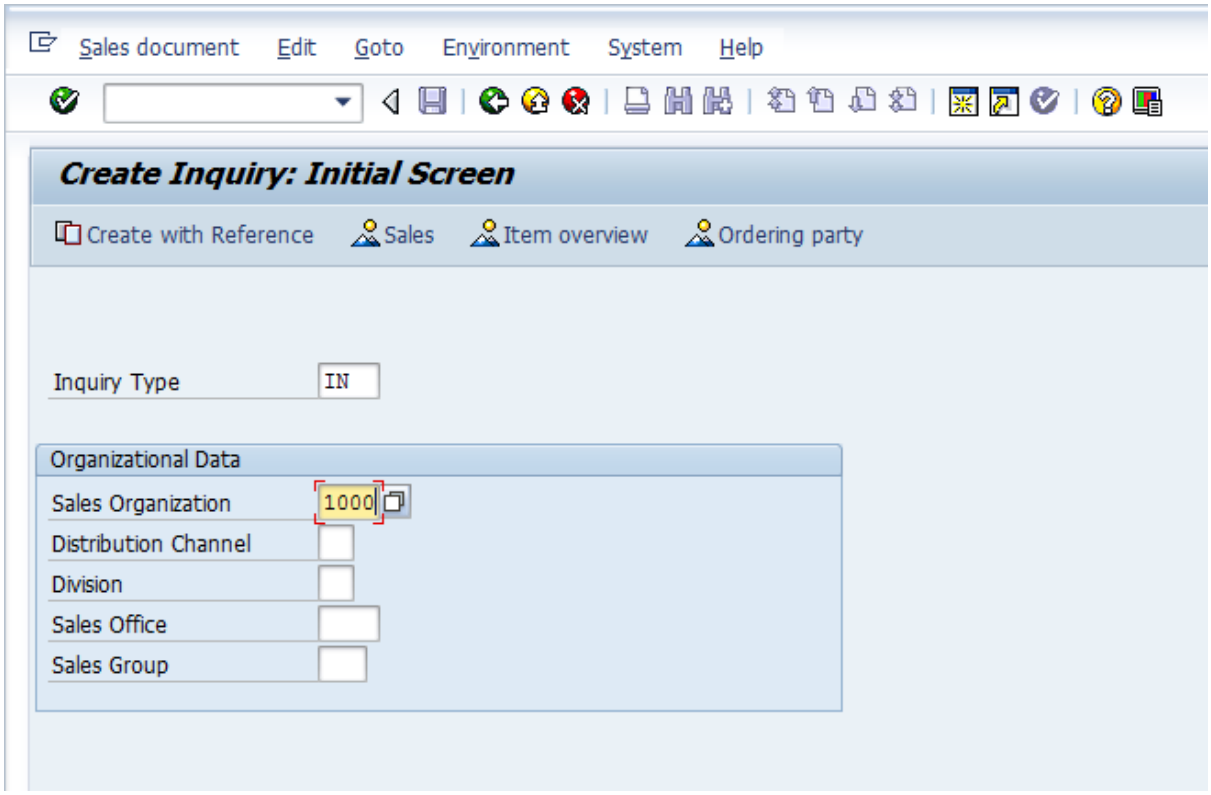
Step 4: BPX selects a work item and clicks on “Execute” (Or clicks on the executable – Ex VA11 link)

Step 5: TBOM recording screen is shown. BPX clicks on “Start Recording”

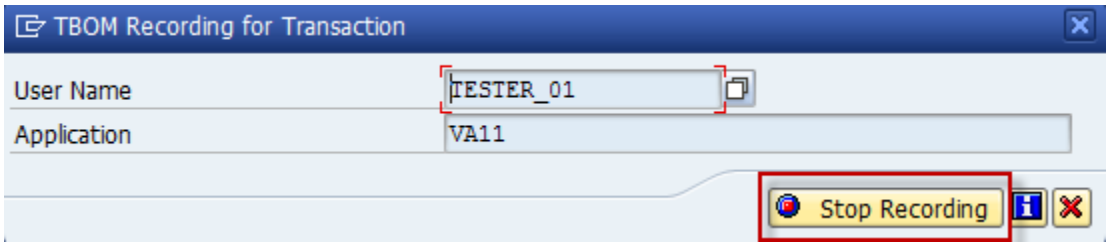


Step 6: BPX is taken to the transaction/executable on the managed system (based on the system role selected by the quality expert while creating the work item)

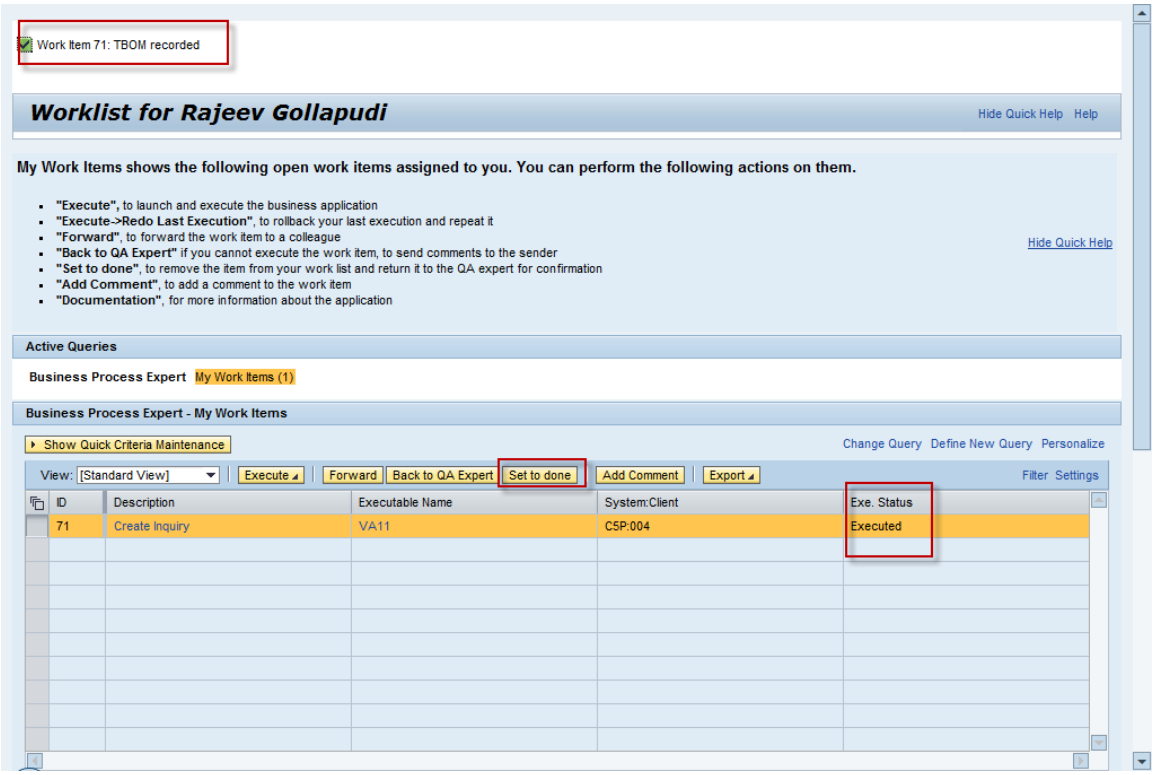
Step 7: BPX executes the business process step (transaction) and closes the session



Step 8: BPX clicks on “Stop Recording”

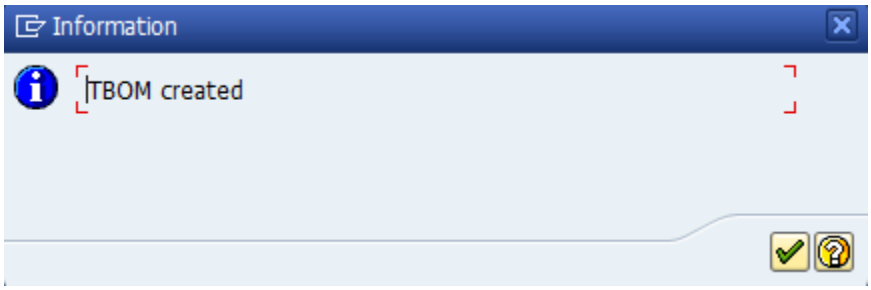


Step 9: BPX clicks on “Set to Done”



Step 10: Work item is completed and sent back to Quality Expert

Step 11: TBOM is recorded in the background



Note

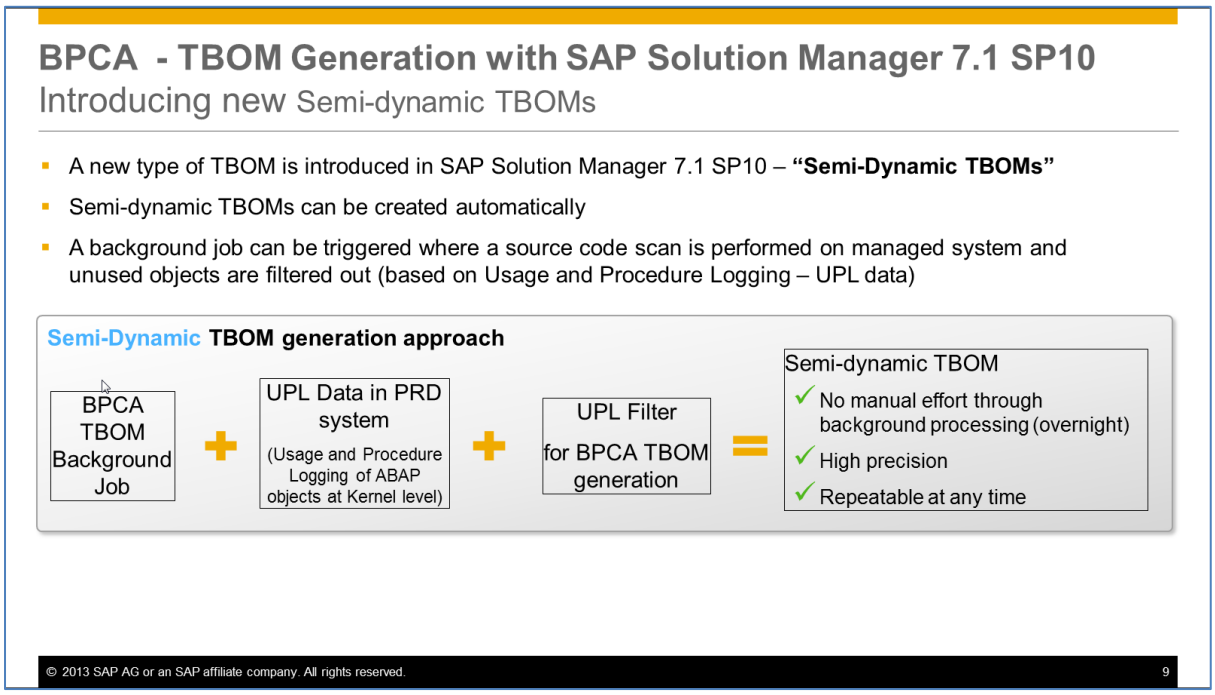
If a business process expert cannot execute the process step, the user can send the work item back to Quality Expert by clicking on "Back to QA Expert" button.

Note

If a business process expert wishes to delegate the task of execution to another user, the user can click on "Forward"

4.1.6 How to create semi-dynamic TBOMs

With SAP Solution Manager 7.1 SP10, it is possible to create semi-dynamic TBOMs in BPCA. BPCA utilizes Usage and Procedure Logging (UPL) to filter and find only those objects which are used in production system.



Please refer to Chapter 7 of this guide to know how to activate UPL. Below steps show how to run a background job to create the semi-dynamic TBOMs for a given project (with pre-defined business blueprint)

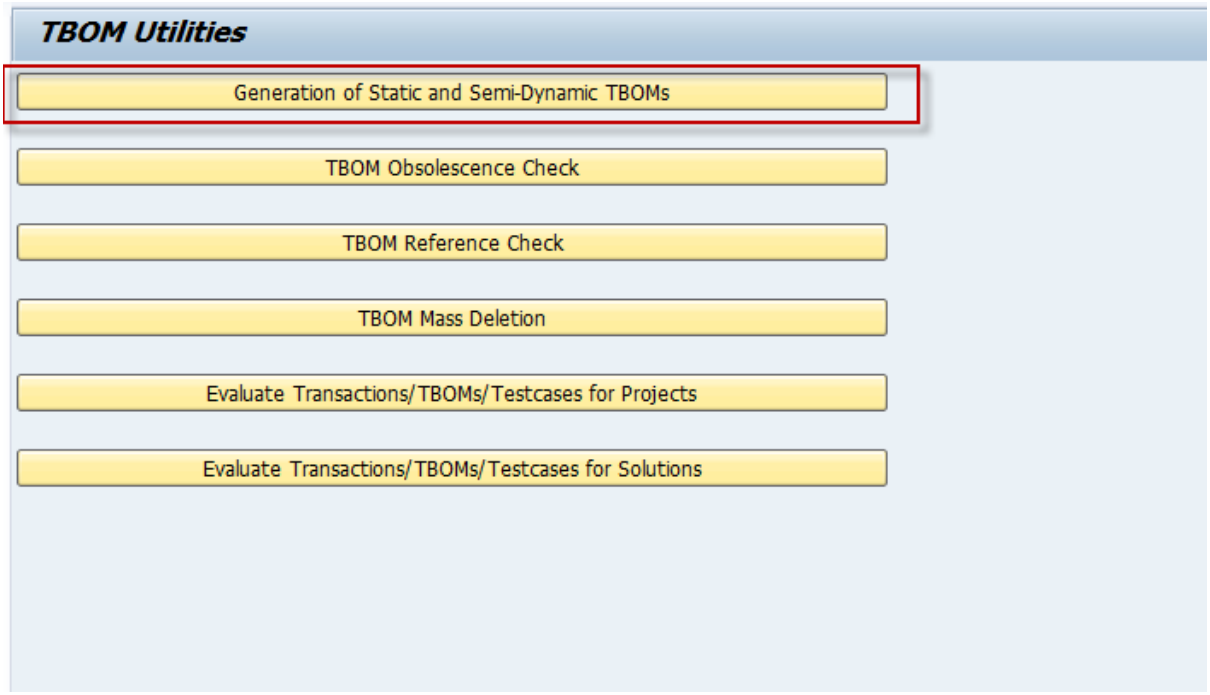
Step 1: Go to the test management work center by clicking on the link easy access menu.

Step 2: Navigate to the "Administration" application.

Step 3: Click on "Goto TBOM Utilities".

Step 4: The TBOM utilities transaction is opened in the SAPGUI window.

Step 5: Click on “Generation of static and Semi-Dynamic TBOMs”.



Step 6: Select your project RG_SP09 (by default your project should be selected).

Step 7: Select the checkbox “Create Semi-Dynamic TBOMs”.

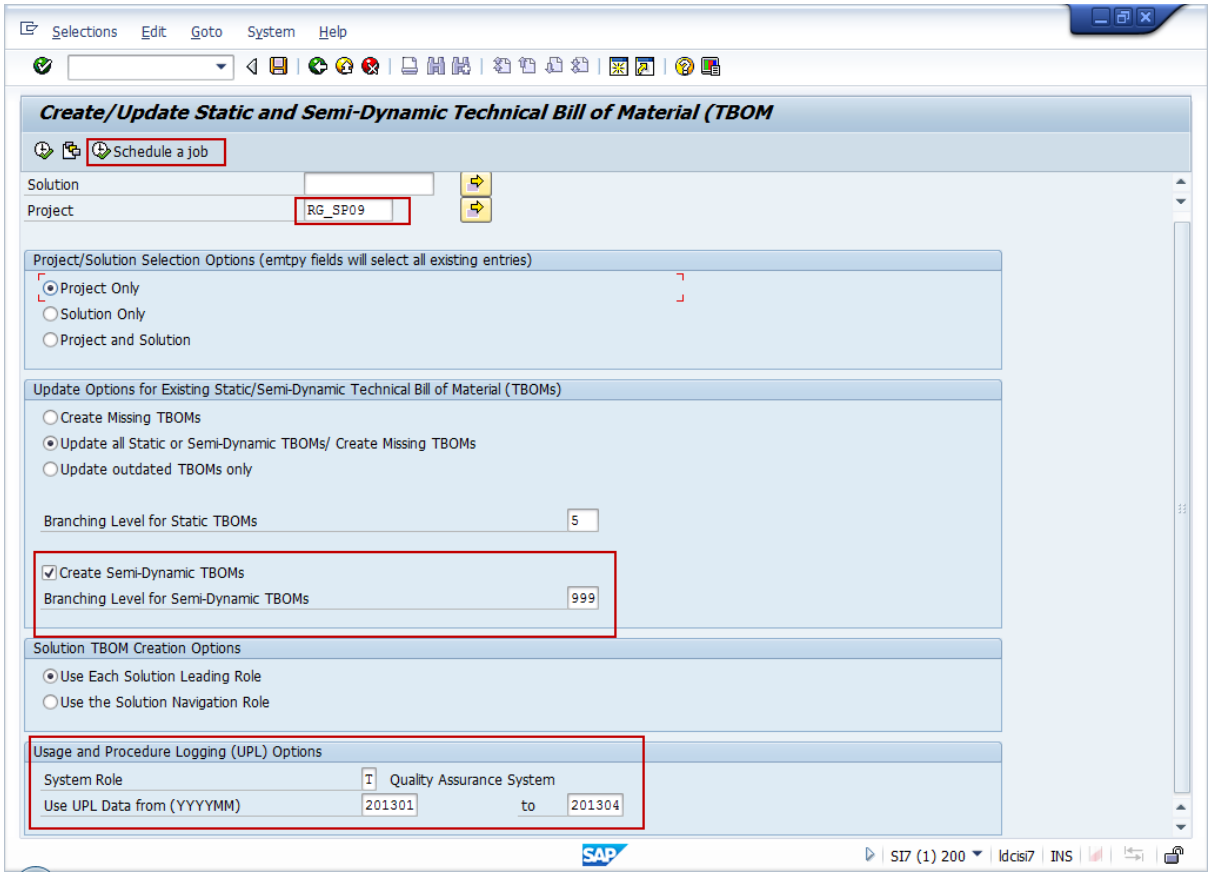
Step 8: In the UPL section, select system role as Quality Assurance System (value T) – This should match to the system which has the UPL data available

Step 9: Select the date range, for example “201301” to “201304”. (Jan 2013 to April 2013)

Step 10: Click on “Schedule a job”.

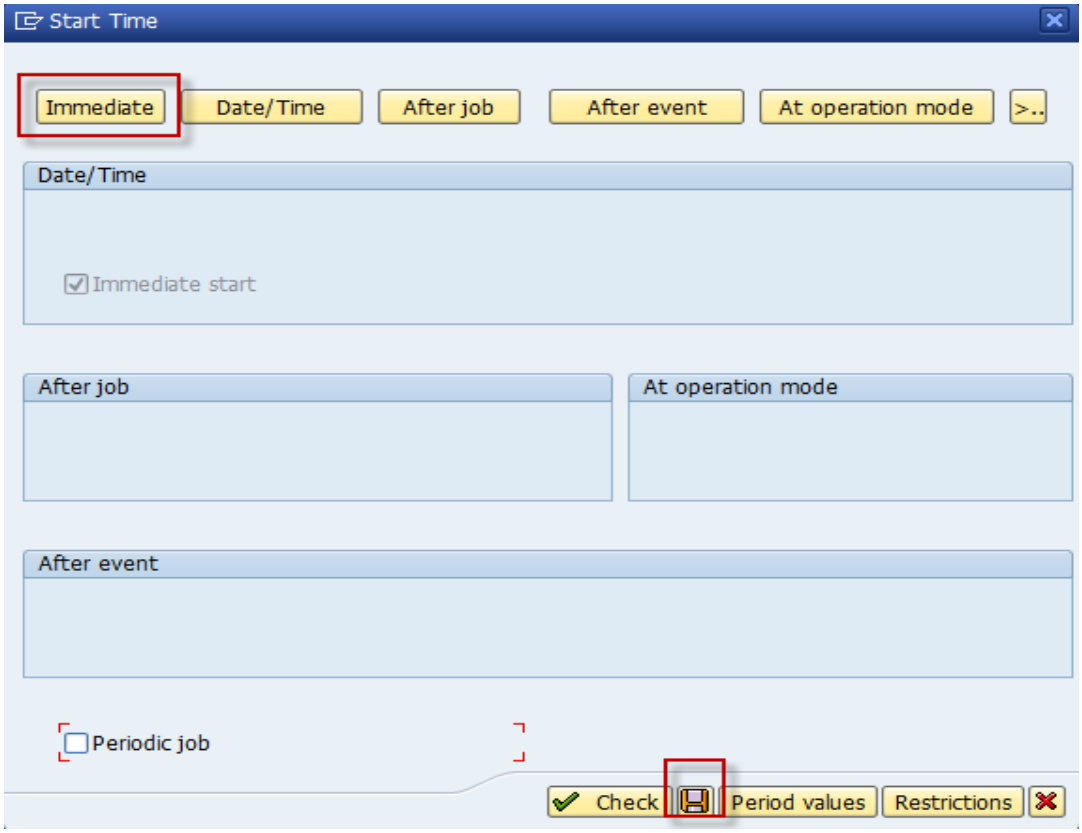
Note

Please note that when you run this job, BPCA picks the system from the system role assigned in SOLAR02 –Solution Manager Configuration transaction. So ensure that the right managed system is assigned to the system role selected in SOLAR02 transaction of your project.

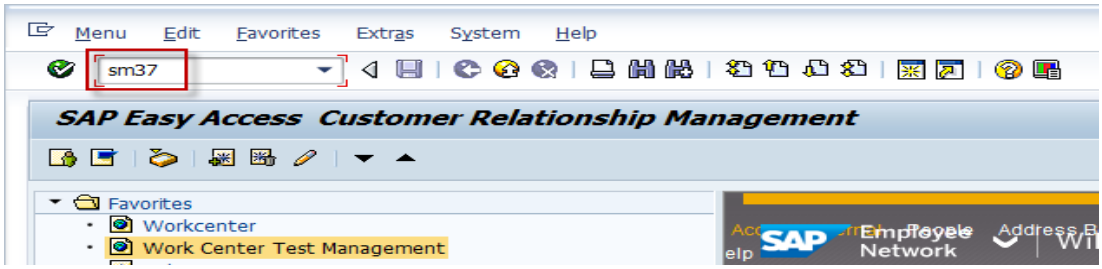


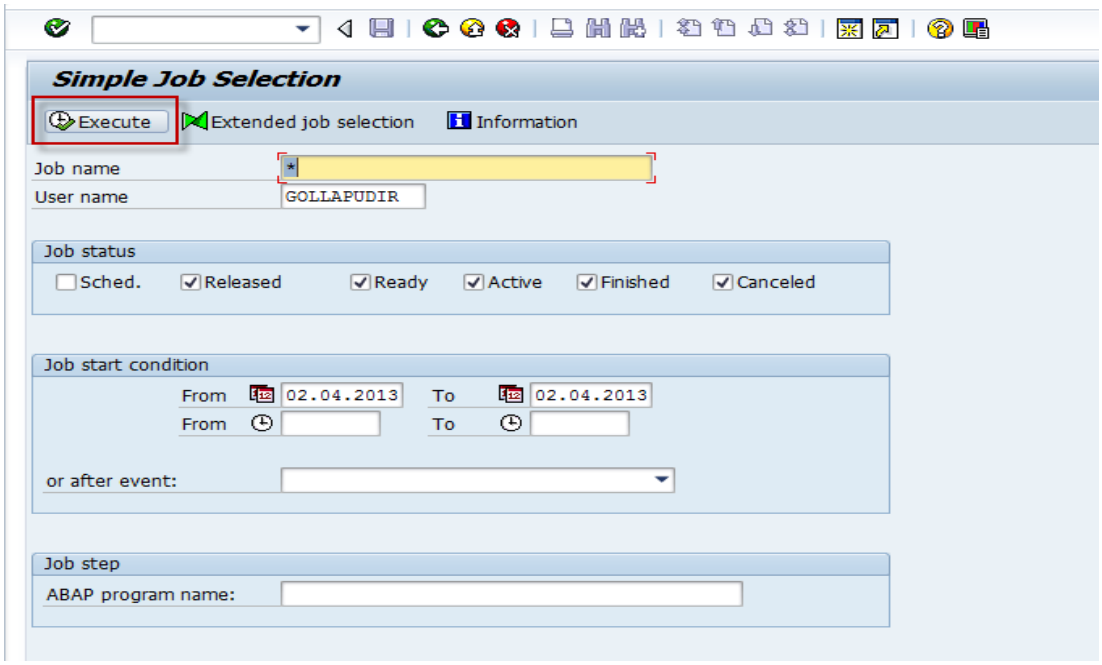
Step 11: In the job scheduling window click on “Immediate” or schedule at a specific date or time

Step 12: Click on “Save” button. A job is now scheduled for your user.



Step 13: Go to transaction “SM37” click on “Execute” button.

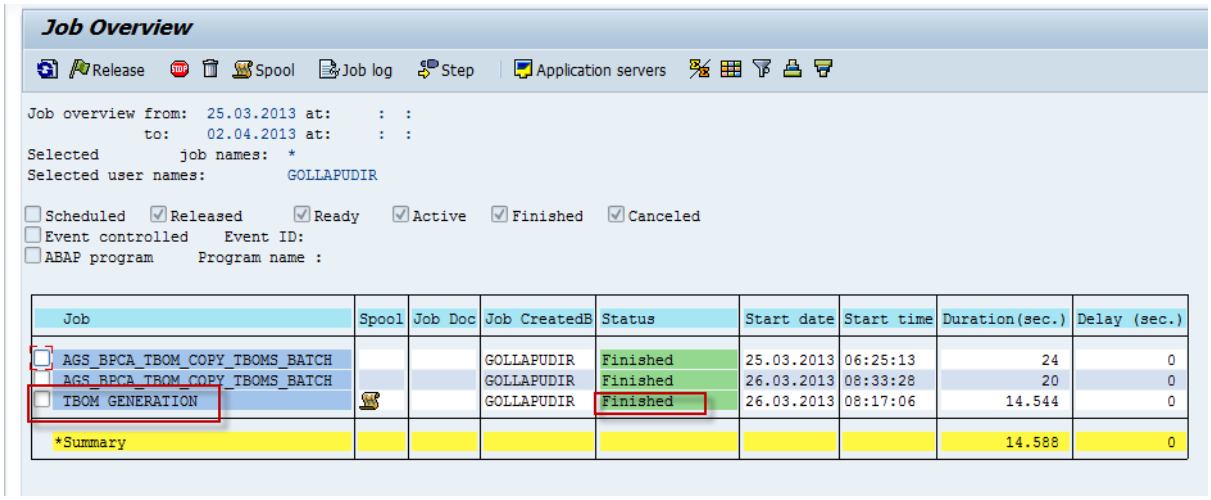




Step 14: In the job overview screen, you will see the “TBOM_GENERATION” job.

Step 15: Click on “Refresh” button to see if the job is completed – status “Finished”.

Step 16: This job can take a few hours.



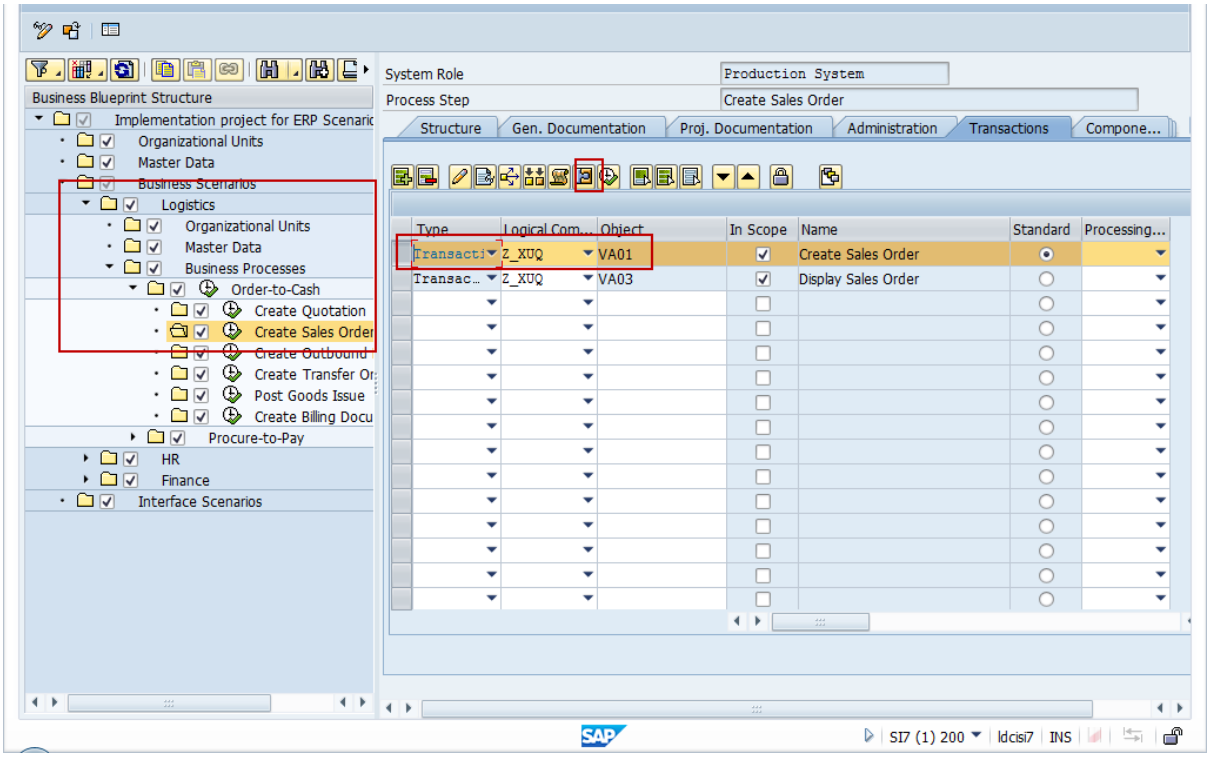
Step 17: Once the job for semi-dynamic TBOMs is finished, you can go to SOLAR01 transaction again.

Step 18: Open your project.

Step 19: Navigate to “Create Sales Order”.

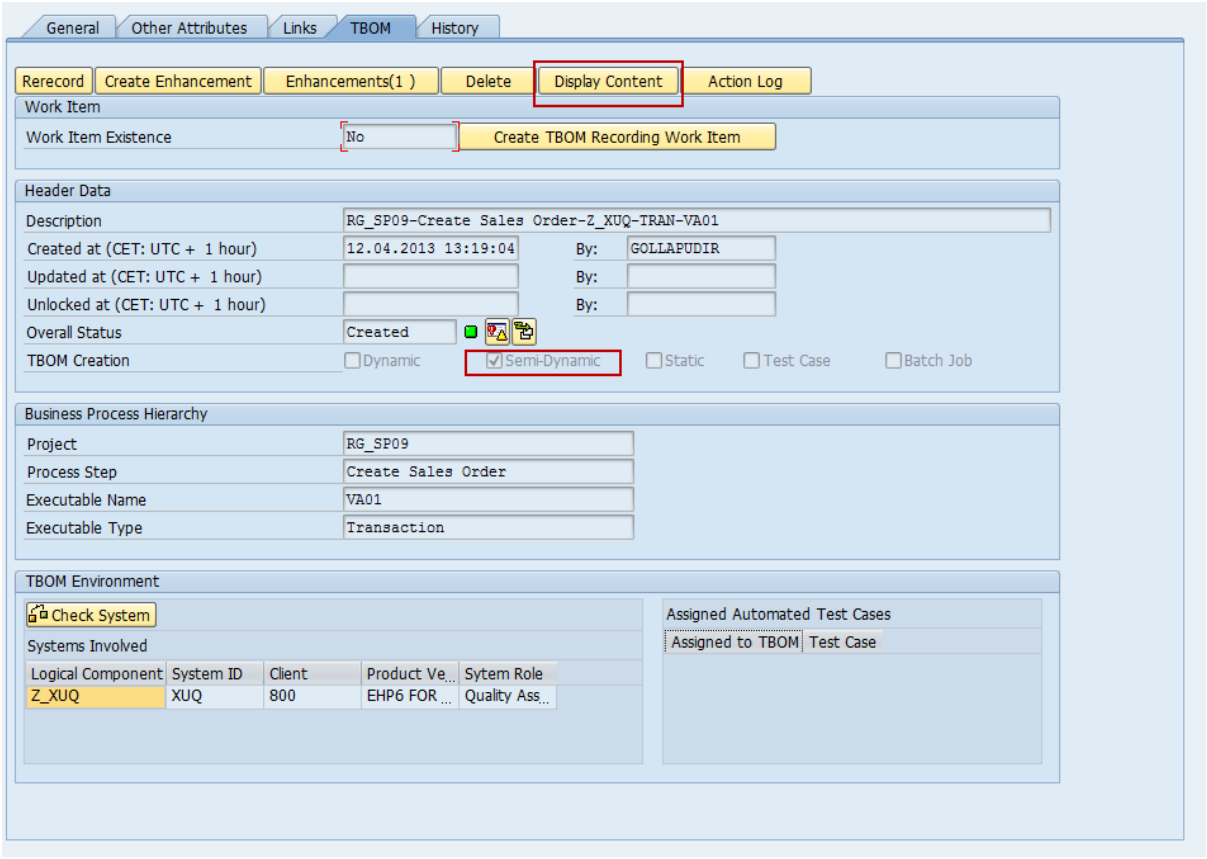
Step 20: Select transaction “VA01”.

Step 21: Click on Attributes button.



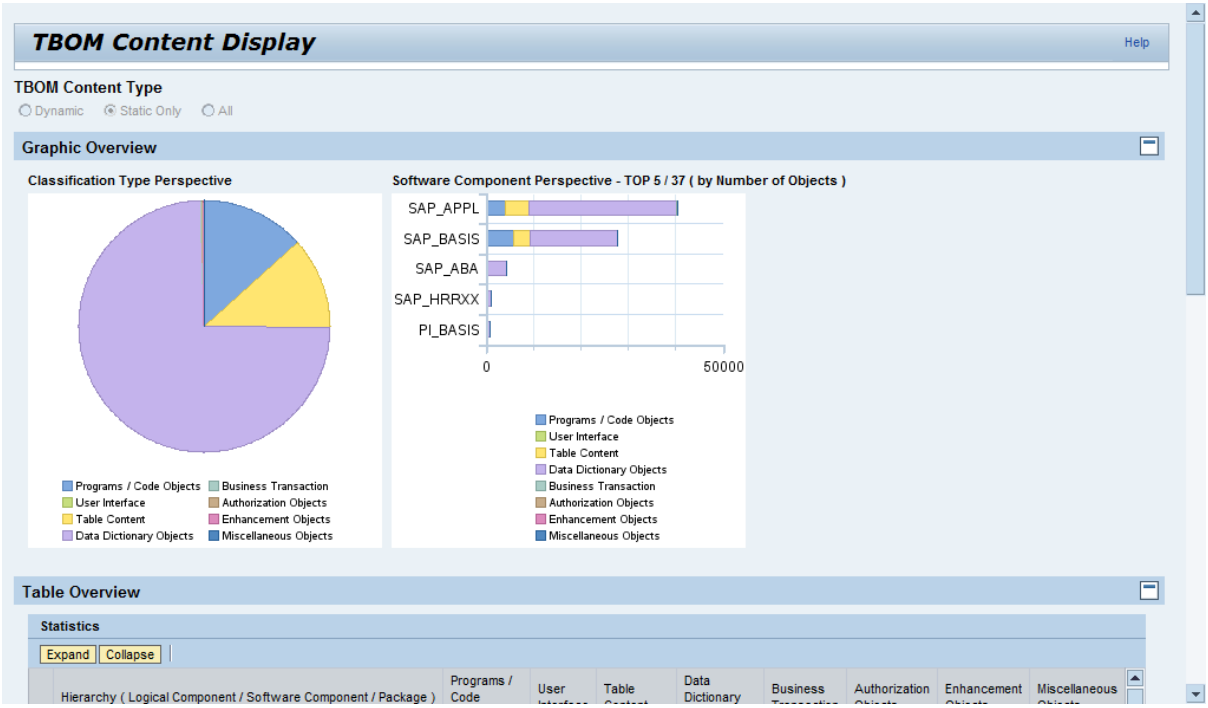
Step 22: Observe that a “semi-dynamic” TBOM was created by the background job.

Step 23: Click on “Display Content”.



If there is no UPL data available for a given transaction, a Static TBOM is created by default.

Step 24: Overview graphic shows the distribution of objects.



5. BPCA Use Cases for Change Impact Analysis

5.1 Use Case 1: Change impact analysis of a Customizing Change

The following steps describe the procedure to generate a change analysis result for evaluating a "Customizing Change"

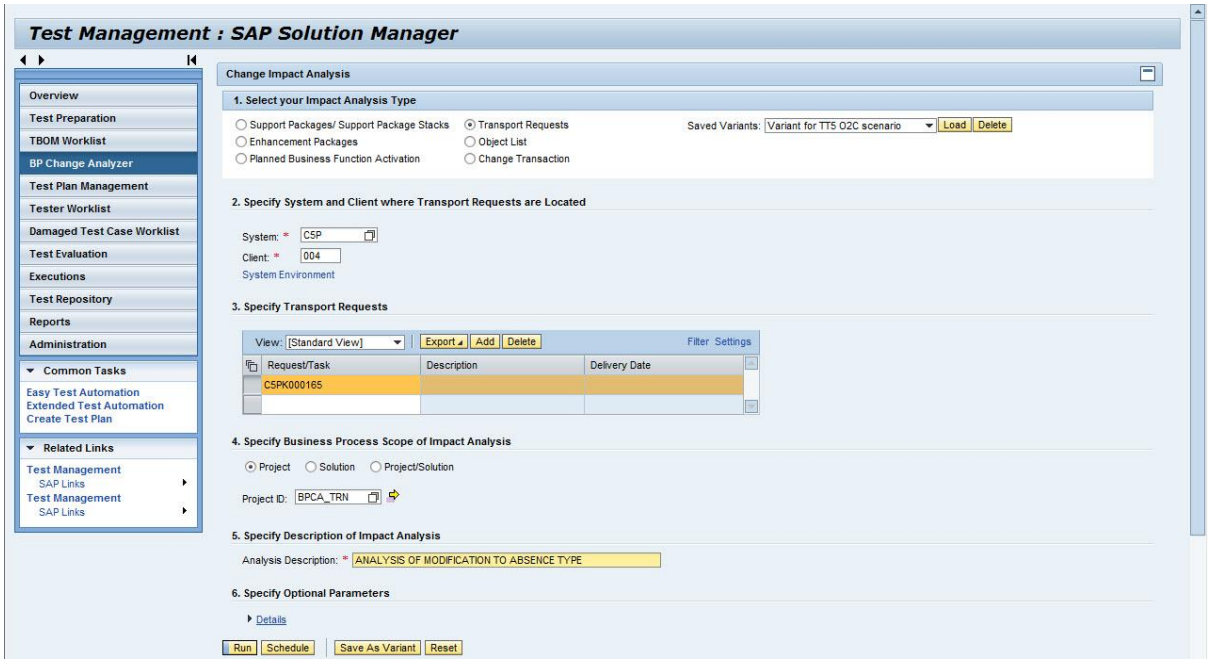
Step 1: Go to Test Management work center in Solution Manager using the Transaction SOLMAN_WORKCENTER

Step 2: Go to BP Change Analyzer View. This view will show existing/previous analysis results which were created and also allow us to create a new result of BP Change Analysis

Step 3: To create a new change impact analysis enter the following

- Select the source of change: From transport requests (In this example we would like to evaluate the change from a transport request. We could also select “From Delivery Transports From SAP” if the change that we want to evaluate is a result of a delivery transport from SAP.)
- System: C5P (The target manage system on which we would like to evaluate the impact of a change)
- Client: 004 (Corresponding client of the above selected system.)
- Transport Request: C5PK000165
- Project ID: BPCA_TRN (Select the project which describes the critical business processes which we want to evaluate. We could also select a solution which has the same set of business processes.)
- Analysis Description: "ANALYSIS OF MODIFICATION TO ABSENCE TYPE"

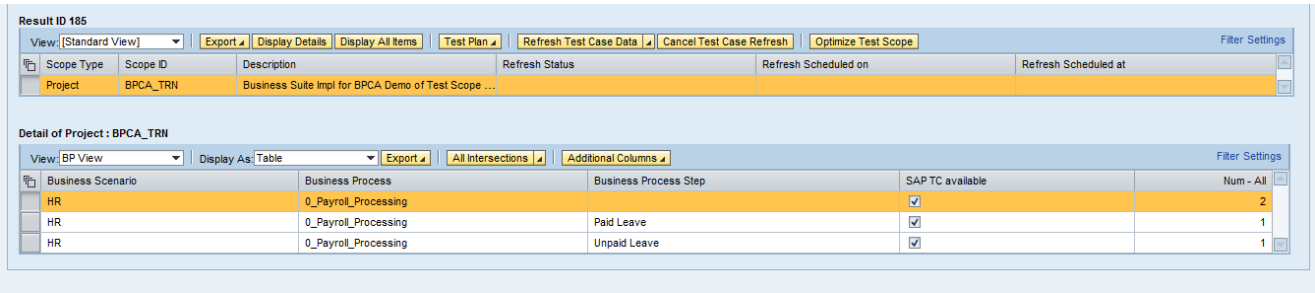
Below screenshot shows the same.



Step 4: Click the “Run” button.

Step 5: This will run change impact analysis with the above selected parameters and creates a new result ID. The result ID will appear at the top of the screen at the end of the run

Step 6: We could see the details of this result using the above created result ID in the results panel of the current view



Step 7: Observe that all impacted processes shown in the table

Note

Make sure the status of the new result ID that we have just created has the status as “Finished”. If the status shows as “Errors”, we need to regenerate the result by checking the parameters we have entered for the change impact analysis. We can find more details of the errors by clicking on the “Application Log” button for the selected result ID

5.1.1 Result Interpretation

In this section we will understand the procedure to go through the results of a change impact analysis and also find out how to interpret these details.

Step 1: Go to Test Management work center in Solution Manager using the Transaction SOLMAN_WORKCENTER

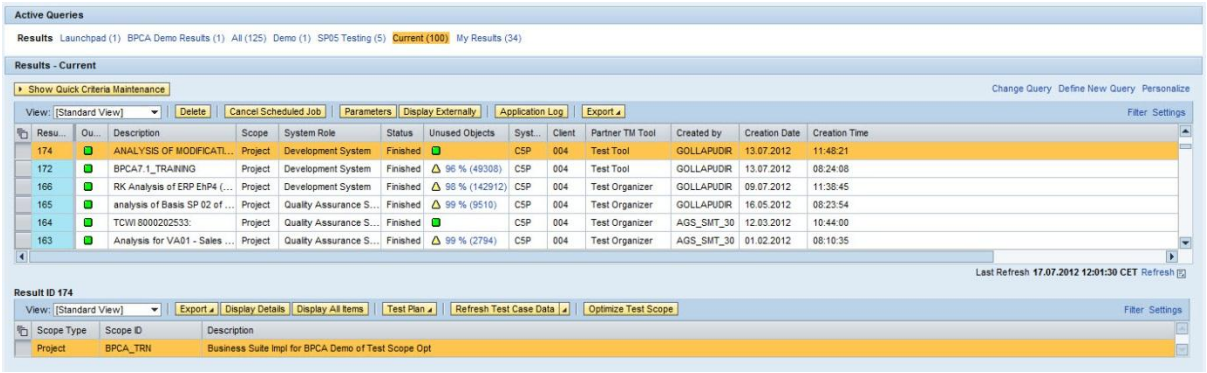
Step 2: Go to BP Change Analyzer View. This view will show existing/previous analysis results which were created and also allow us to create a new result of BP Change Analysis.

Step 3: To view an existing result ID of a previously executed change impact analysis, go to the results panel of the BP change analyzer view.

Step 4: Select the result ID which we want to analyze. In our example we will select the result ID 174 which is for ANALYSIS OF MODIFICATION TO ABSENCE TYPE. (We can use filters/queries to find the result ID of our interest in the list shown in this panel.)

Step 5: Click the button display parameters to review the parameters we have used to generate this change impact analysis result.

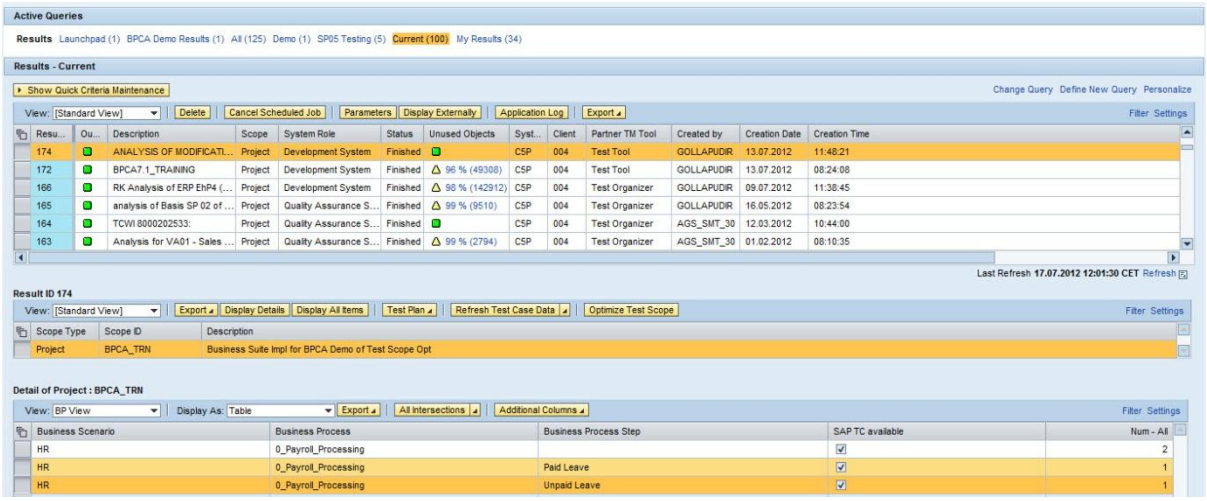
Step 6: When we select the result ID we will see a list of projects or solutions which are affected in this change impact analysis. In our example we see that the project BPCA_TRN is shown which means that the business processes defined in this project have been affected by the change which we are evaluating.



Step 7: Select the project BPCA_TRN in the projects panel corresponding to the result ID 174.

Step 8: We will now see the nodes in the business process hierarchy within the above selected project which are affected by the change that we are evaluating. In our example we see that two nodes of the type Process Step which correspond to different transactions within the Payroll Processing business process are affected by the customizing change that we are evaluating. In the details panel we can observe the following

- The process step “Paid Leave” is affected.
- The process step “Unpaid Leave” is affected.

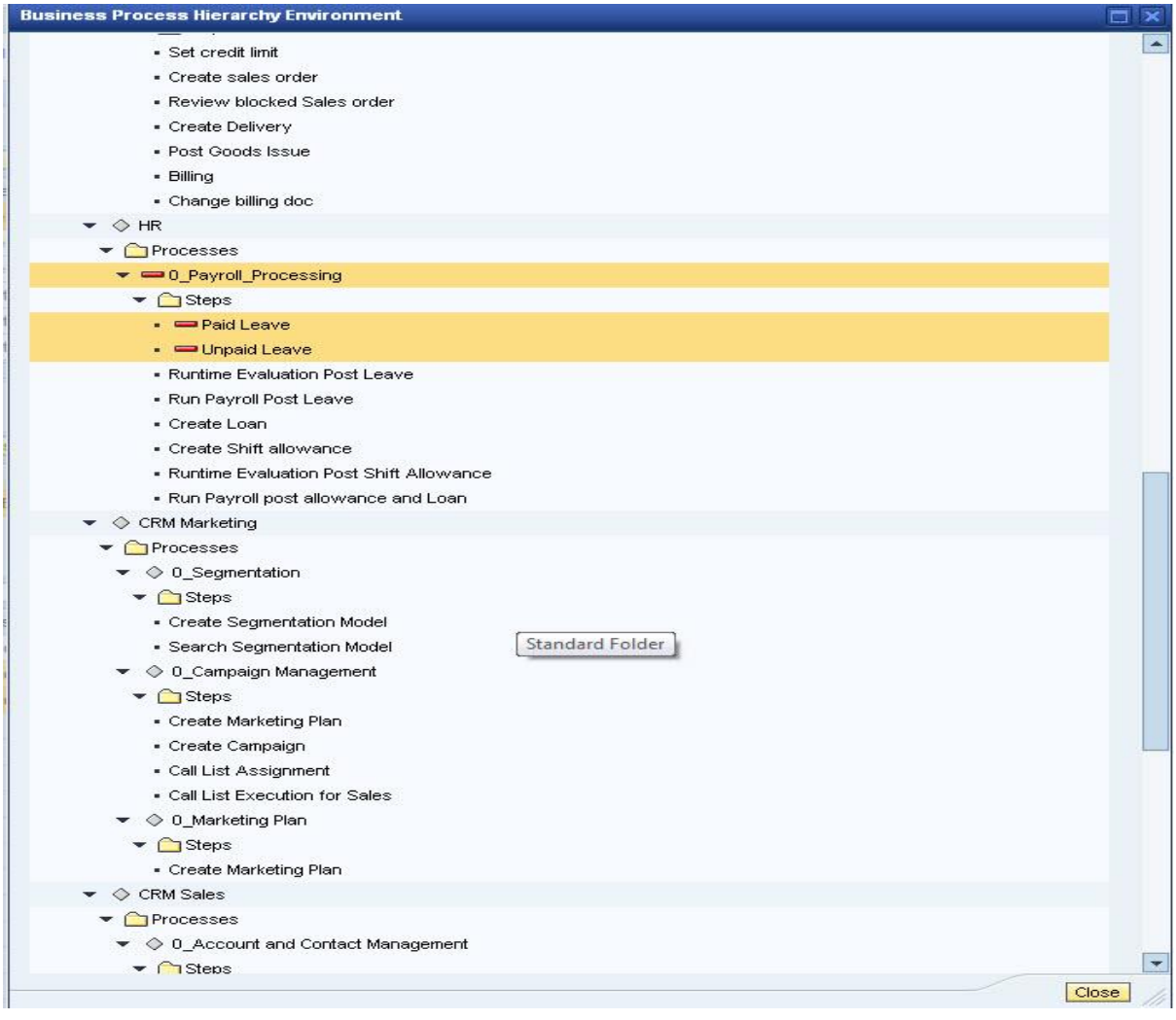


Step 9: Select the nodes "Paid Leave" and “Unpaid Leave”.

Step 10: Click the button “All Intersections”

Step 11: Select “BPH Environment” from the drop-down list.

Step 12: Click “Display” button under “Complete Business Process Hierarchy Nodes” tab in the “Business Process Hierarchy Environment” window.



Step 13: We see that only process steps “Paid Leave” and “Unpaid Leave” are affected and “Create Loan” is unaffected under the business process “Payroll Processing”.

5.2 Use Case 2: Change Impact Analysis - ABAP Workbench Change

The following steps describe the procedure to generate a change analysis result for evaluating an "ABAP Workbench Change"

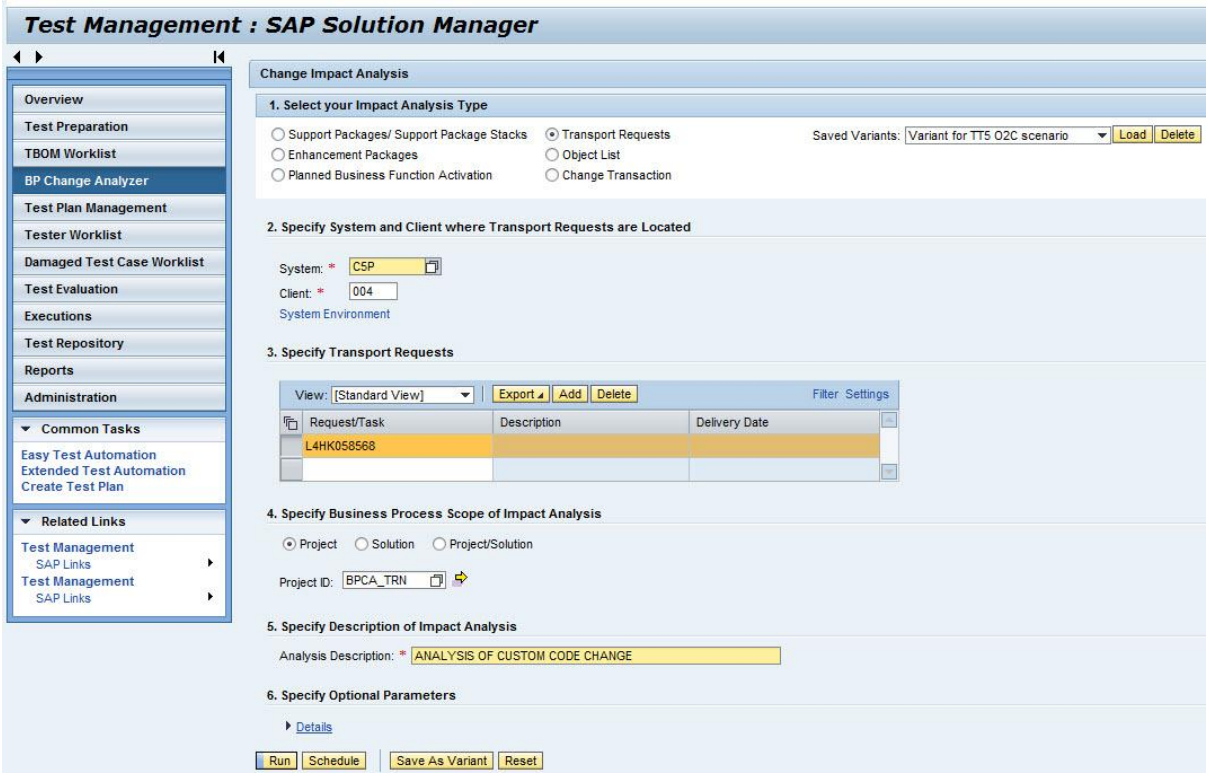
Step 1: Go to Test Management work center in Solution Manager using the Transaction SOLMAN_WORKCENTER

Step 2: Go to BP Change Analyzer View. This view will show existing/previous analysis results which were created and also allow us to create a new result of BP Change Analysis

Step 3: To create a new change impact analysis enter the following

1. Select the source of change: "From transport requests" (In this example we would like to evaluate the change from a transport request. We could also select “From Delivery Transports From SAP” if the change that we want to evaluate is a result of a delivery transport from SAP.)
2. System: C5P (The target managed system on which we would like to evaluate the impact of a change)
3. Client: 004 (Corresponding client of the above selected system.)
4. Transport Request: L4HK058568
5. Project ID: BPCA_TRN (Select the project which describes the critical business processes which we want to evaluate. We could also select a solution which has the set of business processes.)
6. Analysis Description: "ANALYSIS OF CUSTOM CODE CHANGE"

Below screenshot shows the same.



Step 4: Click the “Run” button.

Step 5: This will run change impact analysis with the above selected parameters and creates a new result ID. The result ID will appear at the top of the screen at the end of the run

Step 6: We could see the details of this result using the above created result ID in the results panel of the current view

Step 7: Make sure the status of the new result ID that we have just created has the status as “Finished”. If the status shows as “Errors”, we need to regenerate the result by checking the parameters we have entered for the change impact analysis. We can find more details of the errors by clicking on the “Application Log” button for the selected result ID

5.2.1 Result Interpretation

In this section we will understand the procedure to go through the results of a change impact analysis and also find out how to interpret these details.

Step 1: Go to Test Management work center in Solution Manager using the Transaction SOLMAN_WORKCENTER

Step 2: Go to BP Change Analyzer View. This view will show existing/previous analysis results which were created and also allow us to create a new result of BP Change Analysis

Step 3: To view an existing result ID of a previously executed change impact analysis, go to the results panel of the BP change analyzer view.

Step 4: Select the result ID which we want to analyze. In our example we will select the result ID 176 which is for "ANALYSIS OF CUSTOM CODE CHANGE". (We can use filters/queries to find the result ID of our interest in the list shown in this panel.)

Step 5(optional): You can click the button display parameters to review the parameters we have used to generate this change impact analysis result.

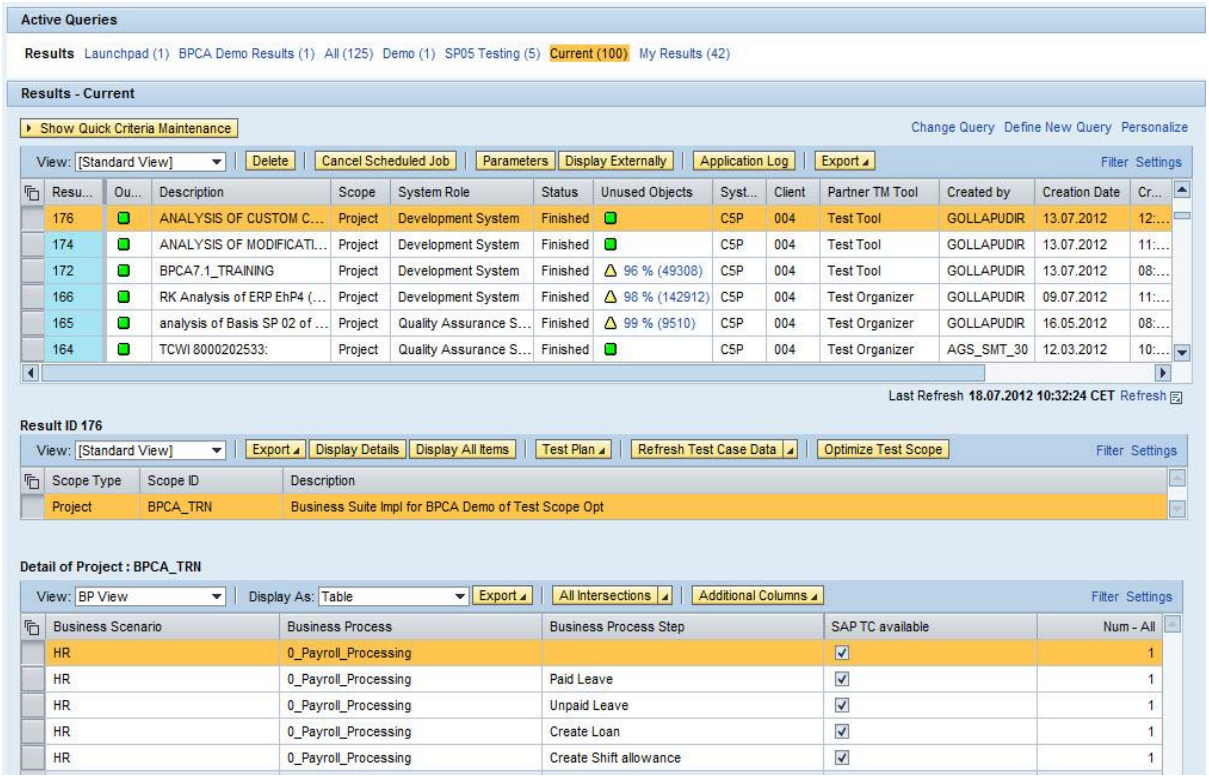
Step 6: When we select the result ID we will see a list of projects or solutions which are affected in this change impact analysis. In our example we see that the project BPCA_TRN is shown which means that the business processes defined in this project have been affected by the change which we are evaluating.

Step 7: Select the project BPCA_TRN in the projects panel corresponding to the result ID 176

Step 8: Click the button “Display Details”

Step 9: We will now see the nodes in the business process hierarchy within the above selected project which are affected by the change that we are evaluating. In our example we see that four nodes of the type Process Step within the Payroll_Processing business process is affected by the workbench change that we are evaluating. In the details panel we can observe the following

- The process step “Paid Leave” is affected.
- The process step “Unpaid Leave” is affected.
- The process step “Create Loan” is affected.
- The process step “Create Shift Allowance” is affected.



Step 10: Select the nodes which we want to get further details about. In our example we will select the process steps “Paid Leave”, “Unpaid Leave”, “Create Loan”, “Create Shift Allowance”.

Step 11: Click the button ‘All Intersections’.

Step 12: Select “BPH Environment” from the drop-down list.

Step 13: Click “Display” button under “Complete Business Process Hierarchy Nodes” tab in the “Business Process Hierarchy Environment” window. Notice the affected business process steps.

5.3 Use Case 3: Change Impact Analysis of Business Function in EHPs

SAP Business Suite customers who want to implement new functions for their SAP solution using business functions within the enhancement packages (EhP) must ask themselves which critical business processes will be affected by this implementation. The answer to this question is important, because the critical processes must be submitted to functional and regression tests before the new businesses functions are activated in the productive landscape.

BPCA offers the business process change analyzer (BPCA) tool for general change-impact analysis of software changes on business processes. To allow for individual, customer-specific business processes that are affected by the activation of business functions to be identified, the functionality of BPCA has been extended. The following approach can then be followed

- SAP delivers new functionality for the Business Suite via Enhancement Packages (EhP).
- Customer deploys the EhP
- Customer uses BPCA to identify process steps of mission-critical business processes affected by planned EhP Business Function before activation

5.3.1 Step by step description

The following steps describe the procedure to perform a change impact analysis for evaluating a planned business function in an SAP Enhancement Package.

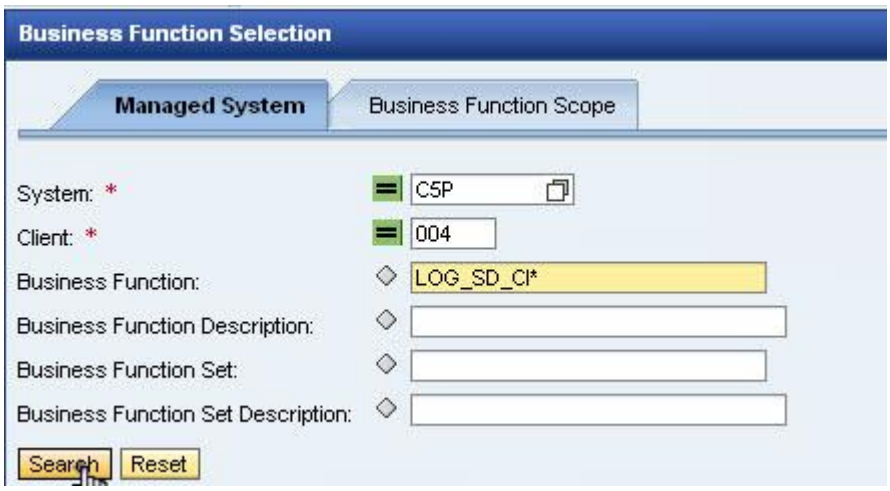
Step 1: Go to Test Management work center in Solution Manager using the Favorite link : Work Center: Testing Management -> Test Management

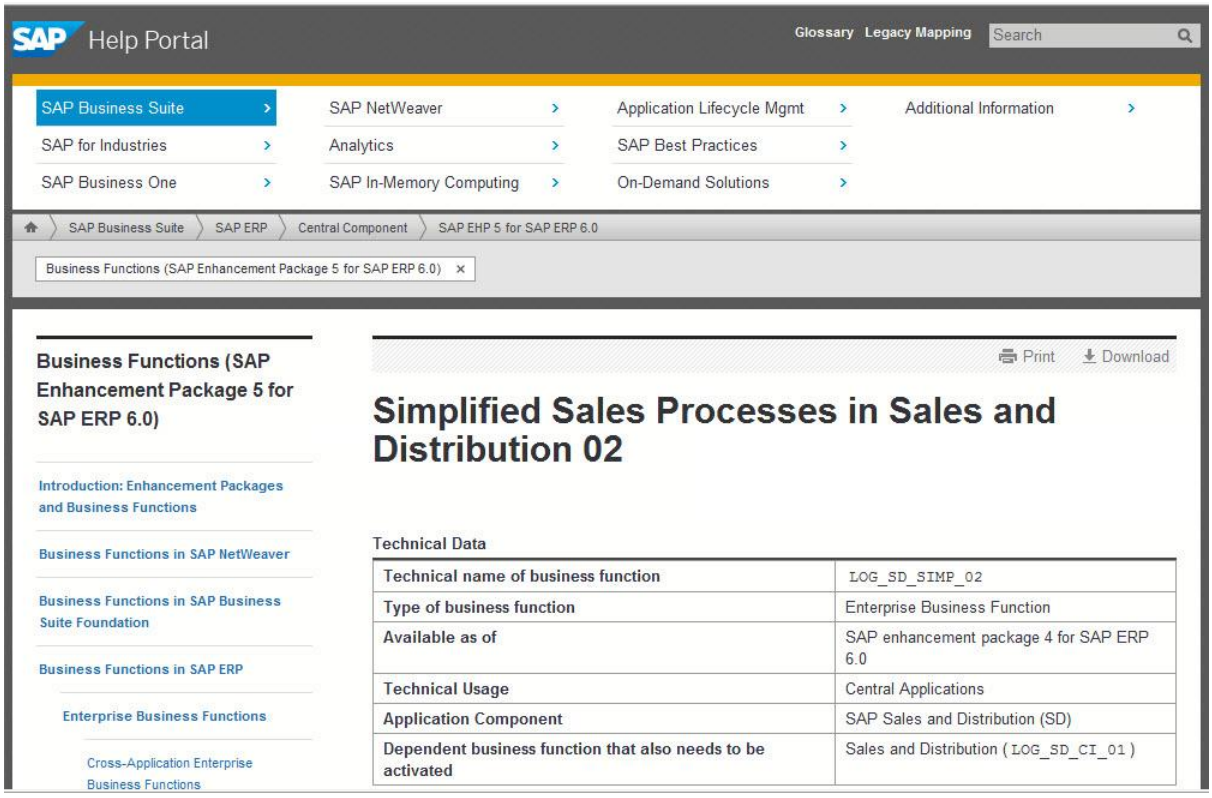
Step 2: Go to BP Change Analyzer View.

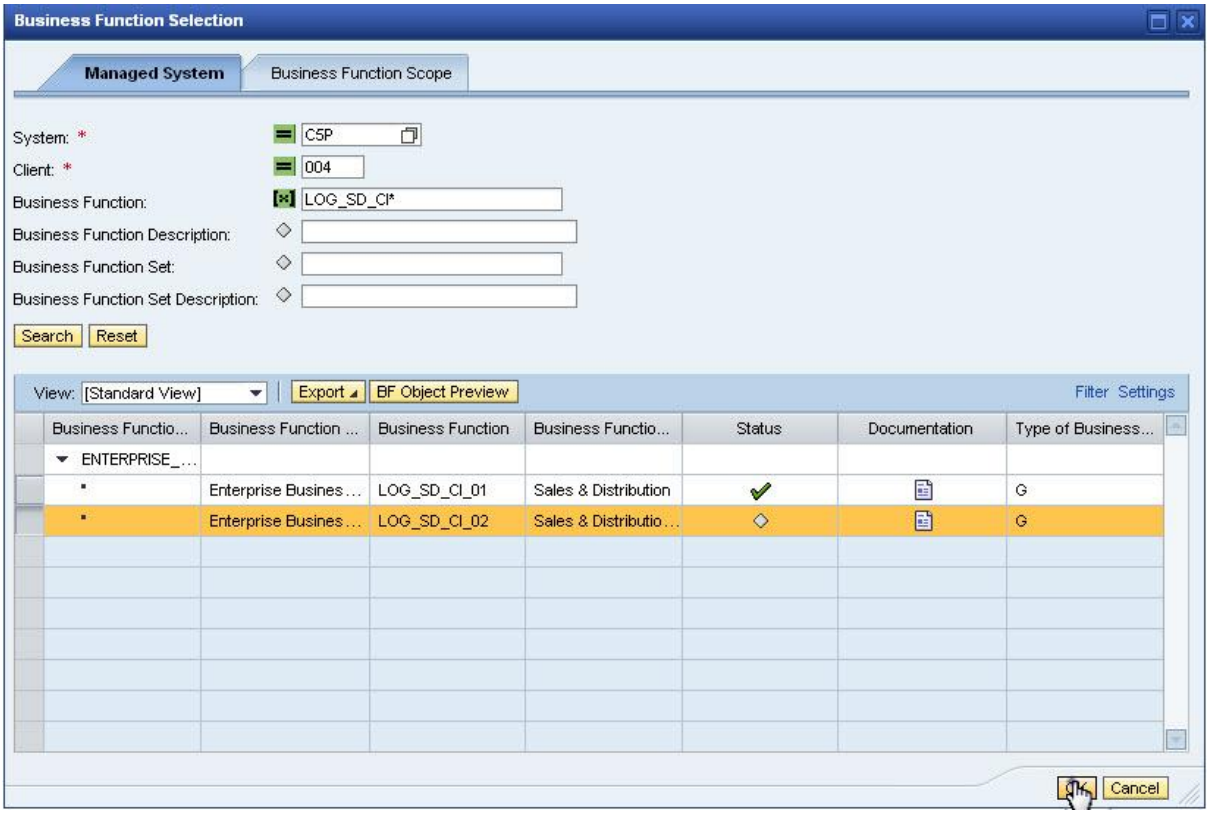
Step 3: To create a new change impact analysis enter the following

1. Select the source of change: Planned Business Function Activation (radio button)
2. System: C5P
3. Client: 004
4. For finding a business function
    - Click on F4 help for finding a business function.
    - Enter the search criteria as
        a. System: C5P (pre-filled)
        b. Client: 004 (pre-filled)
        c. Business Function: *LOG_SD_CI*
        d. Click on Search
        e. Expand the tree in the results table for “ENTERPRISE_BUSINESS_FUNCTIONS”
        f. Click the documentation link for the business function “Sales & Distribution”. You will see the official SAP documentation for that business function.
        g. Minimize the window and select the business function “LOG_SD_CI_02”.
        h. Click OK.
5. Project ID: BPCA_TRN

6. Analysis Description: " BUSINESS FUNCTION ANALYSIS"

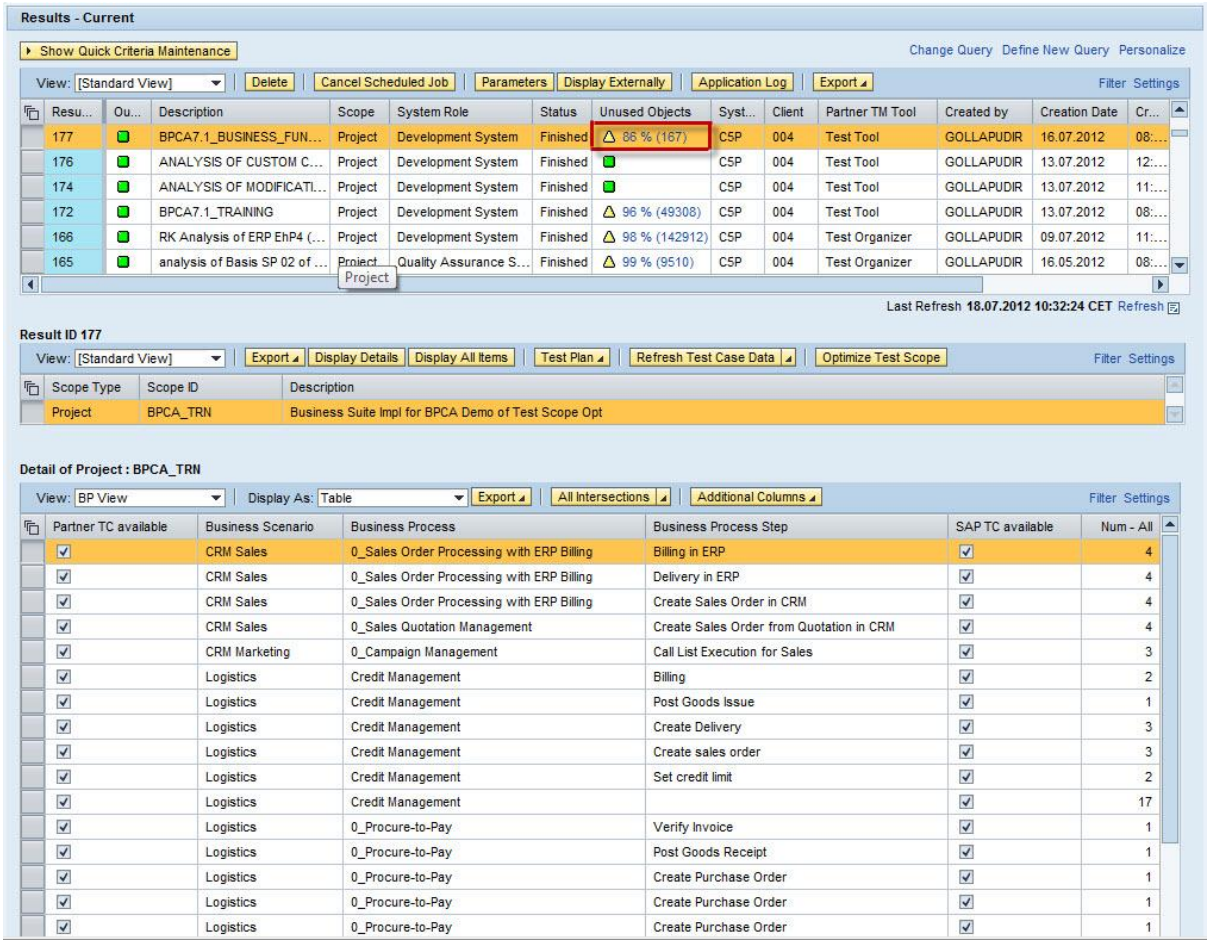






Step 4: Click the “Run” button.

Step 5: Refresh the table if to make sure the analysis is in finished status.



Note

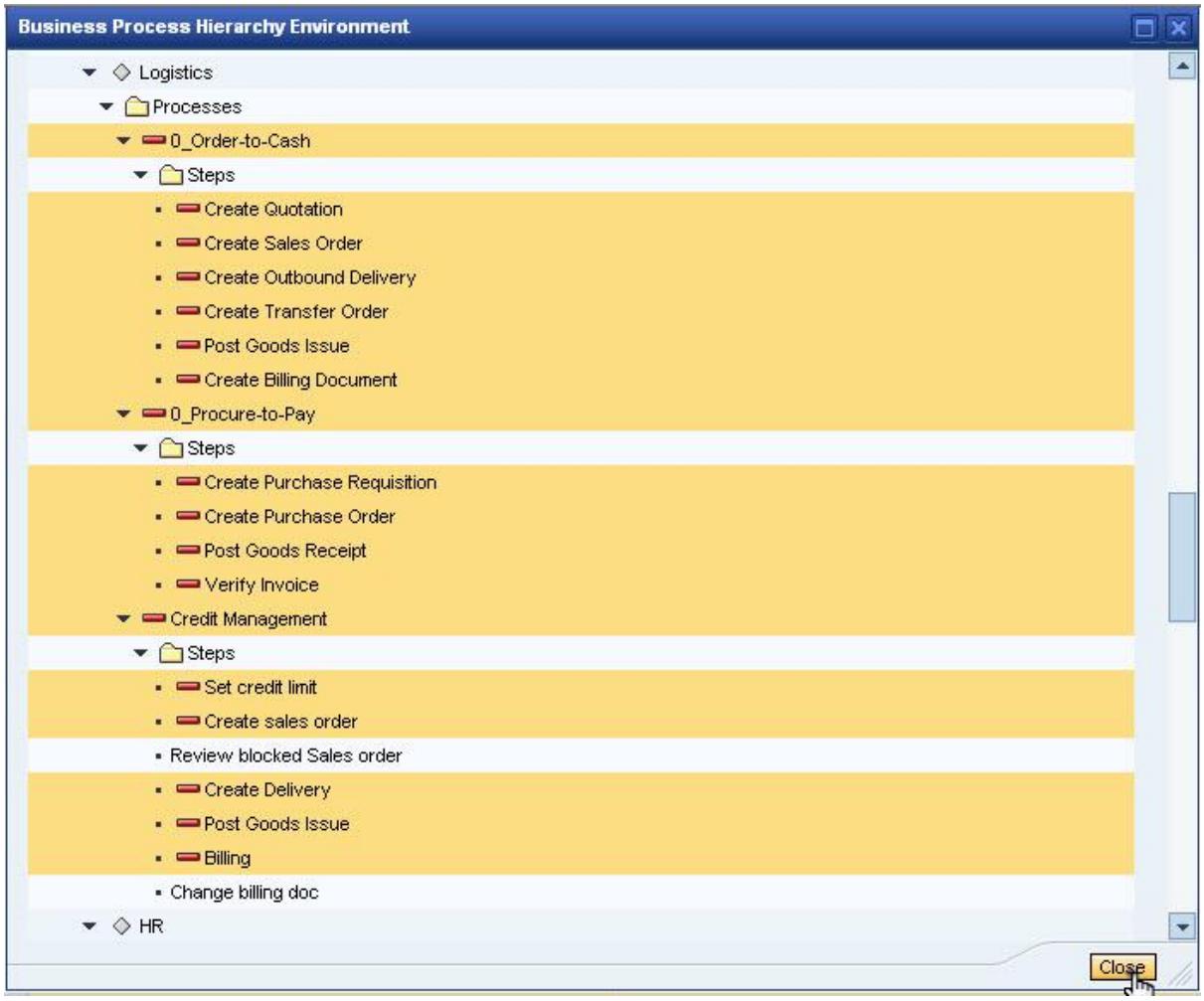
Observe that out of the 167 objects which are part of the business function, 86% were unused by the processes documented in the given project.

Step 6: Select all the nodes which we want to get further details about.

Step 7: Click the button ‘All Intersections’.

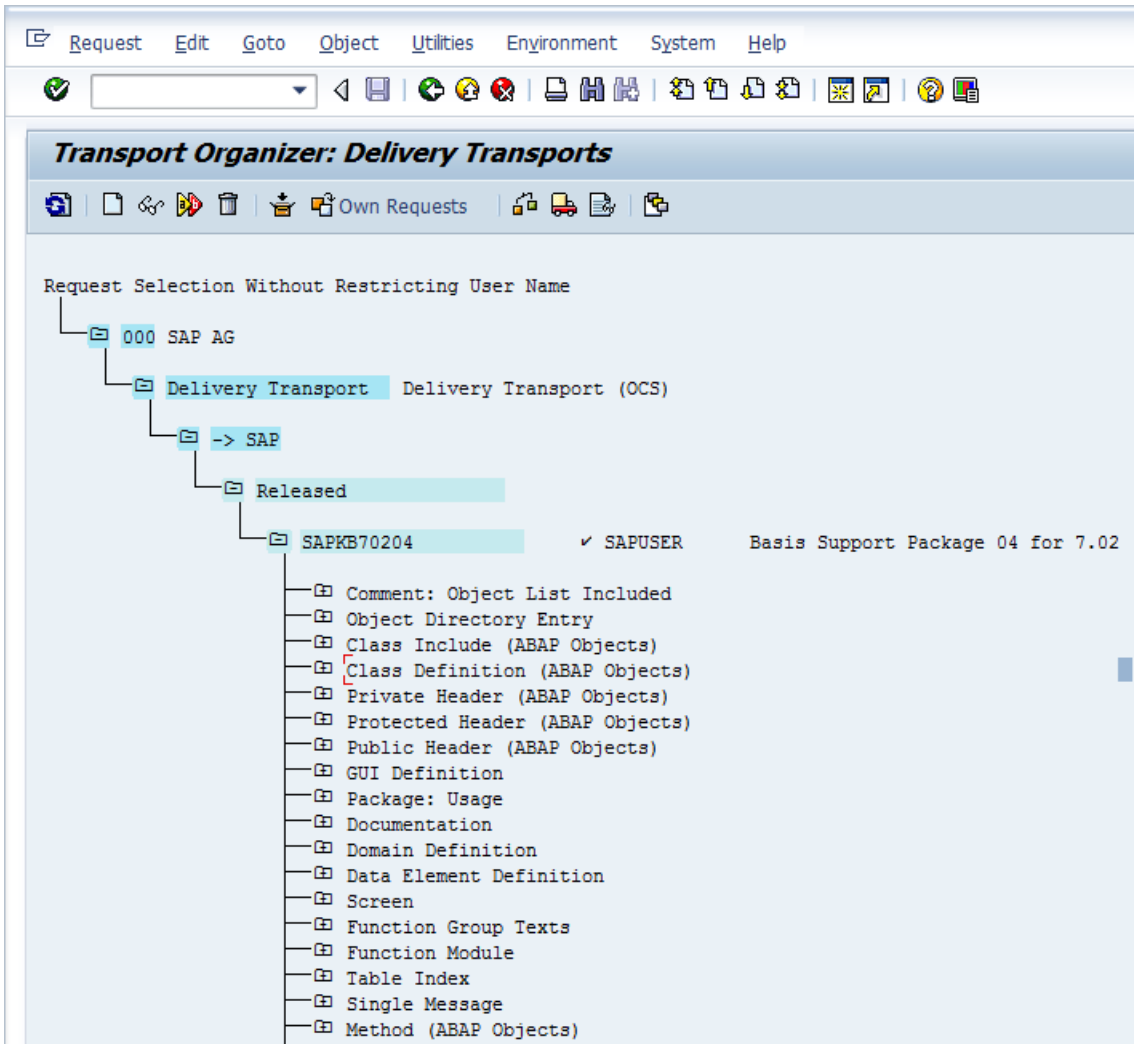
Step 8: Select “BPH Environment” from the drop-down list.

Step 9: Click “Display” button under “Complete Business Process Hierarchy Nodes” tab in the “Business Process Hierarchy Environment” window. Notice the affected business process steps.

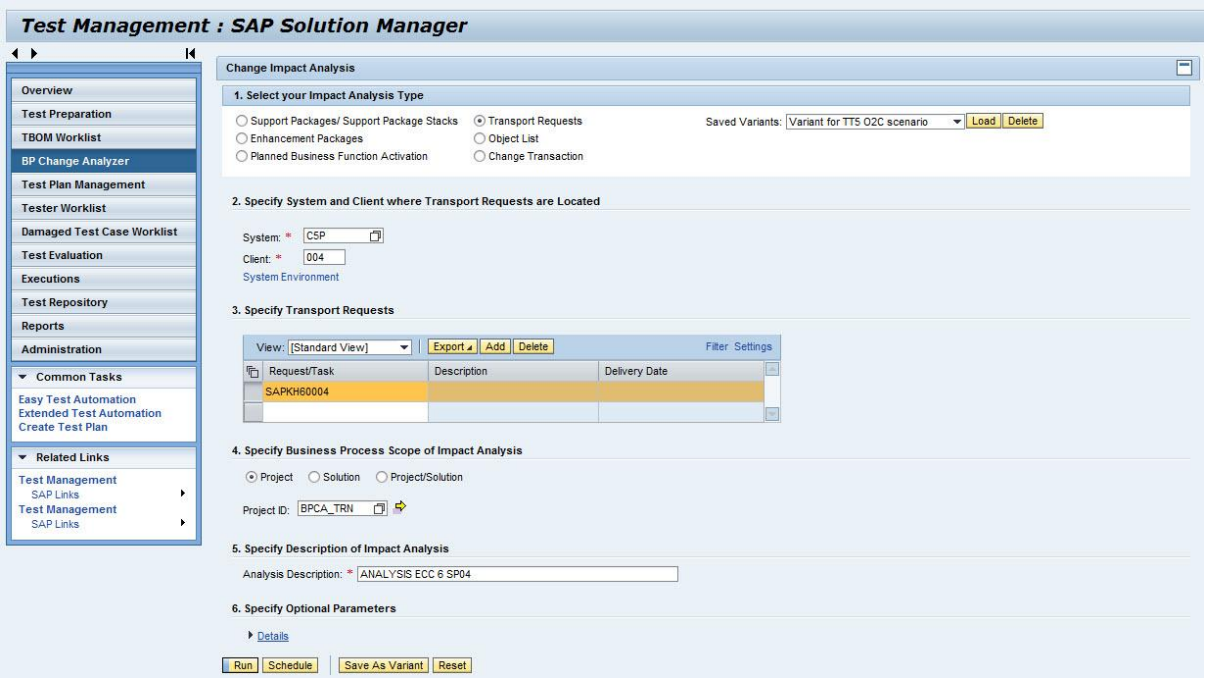

Business Process Hierarchy Environment
Logistics
Processes
0_Order-to-Cash
Steps
Create Quotation
Create Sales Order
Create Outbound Delivery
Create Transfer Order
Post Goods Issue
Create Billing Document
0_Procure-to-Pay
Steps
Create Purchase Requisition
Create Purchase Order
Post Goods Receipt
Verify Invoice
Credit Management
Steps
Set credit limit
Create sales order
Review blocked Sales order
Create Delivery
Post Goods Issue
Billing
Change billing doc
HR
Close

5.4 Use Case 4: Change Impact Analysis- Support Package Change

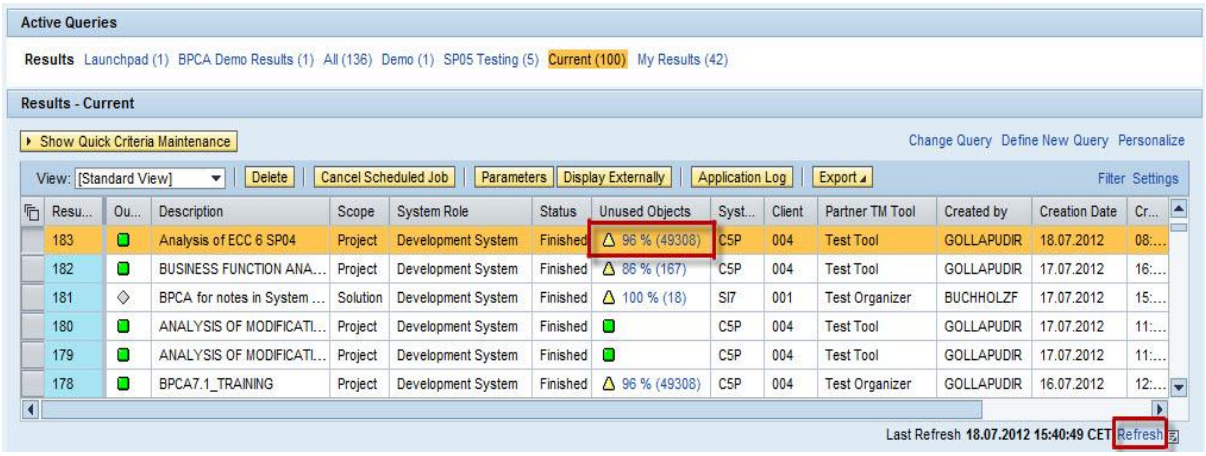
The following steps describe the procedure to perform a change impact analysis for evaluating a SAP Support Package. For this exercise we will use a SAP BASIS support package 04 for SAP BASIS 7.02 which is bundled under SAP delivery transport request # SAPKB70204



Step 1: Go to Test Management work center in Solution Manager using the Favorite link
   a. Work Center: Testing Management -> Test Management
Step 2: Go to BP Change Analyzer View.
Step 3: To create a new change impact analysis enter the following
   a. Select the source of change: Delivery Transports from SAP (radio button)
   b. System: C5P
   c. Client: 004
   d. Transport Request: SAPKH60004
   e. Project ID: BPCA_SCOPE
   f. Analysis Description: " ANALYSIS ECC 6 SP04"



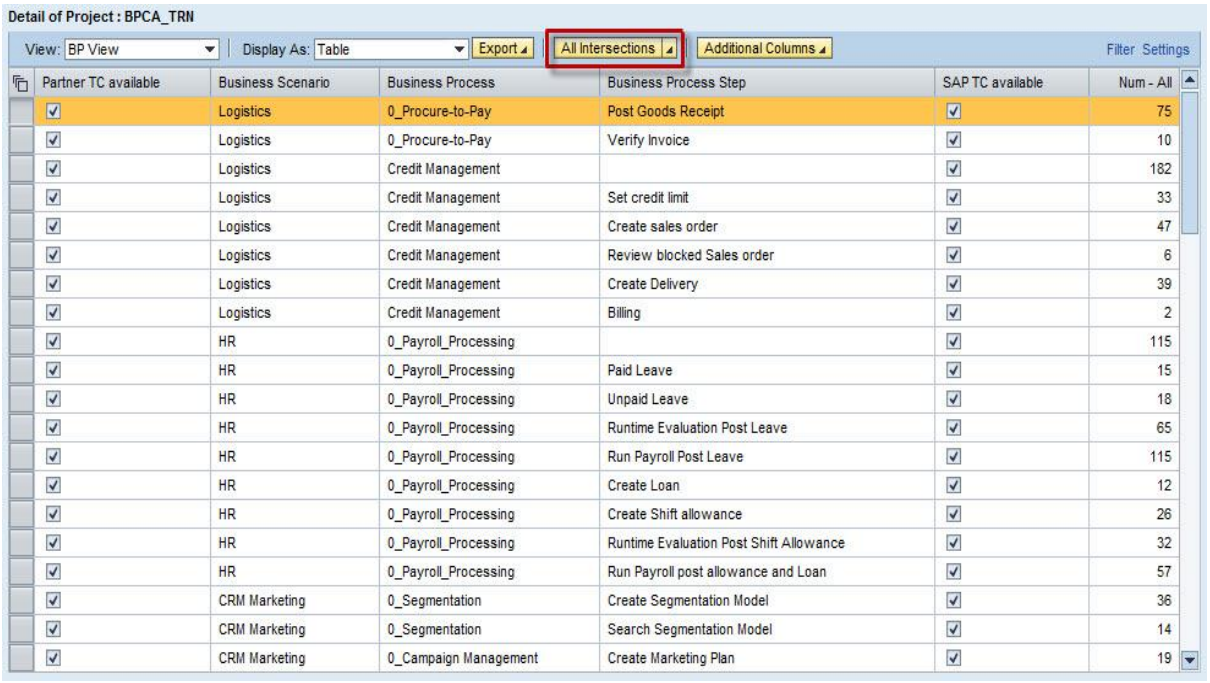
Step 4: Click the “Run” button.
Step 5: Refresh the table if to make sure the analysis is in finished status.



Note

Observe that out of the 49308 objects which are part of the SAP Support Package we are analyzing, 96% were unused by the processes documented in the given project.

Step 6: You will now see the nodes in the business process hierarchy within the impacted project which are affected by the support package that we are evaluating. You should see the results as shown below



Detail of Project : BPCA_TRN

View: BP View | Display As: Table | Export | All Intersections | Additional Columns | Filter Settings

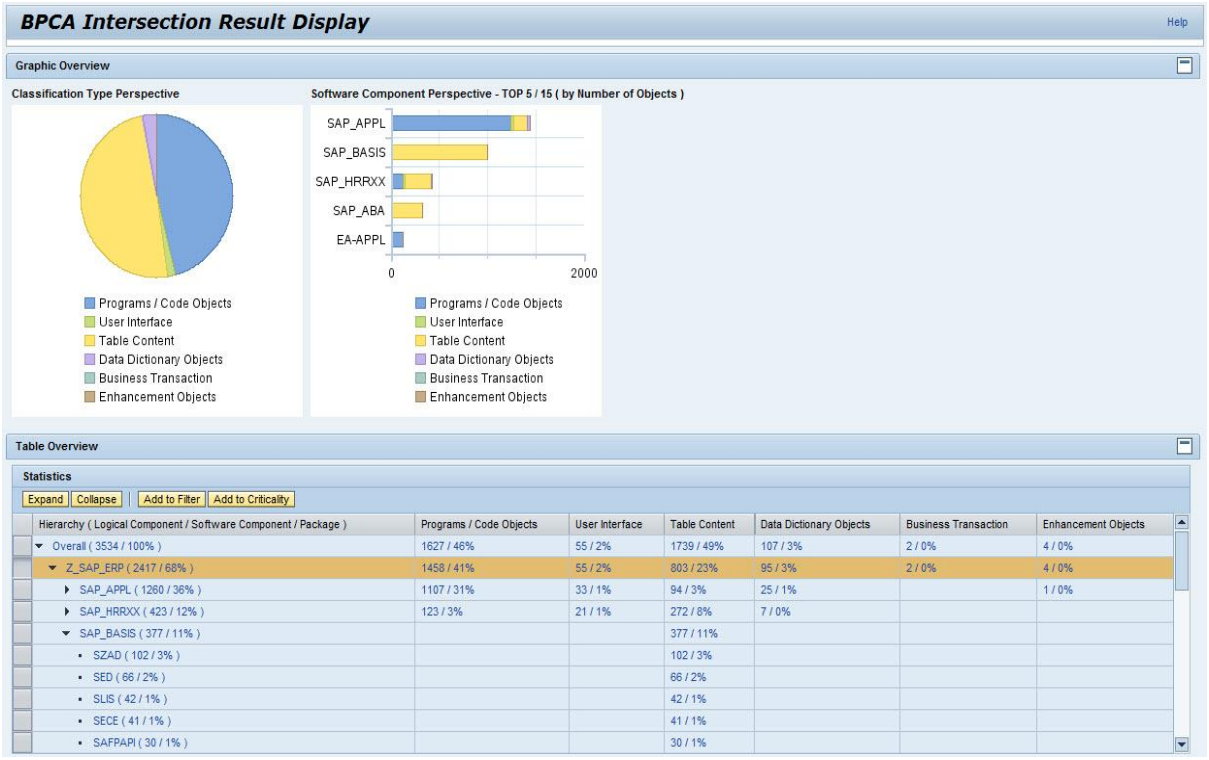
Partner TC available	Business Scenario	Business Process	Business Process Step	SAP TC available	Num - All
☑	Logistics	0_Procure-to-Pay	Post Goods Receipt	☑	75
☑	Logistics	0_Procure-to-Pay	Verify Invoice	☑	10
☑	Logistics	Credit Management		☑	182
☑	Logistics	Credit Management	Set credit limit	☑	33
☑	Logistics	Credit Management	Create sales order	☑	47
☑	Logistics	Credit Management	Review blocked Sales order	☑	6
☑	Logistics	Credit Management	Create Delivery	☑	39
☑	Logistics	Credit Management	Billing	☑	2
☑	HR	0_Payroll_Processing		☑	115
☑	HR	0_Payroll_Processing	Paid Leave	☑	15
☑	HR	0_Payroll_Processing	Unpaid Leave	☑	18
☑	HR	0_Payroll_Processing	Runtime Evaluation Post Leave	☑	65
☑	HR	0_Payroll_Processing	Run Payroll Post Leave	☑	115
☑	HR	0_Payroll_Processing	Create Loan	☑	12
☑	HR	0_Payroll_Processing	Create Shift allowance	☑	26
☑	HR	0_Payroll_Processing	Runtime Evaluation Post Shift Allowance	☑	32
☑	HR	0_Payroll_Processing	Run Payroll post allowance and Loan	☑	57
☑	CRM Marketing	0_Segmentation	Create Segmentation Model	☑	36
☑	CRM Marketing	0_Segmentation	Search Segmentation Model	☑	14
☑	CRM Marketing	0_Campaign Management	Create Marketing Plan	☑	19

Note

Almost all process steps in the project are impacted by this SAP Support Package

Step 7: Click on “All Intersections” to get more information on why the process steps are impacted.

Step 8: In the intersection display window is shown.



Note

1. *The top graphic shows the distribution of objects based on object type. In our example we have 46% code objects, 49% table content and 3% data dictionary objects.*
2. *Also observe that the tree view has hyperlinks which will let you see the objects for various combinations.*

Step 9: Expand the tree for statistics table to find the package “SBTI” under “SAP_BASIS” software component.

Step 10: Click on the package name

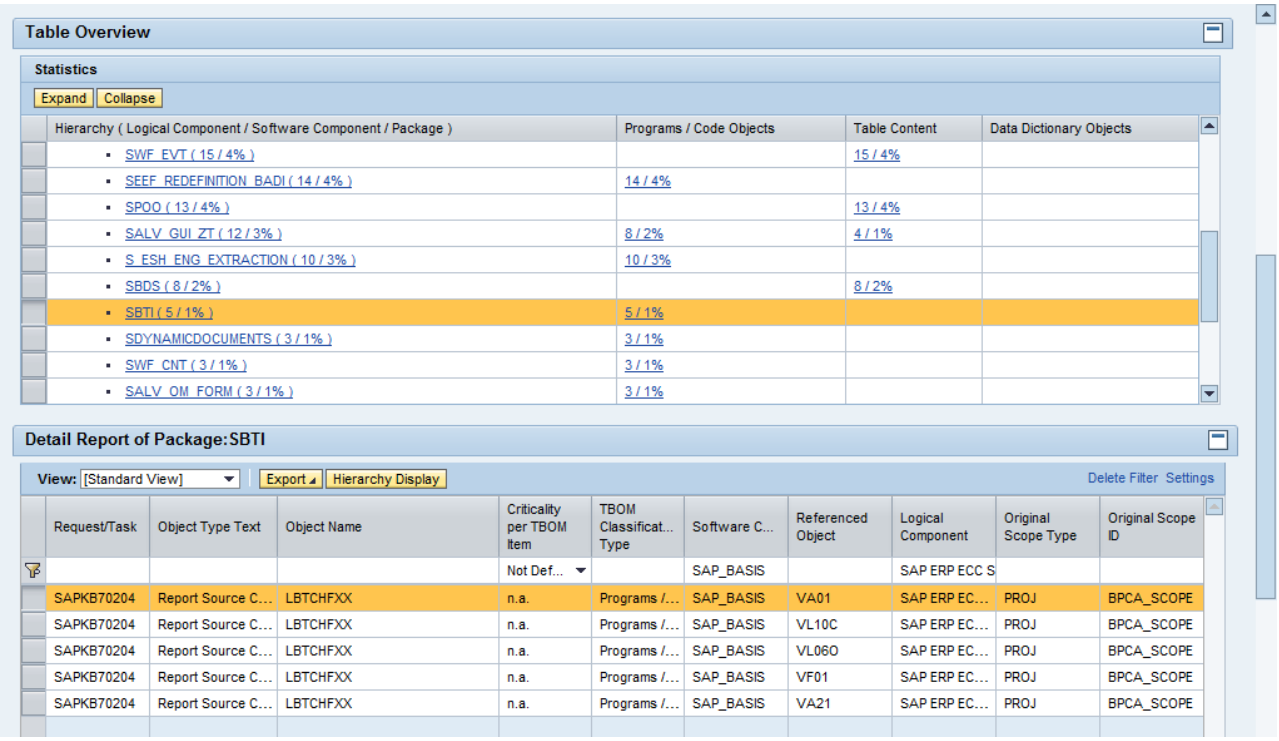


Table Overview

Statistics

Expand | Collapse

Hierarchy (Logical Component / Software Component / Package)	Programs / Code Objects	Table Content	Data Dictionary Objects
SWF_EVT (15 / 4%)		15 / 4%	
SEEF_REDEFINITION_BADI (14 / 4%)	14 / 4%		
SPOO (13 / 4%)		13 / 4%	
SALV_GUI_ZT (12 / 3%)	8 / 2%	4 / 1%	
S_ESH_ENG_EXTRACTION (10 / 3%)	10 / 3%		
SBDS (8 / 2%)		8 / 2%	
SBTI (5 / 1%)	5 / 1%		
SDYNAMICDOCUMENTS (3 / 1%)	3 / 1%		
SWF_CNT (3 / 1%)	3 / 1%		
SALV_OM_FORM (3 / 1%)	3 / 1%		

Detail Report of Package:SBTI

View: [Standard View] | Export | Hierarchy Display | Delete Filter Settings

Request/Task	Object Type Text	Object Name	Criticality per TBOM Item	TBOM Classificat... Type	Software C...	Referenced Object	Logical Component	Original Scope Type	Original Scope ID
			Not Def...		SAP_BASIS		SAP ERP ECC S		
SAPKB70204	Report Source C...	LBTCHFXX	n.a.	Programs /...	SAP_BASIS	VA01	SAP ERP EC...	PROJ	BPCA_SCOPE
SAPKB70204	Report Source C...	LBTCHFXX	n.a.	Programs /...	SAP_BASIS	VL10C	SAP ERP EC...	PROJ	BPCA_SCOPE
SAPKB70204	Report Source C...	LBTCHFXX	n.a.	Programs /...	SAP_BASIS	VL06O	SAP ERP EC...	PROJ	BPCA_SCOPE
SAPKB70204	Report Source C...	LBTCHFXX	n.a.	Programs /...	SAP_BASIS	VF01	SAP ERP EC...	PROJ	BPCA_SCOPE
SAPKB70204	Report Source C...	LBTCHFXX	n.a.	Programs /...	SAP_BASIS	VA21	SAP ERP EC...	PROJ	BPCA_SCOPE

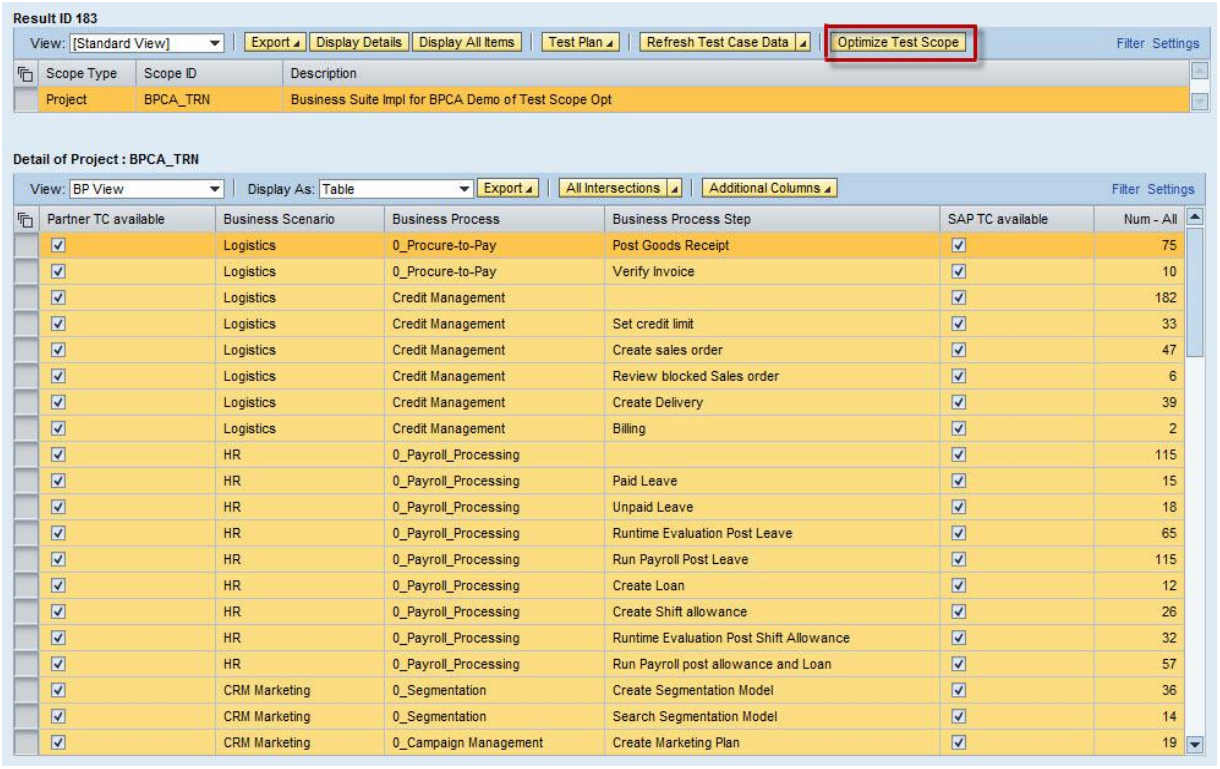
Step 11: In the detailed report under the tree view, you will see that the report source code "LBTCHFXX" has been used by 5 business transactions in the project BPCA_SCOPE.

Note

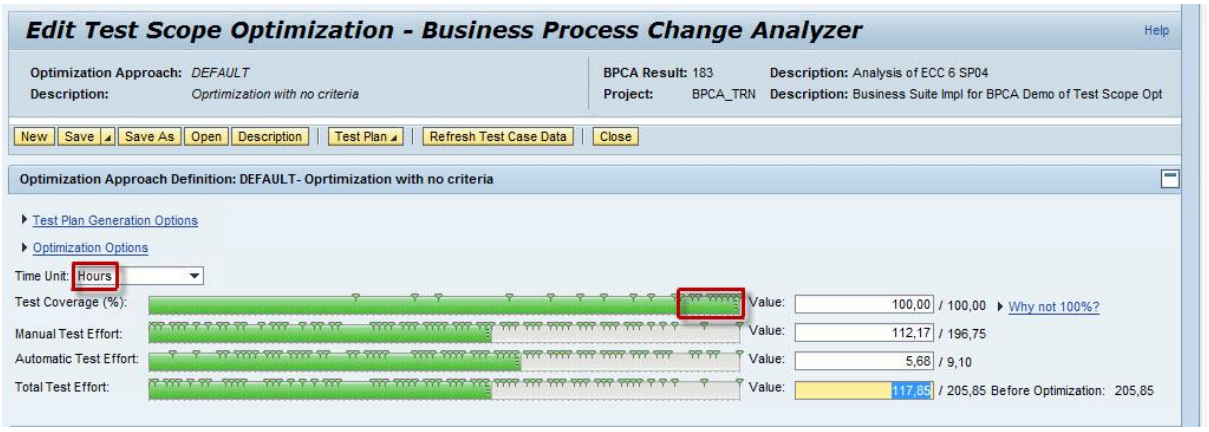
1. *The above intersection display also shows that if we were to consider the entire scope identified by BPCA, the report program LBTCHFXX will be tested 5 times when we test the 5 business transactions.*
2. *One of the parameters in the new test scope optimization functionality is to provide a reduced list of test cases, where such duplicate testing can be avoided.*

5.5 Test Scope Optimization

Step 1: Go to Test Management work center in Solution Manager using the Favorite link : Work Center: Testing Management -> Test Management
Step 2: Go to BP Change Analyzer View.
Step 3: Find the result id from Exercise 3 for analyzing a SAP Support Package.
Step 4: Click on the “Optimize Test Scope” button.



Step 5: The Test Scope Determination UI is shown.

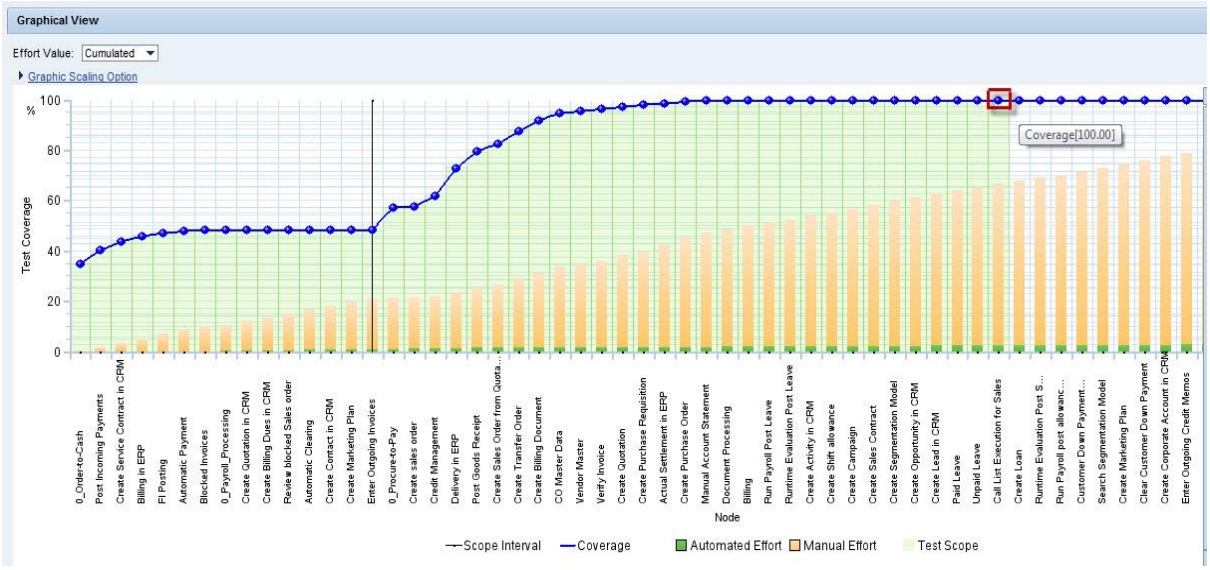


Note

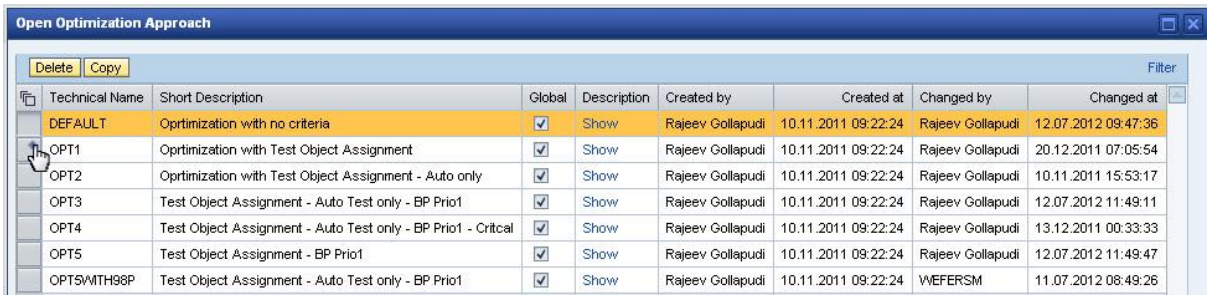
The initial optimization done by BPCA is based on the concept of restricting the testing of a process step only once and to give precedence to the process steps which have automated test cases assigned.

The top part of the window allows you to define the optimization criteria such as "test coverage", "test efforts" and the bottom part of the window shows the optimized test scope, both in graphical view as well as in tabular format.

Step 6: Drag the Test Coverage slide bar to reach 100%

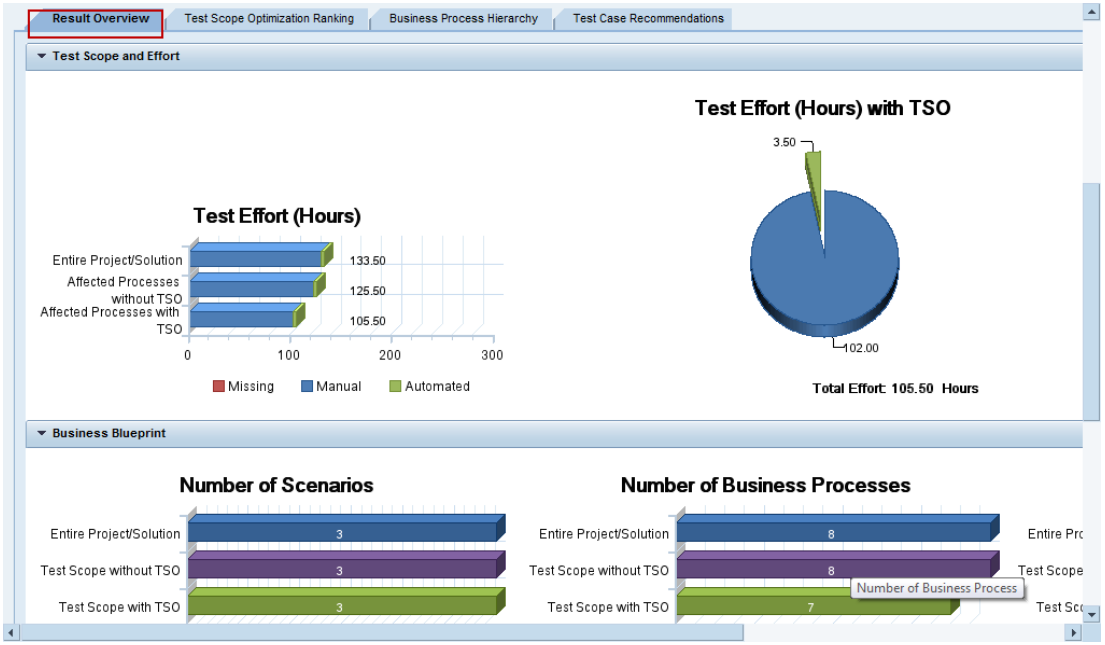


Step 7: The test scope optimization can be saved by clicking the "Open" Button.



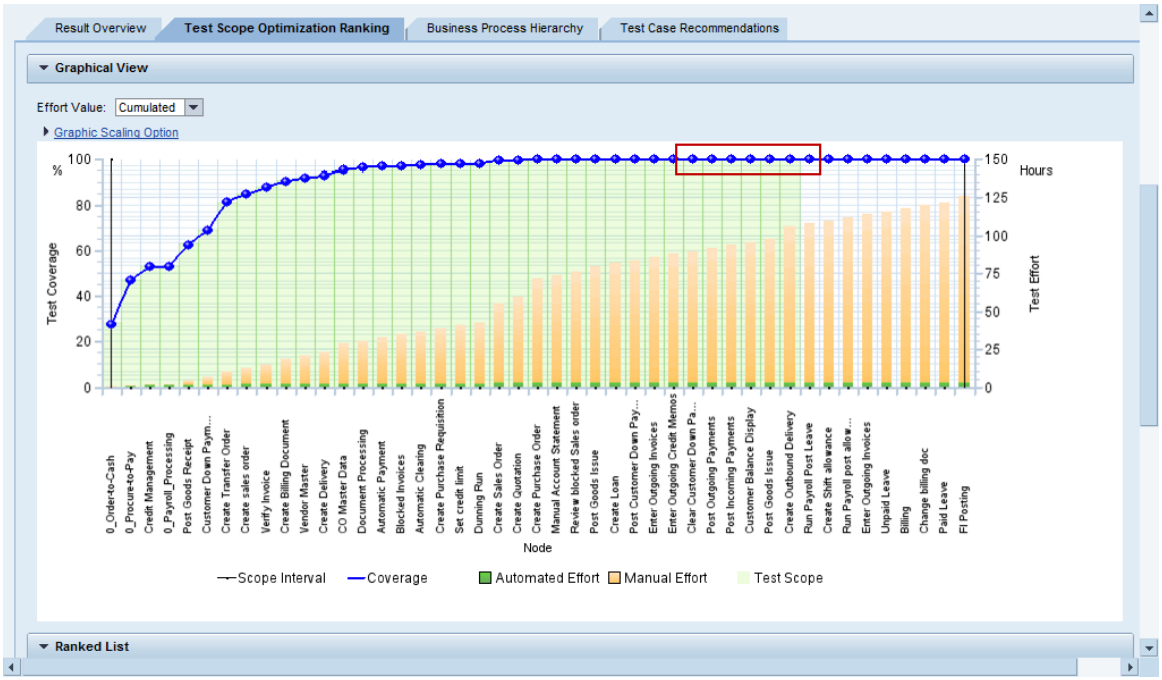
Technical Name	Short Description	Global	Description	Created by	Created at	Changed by	Changed at
DEFAULT	Oprtimization with no criteria	☑	Show	Rajeev Gollapudi	10.11.2011 09:22:24	Rajeev Gollapudi	12.07.2012 09:47:36
OPT1	Oprtimization with Test Object Assignment	☑	Show	Rajeev Gollapudi	10.11.2011 09:22:24	Rajeev Gollapudi	20.12.2011 07:05:54
OPT2	Oprtimization with Test Object Assignment - Auto only	☑	Show	Rajeev Gollapudi	10.11.2011 09:22:24	Rajeev Gollapudi	10.11.2011 15:53:17
OPT3	Test Object Assignment - Auto Test only - BP Prio1	☑	Show	Rajeev Gollapudi	10.11.2011 09:22:24	Rajeev Gollapudi	12.07.2012 11:49:11
OPT4	Test Object Assignment - Auto Test only - BP Prio1 - Critcal	☑	Show	Rajeev Gollapudi	10.11.2011 09:22:24	Rajeev Gollapudi	13.12.2011 00:33:33
OPT5	Test Object Assignment - BP Prio1	☑	Show	Rajeev Gollapudi	10.11.2011 09:22:24	Rajeev Gollapudi	12.07.2012 11:49:47
OPT5WITH98P	Test Object Assignment - Auto Test only - BP Prio1	☑	Show	Rajeev Gollapudi	10.11.2011 09:22:24	WEFERSM	11.07.2012 08:49:26

Step 8: The overview screen shows the summary of the analysis. Here the impact results after optimization are summarized. The business blueprint section shows the impact by Business Scenarios and Processes



Step 9: Go to Test Scope Optimization Ranking tab

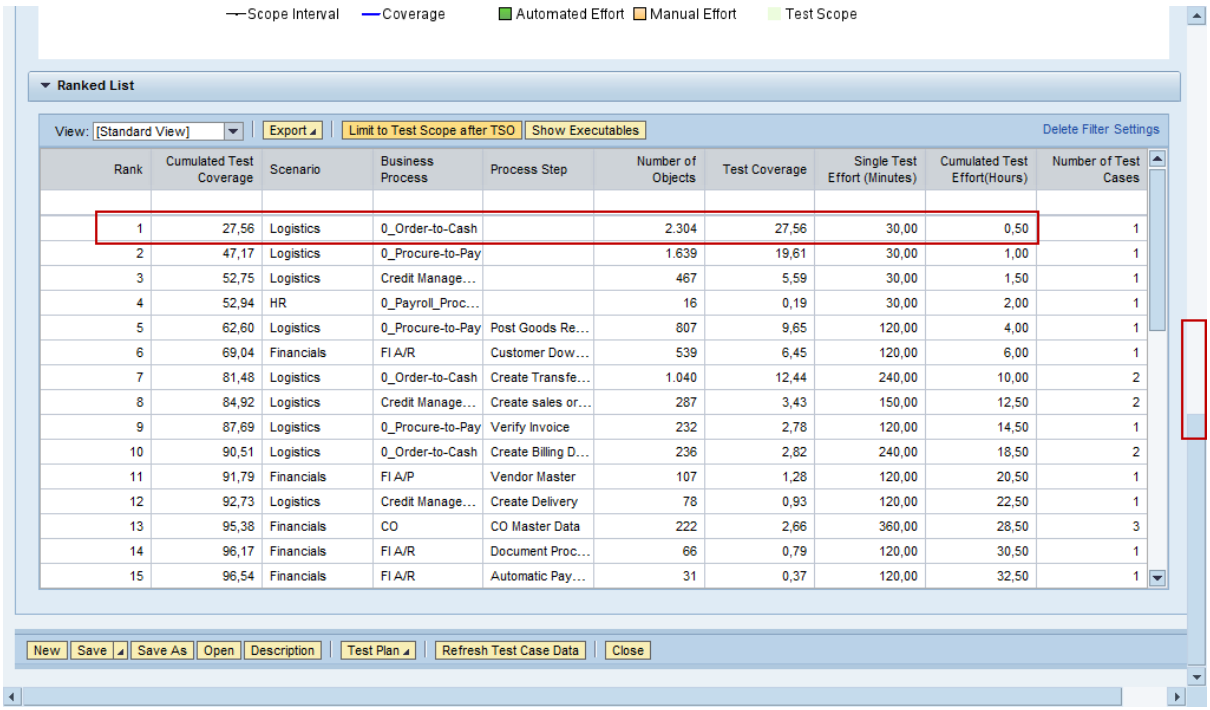
Step 10: Observe that the graph shows the ranking of impacted process steps on the x-asis. The y-axis on the left side shows the object coverage % - plotted as a blue line graph. The y-axix on the right side shows the test effort – plotted as bar chart for each node. The effort and the test object coverage numbers are cumulated values. See that there is a long tail for the object coverage . The green shaded area shows the current test scope (100% coverage). Scroll down to see the revised test scope after considering the new optimization criteria of business process priority attribute.



Step 11: Observe that the graph shows the ranking of impacted process steps on the x-asis. The y-axis on the left side shows the object coverage % - plotted as a blue line graph. The y-axix on the right side shows the test effort – plotted as bar chart for each node. The effort and the test object coverage numbers are cumulated values. See that there is a long tail for the object coverage . The green shaded area shows the current test scope (100% coverage). Scroll down to see the revised test scope after considering the new optimization criteria of business process priority attribute.

Step 12: If you scroll down you will the tabular view of the tanking list of impacted processes

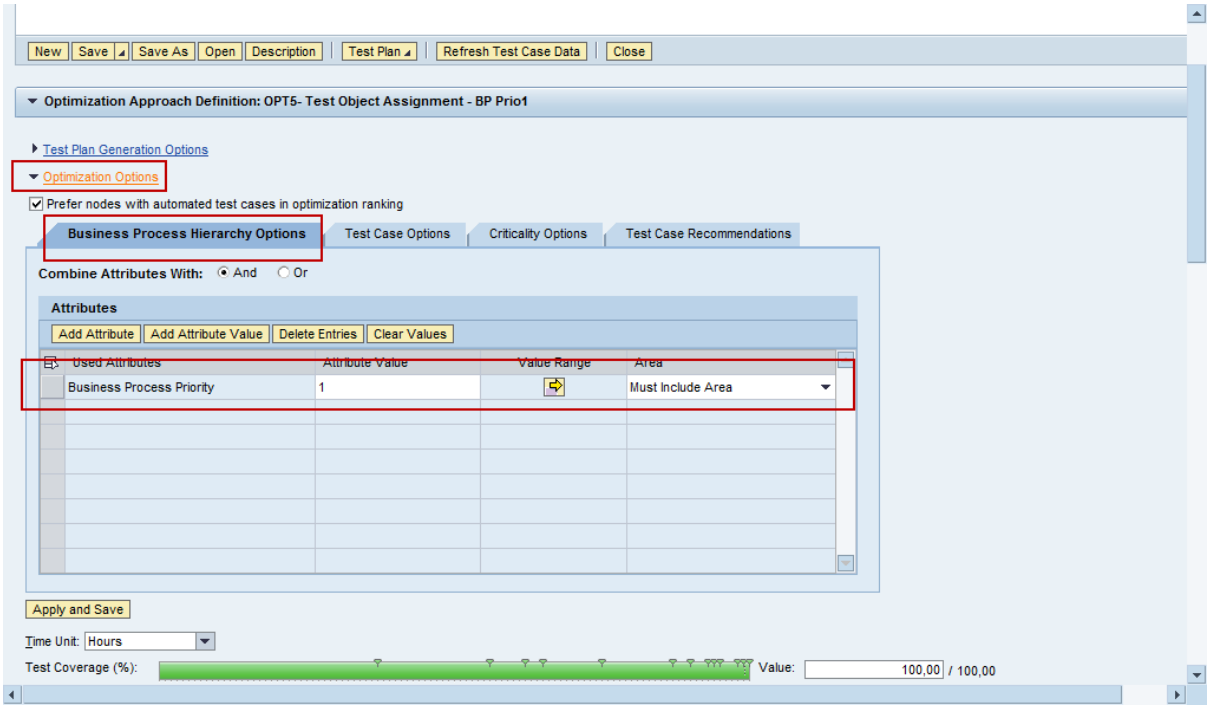
Step 13: “Order to cash” process is of Rank 1 as it has the most objects impacted (2304) and also has low test effort



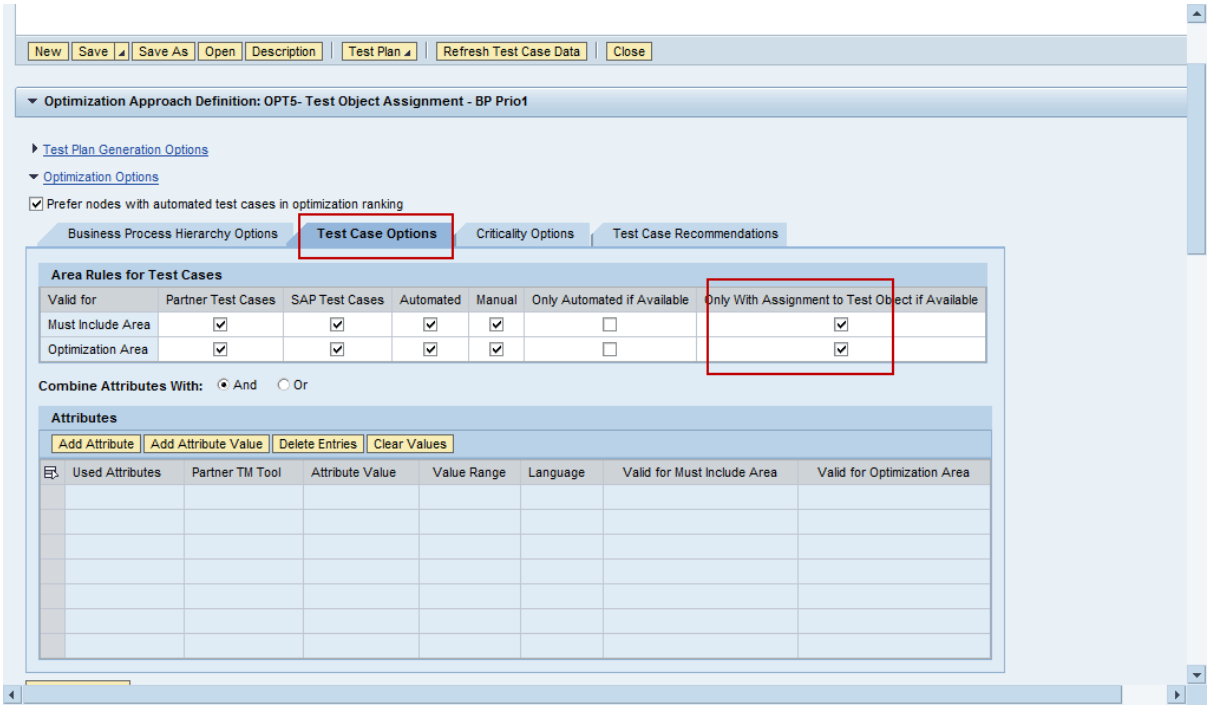
Rank	Cumulated Test Coverage	Scenario	Business Process	Process Step	Number of Objects	Test Coverage	Single Test Effort (Minutes)	Cumulated Test Effort(Hours)	Number of Test Cases
1	27,56	Logistics	0_Order-to-Cash		2.304	27,56	30,00	0,50	1
2	47,17	Logistics	0_Procure-to-Pay		1.639	19,61	30,00	1,00	1
3	52,75	Logistics	Credit Manage…		467	5,59	30,00	1,50	1
4	52,94	HR	0_Payroll_Proc…		16	0,19	30,00	2,00	1
5	62,60	Logistics	0_Procure-to-Pay	Post Goods Re…	807	9,65	120,00	4,00	1
6	69,04	Financials	FI A/R	Customer Dow…	539	6,45	120,00	6,00	1
7	81,48	Logistics	0_Order-to-Cash	Create Transfe…	1.040	12,44	240,00	10,00	2
8	84,92	Logistics	Credit Manage…	Create sales or…	287	3,43	150,00	12,50	2
9	87,69	Logistics	0_Procure-to-Pay	Verify Invoice	232	2,78	120,00	14,50	1
10	90,51	Logistics	0_Order-to-Cash	Create Billing D…	236	2,82	240,00	18,50	2
11	91,79	Financials	FI A/P	Vendor Master	107	1,28	120,00	20,50	1
12	92,73	Logistics	Credit Manage…	Create Delivery	78	0,93	120,00	22,50	1
13	95,38	Financials	CO	CO Master Data	222	2,66	360,00	28,50	3
14	96,17	Financials	FI A/R	Document Proc…	66	0,79	120,00	30,50	1
15	96,54	Financials	FI A/R	Automatic Pay…	31	0,37	120,00	32,50	1

Step 14: Open the optimization options view by clicking on the link

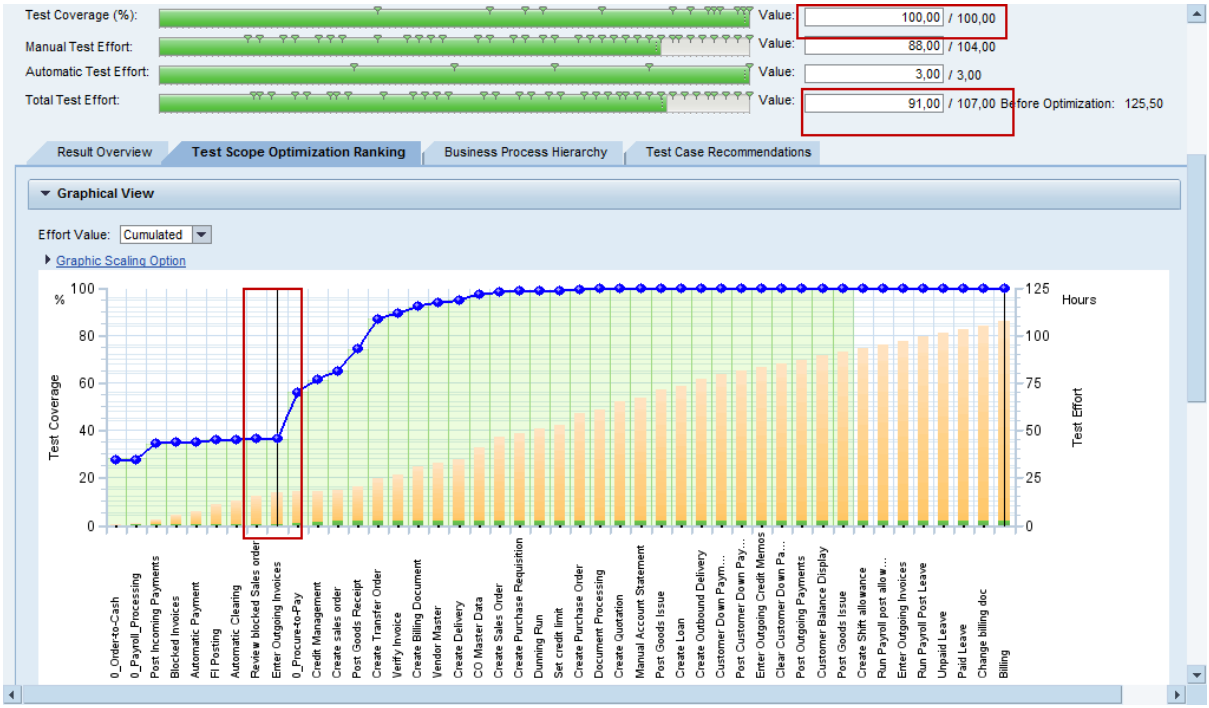
Step 15: In the business process hierarchy options you can see that this approach is using the process attribute “Business Process Priority” value to force certain business processes in to the test scope



Step 16: In the test case options, this approach is about using test case to test object assignment to precisely pick only those test cases which are testing the impacted transactions



Step 17: Observe that with these new optimization approach, certain processes have come up in priority and are always included in the test scope (defined the “Black line” in the graph”

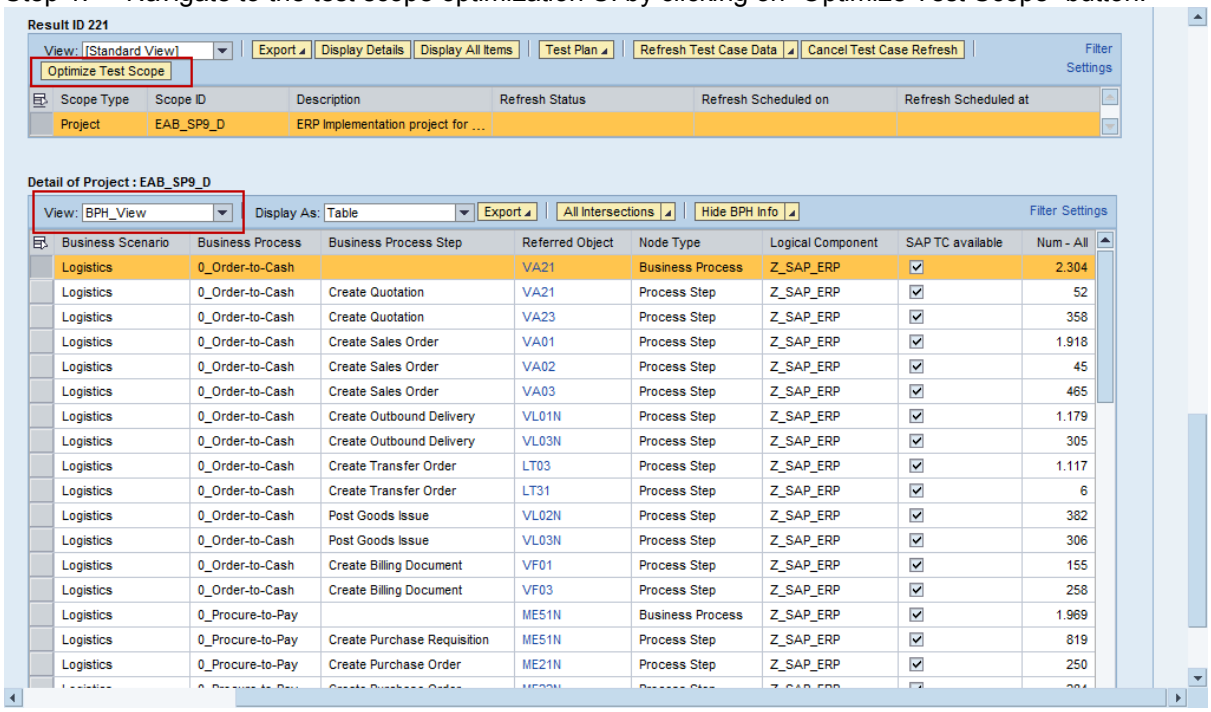

Test Coverage (%):
Value: 100,00 / 100,00
Manual Test Effort:
Value: 88,00 / 104,00
Automatic Test Effort:
Value: 3,00 / 3,00
Total Test Effort:
Value: 91,00 / 107,00 Before Optimization: 125,50
Result Overview
Test Scope Optimization Ranking
Business Process Hierarchy
Test Case Recommendations
Graphical View
Effort Value: Cumulated
Graphic Scaling Option
%
Test Coverage
Hours
Test Effort
0_Order-to-Cash
0_Payroll_Processing
Post Incoming Payments
Blocked Invoices
Automatic Payment
FI Posting
Automatic Clearing
Review blocked Sales order
Enter Outgoing Invoices
0_Procure-to-Pay
Credit Management
Create sales order
Post Goods Receipt
Create Transfer Order
Verify Invoice
Create Billing Document
Vendor Master
Create Delivery
CO Master Data
Create Sales Order
Create Purchase Requisition
Dunning Run
Set credit limit
Create Purchase Order
Document Processing
Create Quotation
Manual Account Statement
Post Goods Issue
Create Loan
Create Outbound Delivery
Customer Down Paym...
Post Customer Down Pay...
Enter Outgoing Credit Memos
Clear Customer Down Pa...
Post Outgoing Payments
Customer Balance Display
Post Goods Issue
Create Shift allowance
Run Payroll post allow...
Enter Outgoing Invoices
Run Payroll Post Leave
Unpaid Leave
Paid Leave
Change billing doc
Billing

.

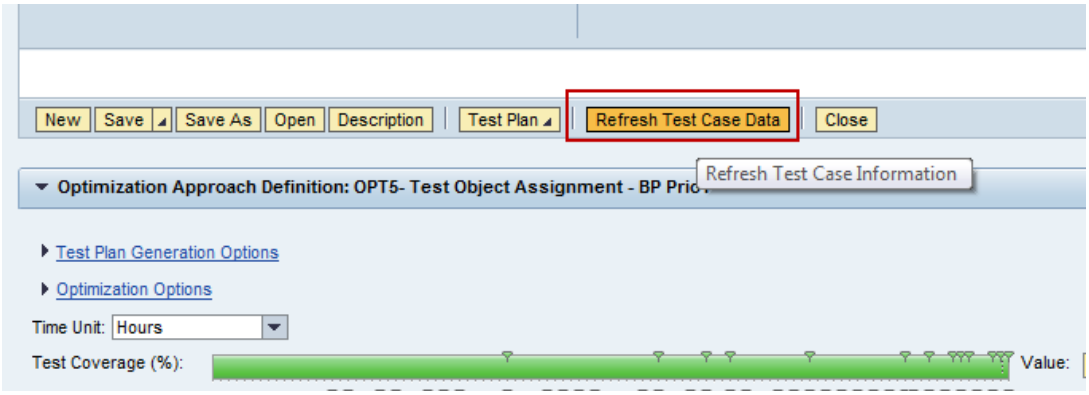
5.5.1 Test Case Recommendation from BPCA

With SAP Solution Manager 7.1 SP10, BPCA makes “Test Case Recommendations” as part of the Test Scope Optimization functionality. The idea here is that based on the impacted business processes, BPCA will analyze the business processes covering the top x% of changed objects and makes recommendations to either invest in creating manual test cases (if no test cases are available) or invest in creating new automated test cases(where only manual test cases are available). The below steps show how to find these recommendations in BPCA Test Scope Optimization.

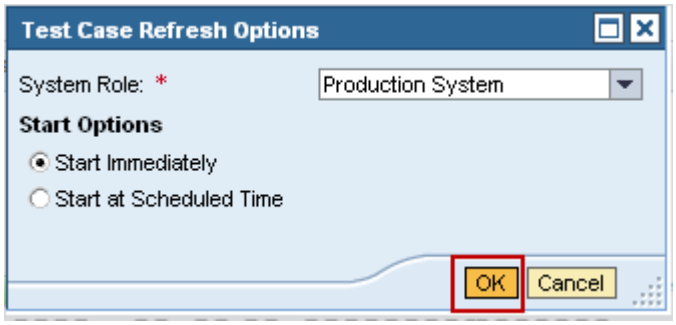
Step 1: Navigate to the test scope optimization UI by clicking on “Optimize Test Scope” button.



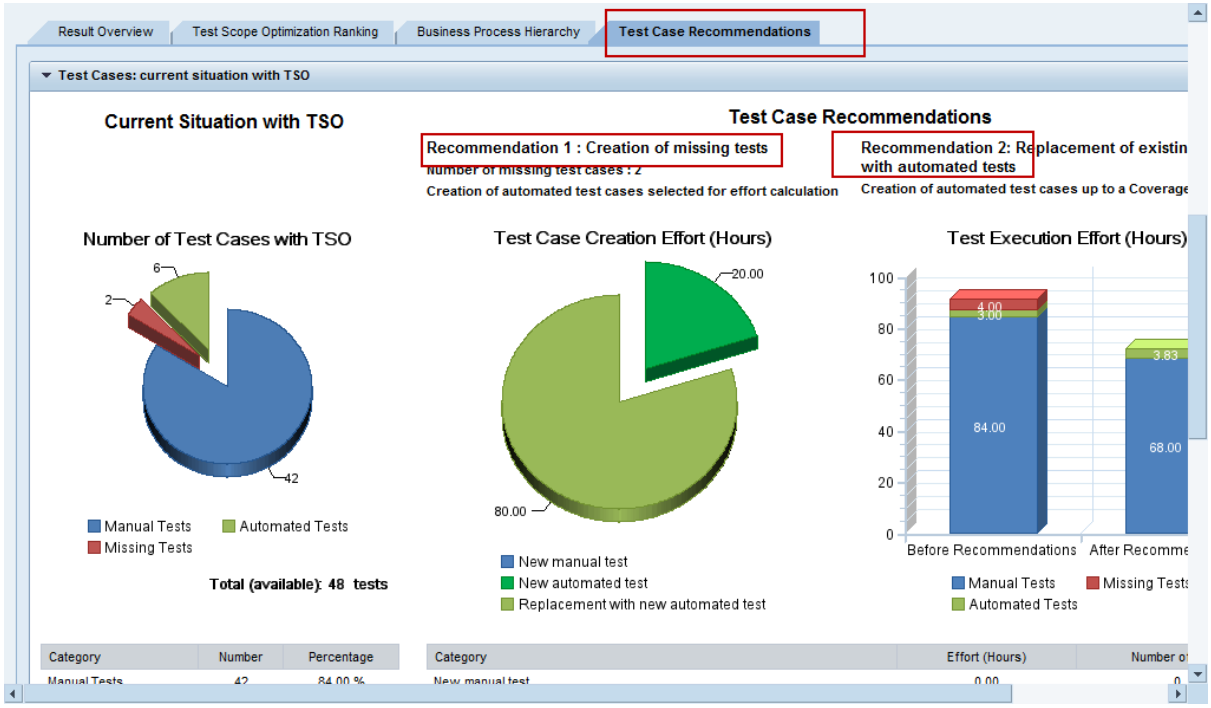
Step 2: Click “Refresh Test Case Data”. This will get latest test case information from the project.



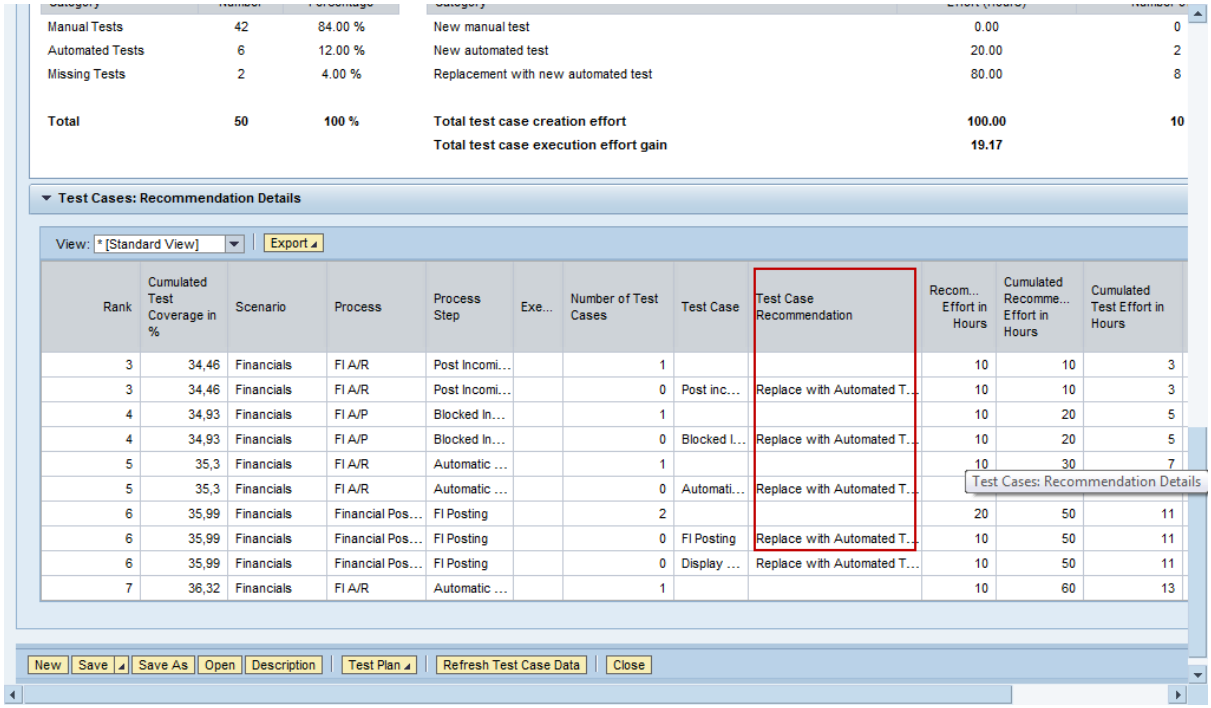
Step 3: In the popup click “ok”.



Step 4: Go to the “Test Case Recommendations” tab at the bottom of the screen.
Step 5: Recommendation 1 is about creating missing tests.
Step 6: Recommendation 2 is about replacing manual tests for automates tests.



Step 7: Table below shows the individual process steps and the corresponding recommendations.



Manual Tests	42	84.00 %	New manual test	0.00	0
Automated Tests	6	12.00 %	New automated test	20.00	2
Missing Tests	2	4.00 %	Replacement with new automated test	80.00	8
Total	**50**	**100 %**	**Total test case creation effort**	**100.00**	**10**
			Total test case execution effort gain	**19.17**	

Test Cases: Recommendation Details

View: * [Standard View] | Export

Rank	Cumulated Test Coverage in %	Scenario	Process	Process Step	Exe...	Number of Test Cases	Test Case	Test Case Recommendation	Recom... Effort in Hours	Cumulated Recomme... Effort in Hours	Cumulated Test Effort in Hours
3	34,46	Financials	FI A/R	Post Incomi...		1			10	10	3
3	34,46	Financials	FI A/R	Post Incomi...		0	Post inc...	Replace with Automated T...	10	10	3
4	34,93	Financials	FI A/P	Blocked In...		1			10	20	5
4	34,93	Financials	FI A/P	Blocked In...		0	Blocked I...	Replace with Automated T...	10	20	5
5	35,3	Financials	FI A/R	Automatic ...		1			10	30	7
5	35,3	Financials	FI A/R	Automatic ...		0	Automati...	Replace with Automated T...			
6	35,99	Financials	Financial Pos...	FI Posting		2			20	50	11
6	35,99	Financials	Financial Pos...	FI Posting		0	FI Posting	Replace with Automated T...	10	50	11
6	35,99	Financials	Financial Pos...	FI Posting		0	Display ...	Replace with Automated T...	10	50	11
7	36,32	Financials	FI A/R	Automatic ...		1			10	60	13

Test Cases: Recommendation Details

New | Save | Save As | Open | Description | Test Plan | Refresh Test Case Data | Close

5.6 Saving and using Test Scope Optimization Approaches

In this section you will understand how to save the test scope optimization criteria so that you can use them in future test scope optimization runs.

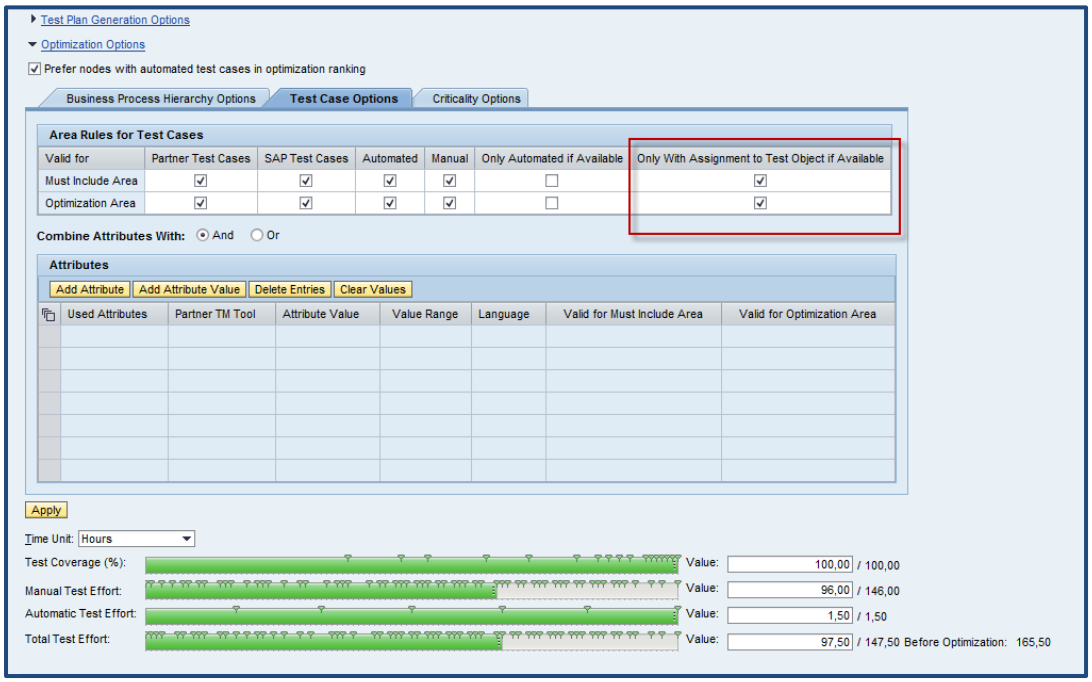
5.6.1 Creating an Test Scope Optimization Approach

You can save all of the settings that you make to optimize the test scope as an optimization approach. You can reuse this optimization approach or share it with other users. The optimization approach contains the following settings:

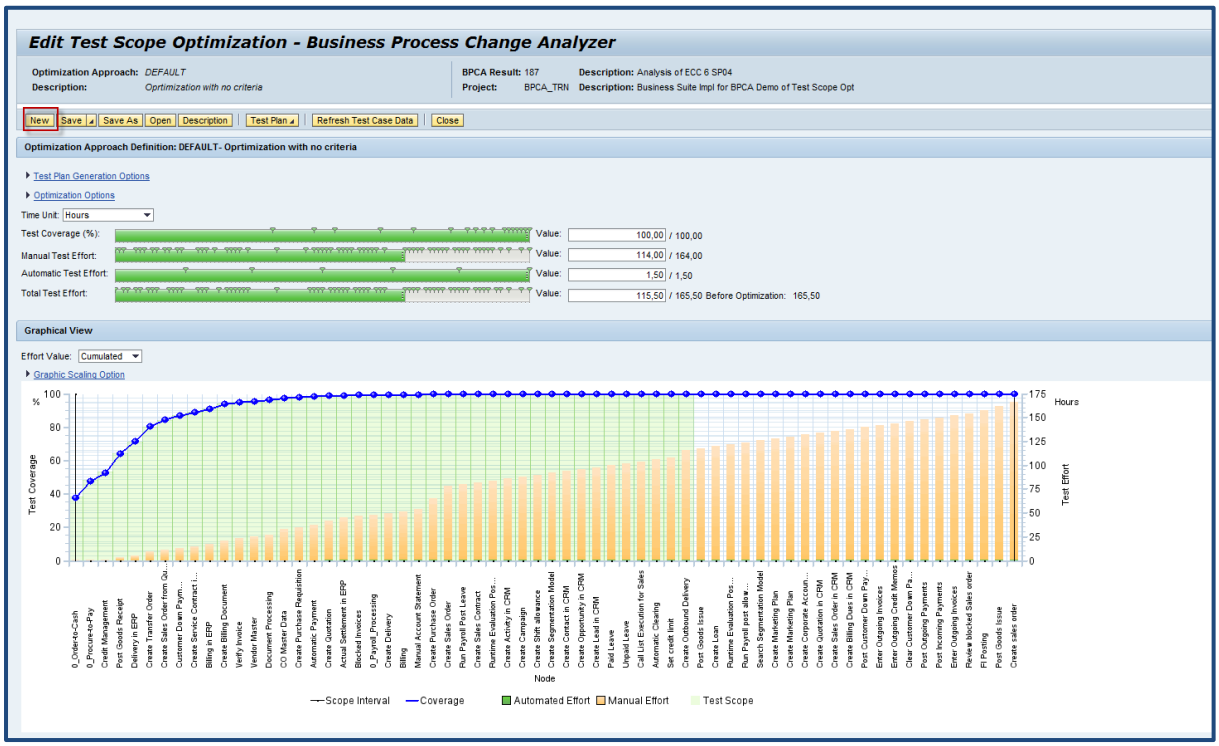
- Options for test plan generation
- Optimization options
- Required test coverage
- Test scope selection using the graphical view
- Manual inclusion or exclusion of nodes

Step 1: Go to Test Scope Optimization screen for a given analysis

Step 2: Set all optimization criteria which you want to save as an approach under “Optimization Options”



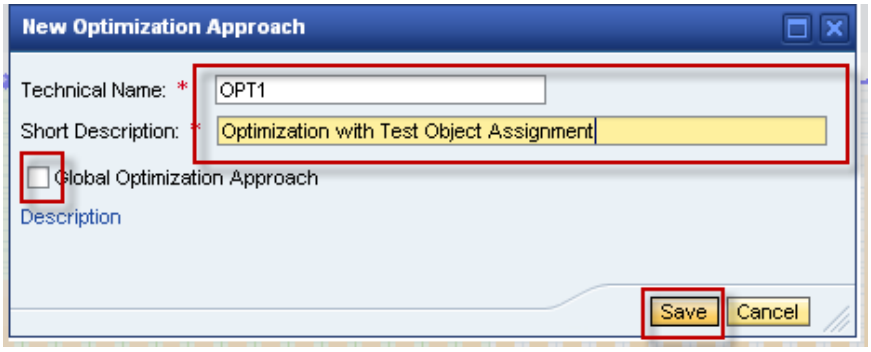
Step 3: Once you have set all criteria which you would like to persist. Choose New



Step 4: The New Optimization Approach dialogue is displayed

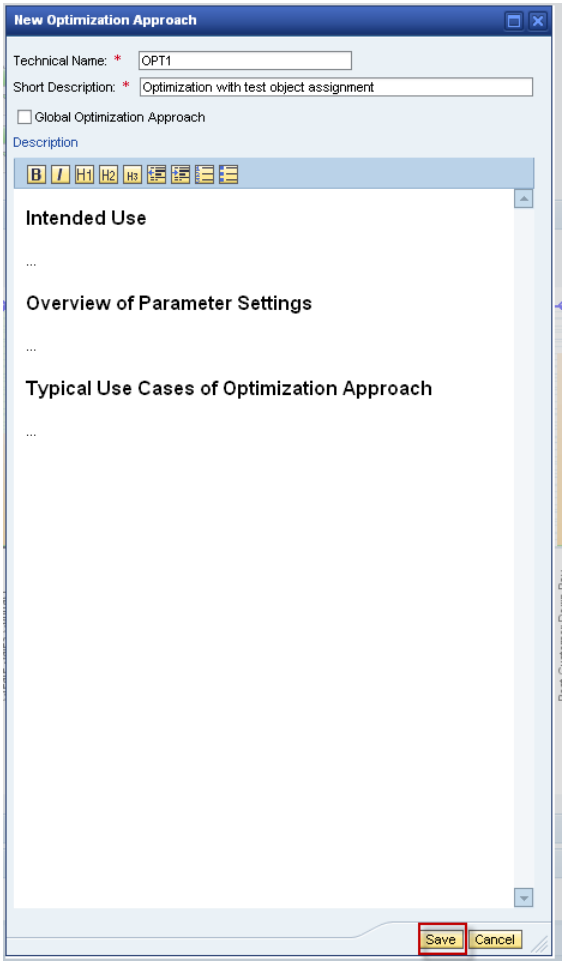
Step 5: Enter a technical name and a short description for the new optimization approach.

Step 6: If you select the Global Optimization Approach checkbox, other users will be able to access this optimization approach.



Step 7: Optional: Choose Description.

Step 8: An editor is opened. Here you can describe the optimization approach in more detail.

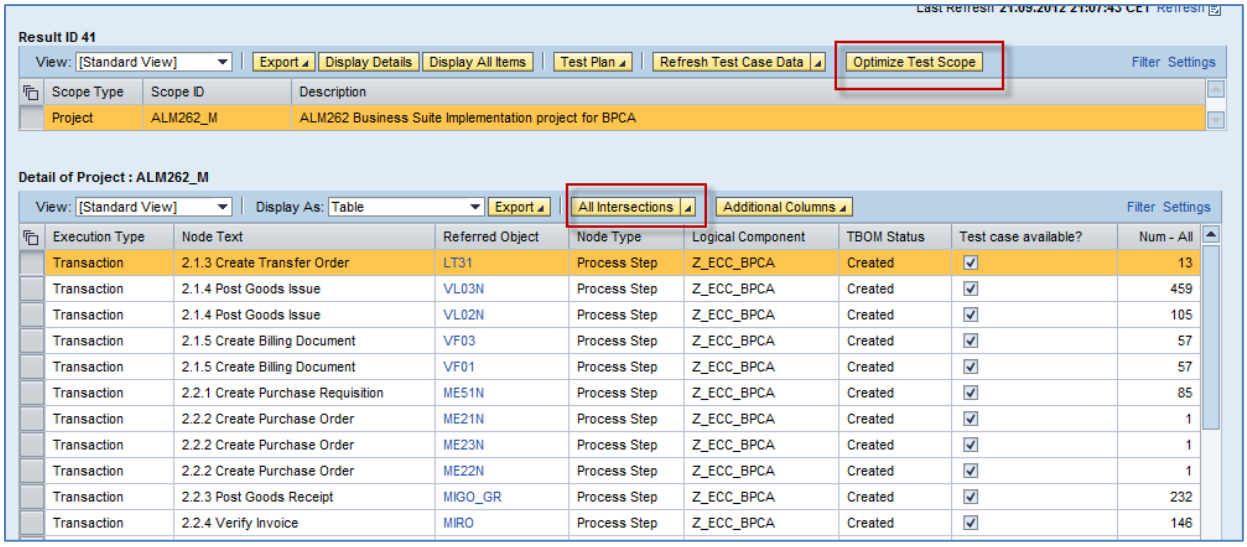


Step 9: Save

5.6.2 Using saved Test Scope Optimization Approaches

In the below steps you will see how to use existing (saved) approaches in performing a test scope optimization of a SAP Support Package implementation

Step 1: Go to Test Management work center in Solution Manager using the Favorite link : Work Center: Testing Management -> Test Management
Step 2: Go to BP Change Analyzer View.
Step 3: Find the result id from Exercise 4 for analyzing a SAP Support Package.
Step 4: Click on the “Optimize test scope” button.

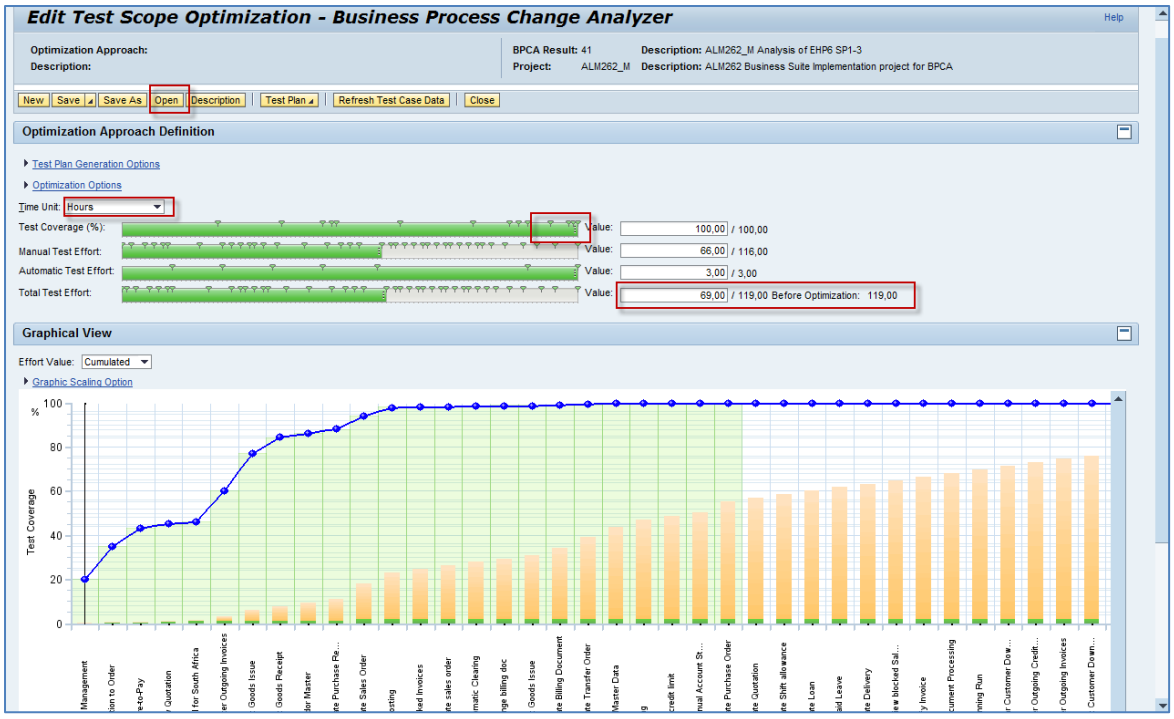


Step 5: The Test Scope Determination UI is shown.

Note

- *The initial optimization done by BPCA is based on the concept of restricting the testing of a process step only once and to give precedence to the process steps which have automated test cases assigned.*
- *The top part of the window allows you to define the optimization criteria such as "test coverage", "test efforts" and the bottom part of the window shows the optimized test scope, both in graphical view as well as in tabular format.*

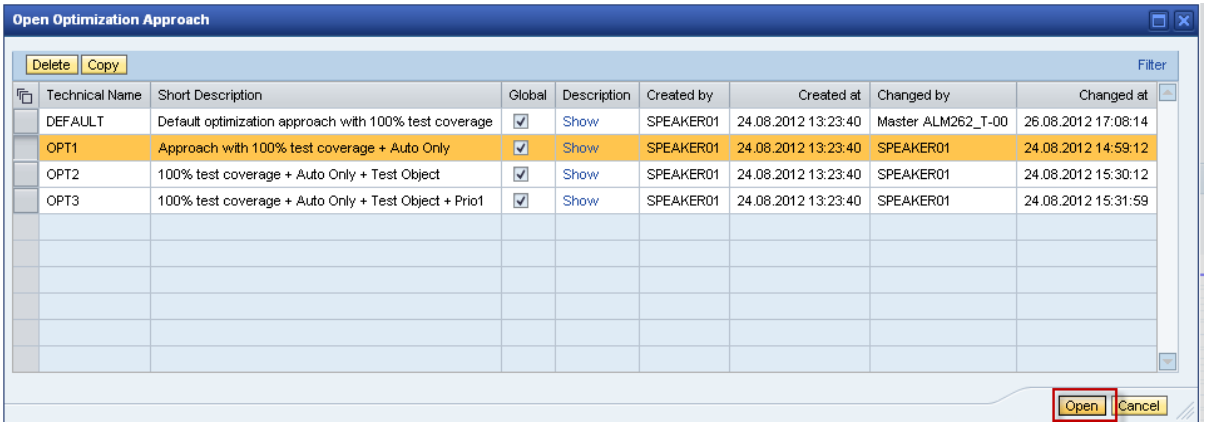
Step 6: Change the Time unit to "Hours"
Step 7: Drag the Test Coverage slide bar to reach 100%



Note

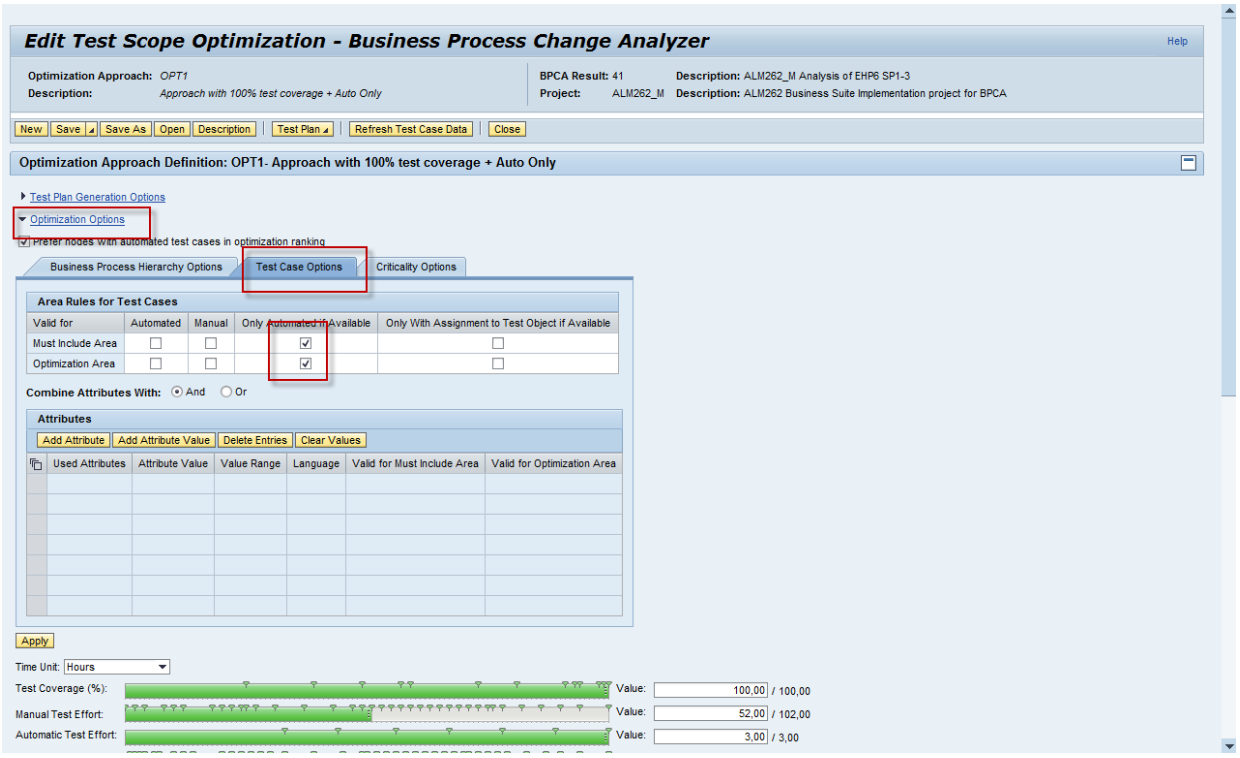
The total test effort is now only 69 hours when compared to 119 hours if you did not do any optimization

Step 8: Click “Open” button to see available test scope optimization approaches



Step 9: Each approach has a pre-defined optimization criteria

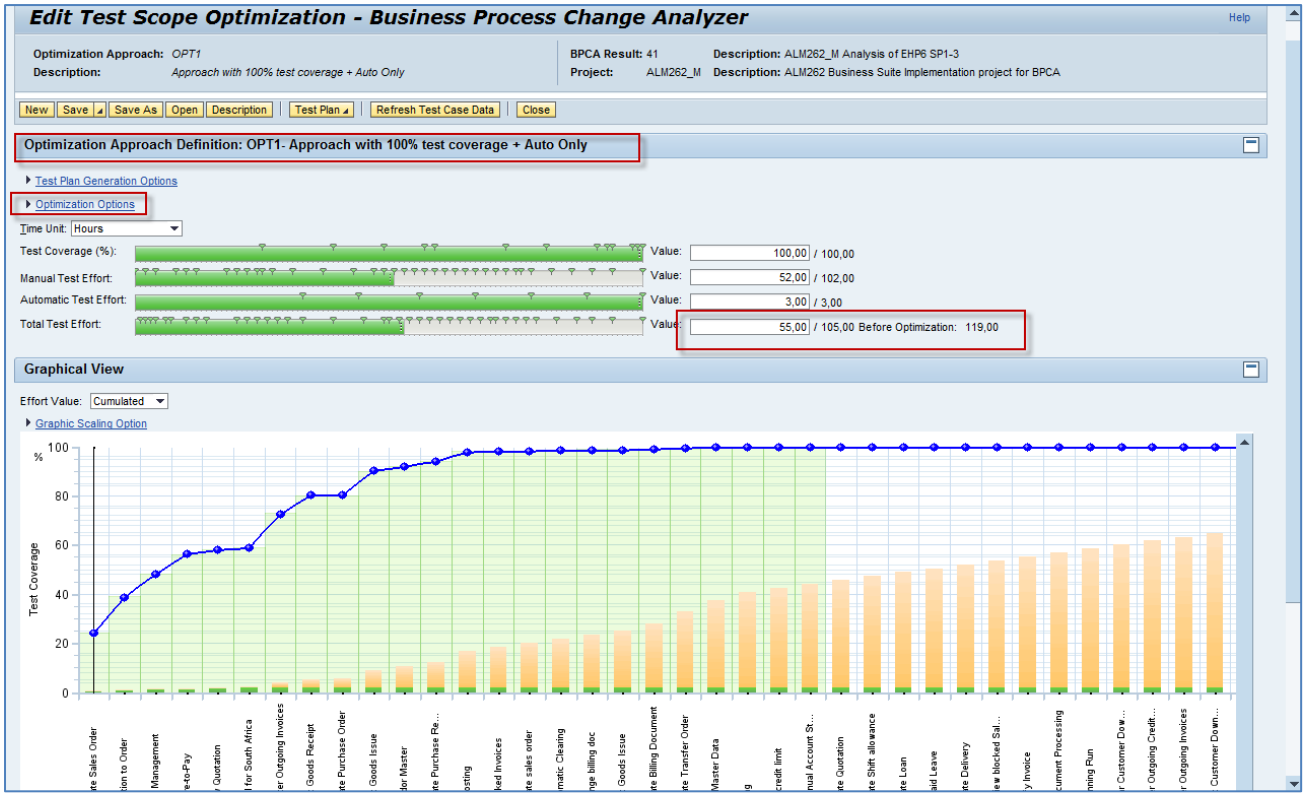
Step 10: Select the approach “OPT1”. OPT1 will select automated test cases only and exclude manual test cases for nodes where both automated and manual test cases are available



OPT1

- Consider only those test cases where impacted “Transactions” are assigned as “Test objects”
- 100% change coverage
- No attributes used for process priorities
- Higher ranking for process steps with automated tests

Step 11: Observe that the overall test effort is now only **55 hours**

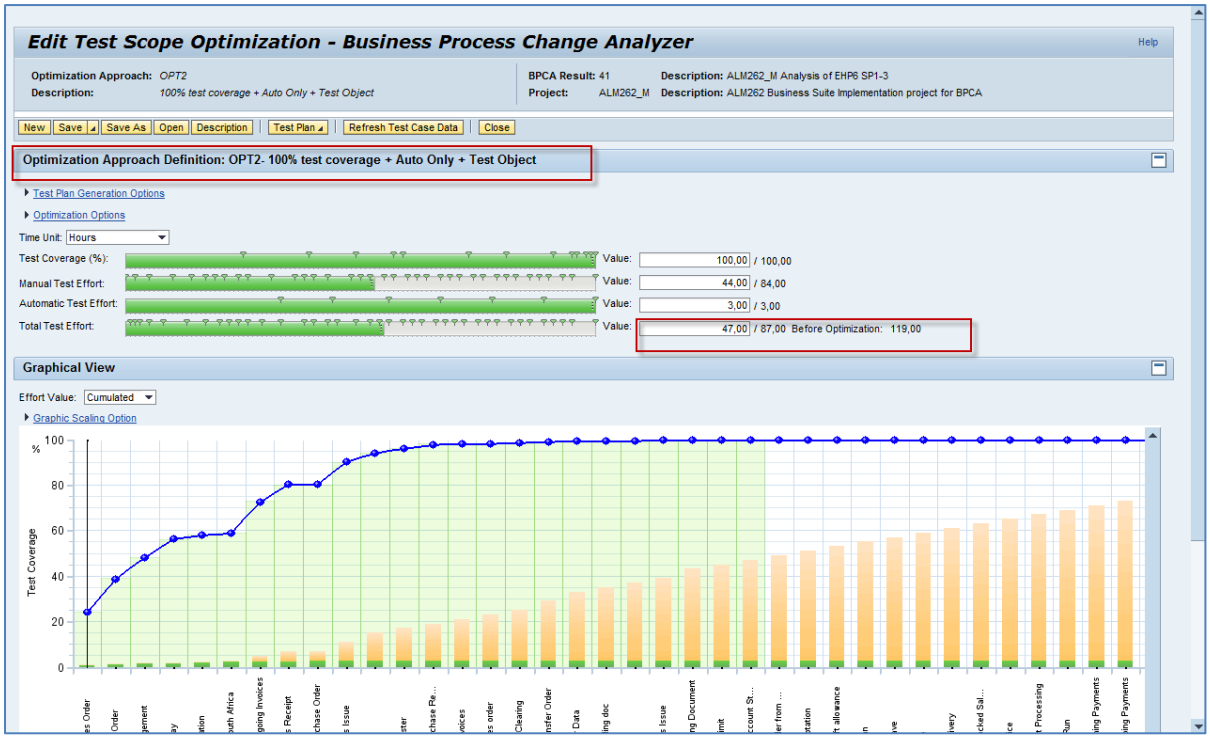


Step 12: Open the optimization approach screen by clicking “Open”

Step 13: Select the approach “OPT2”. This approach also considers the “test object” assignment. This means if a particular transaction is impacted, BPCA will pick only those test cases where this transaction is added as a test object

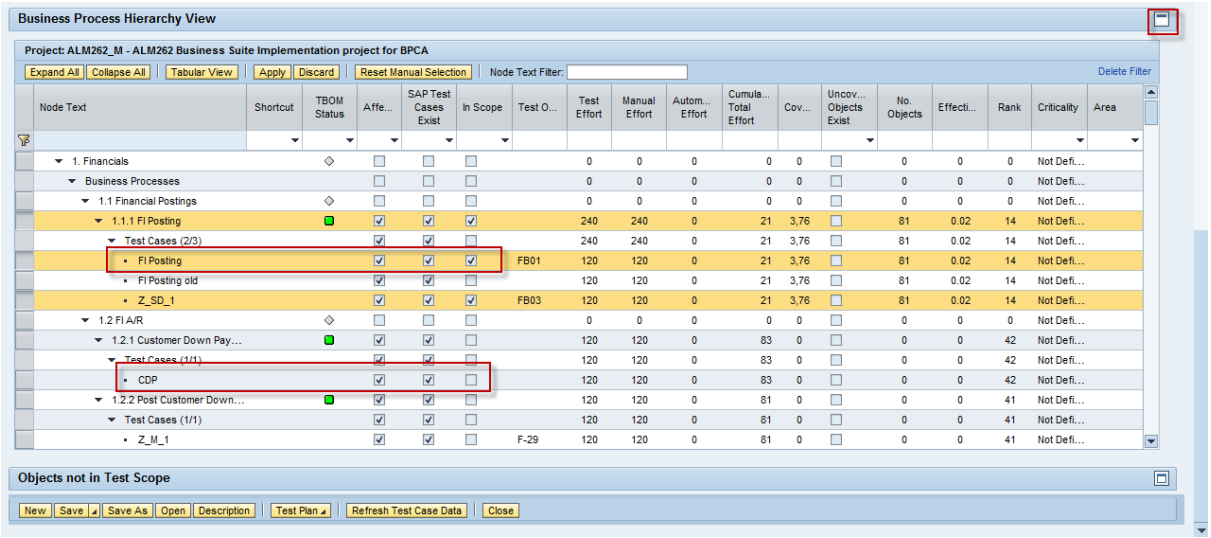
OPT3

- Consider only those test cases where impacted “Transactions” are assigned as “Test objects”
- Consider only automated tests when both manual and automated test cases are available
- Always include processes with „Business Process Priority“ attribute value as “1“
- Higher ranking for process steps with automated tests



Step 14: Observe that the over all test effort is now only **44 hours**

Step 15: Click on the expand icon to see the business process hierarchy view. Observe that in the hierarchy the process steps are selected based on the optimization we have done so far.

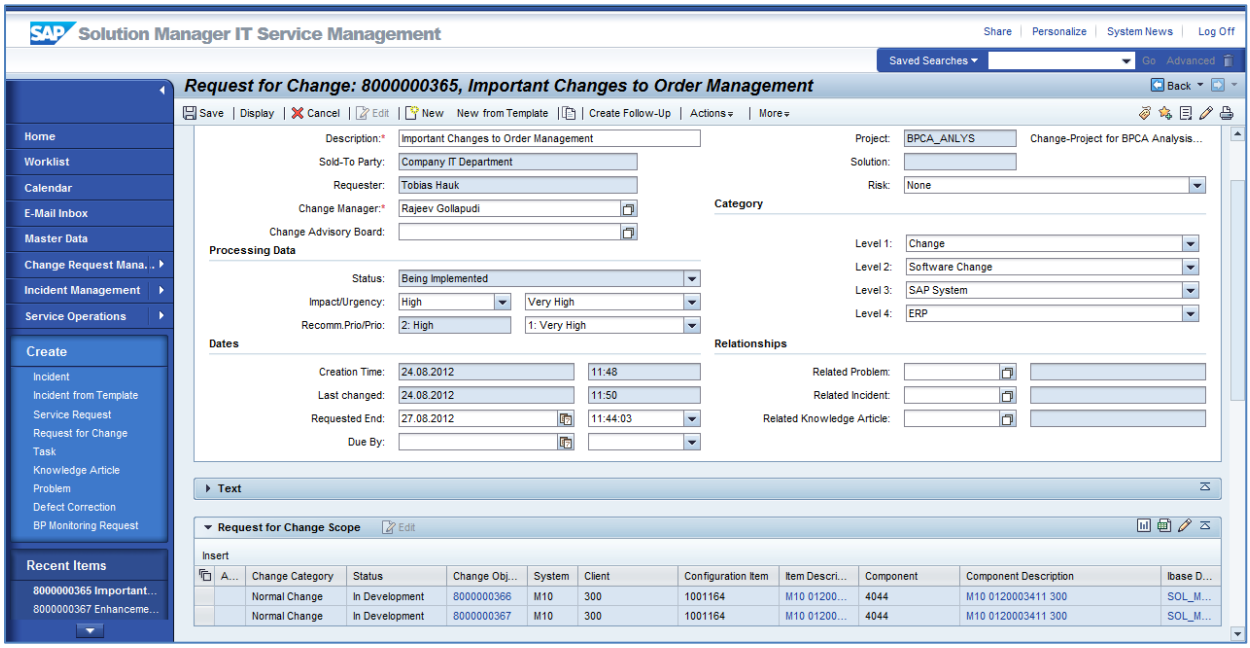


If you don't see the node text, please expand the column in the table.

Observe that the *FI Posting* step is included in the scope and the *Customer Down Payment* step is not included in the final test scope

5.7 Impact analysis for a change document

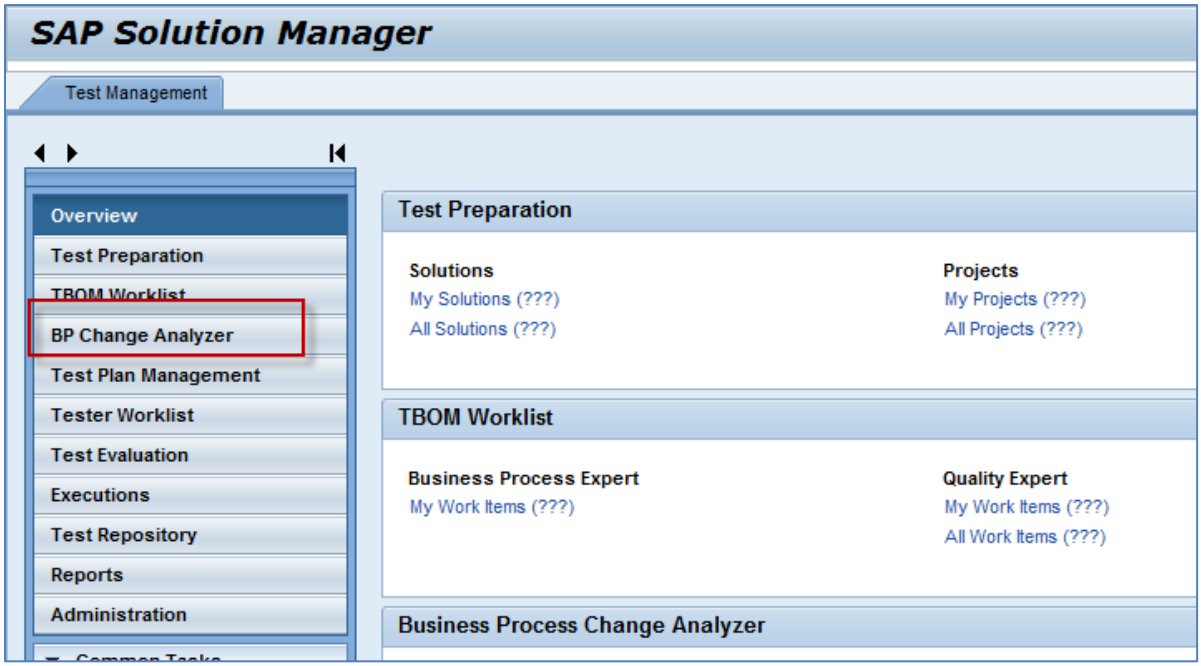
With SAP Solution Manager 7.1 SP05, you can run an impact analysis against a change transaction in SAP Solution Manager – Change Request Management application (CHARM). We will use an existing change request which was already created in the "Change Request Management(CHARM) application. Below is a screenshot of the ITSM CRM screen showing the details of the **change request ID 8000000365**



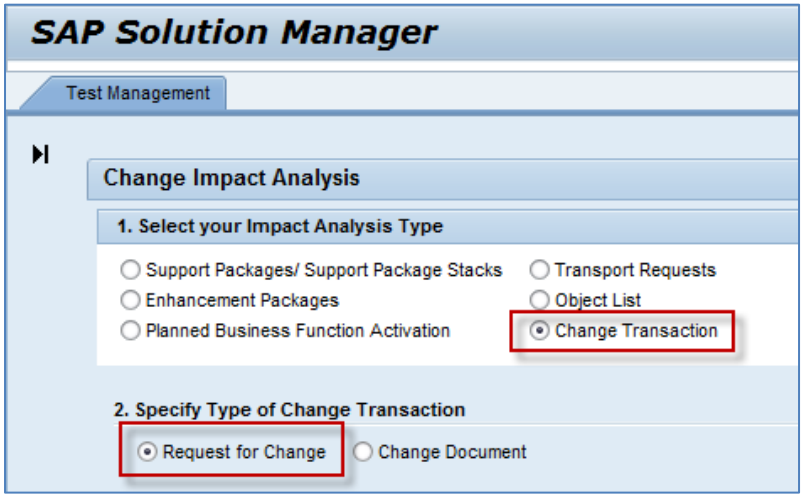
5.7.1 Alternative 1 – Trigger from SAP Solution Manager Test Management Work Center

Step 1: Go to Test Management work center in Solution Manager using the Transaction SOLMAN_WORKCENTER. Below screenshot shows the overview screen of the test management work center.

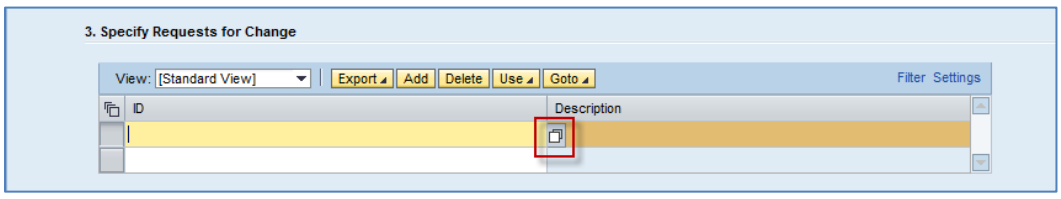
Step 2: In the Test Management work center. Go to the "BP Change Analyzer" application



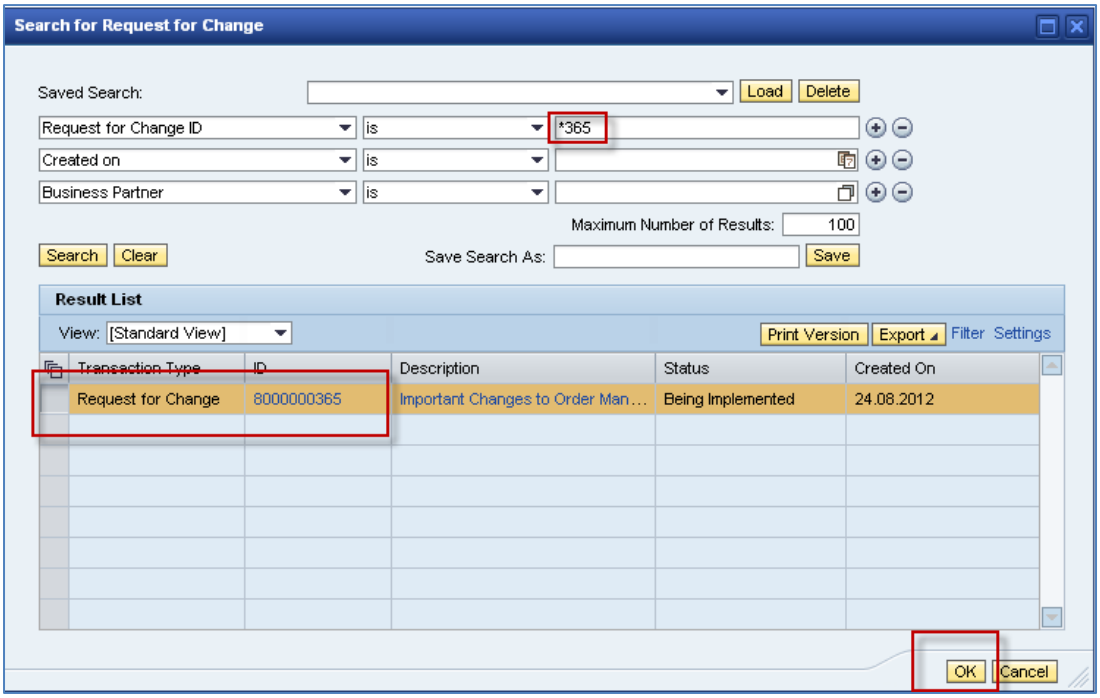
Step 3: You will see the new BPCA in put screen which has step 1 -5 to trigger a BPCA analysis
Step 4: Select the radio button “Change Transactions”



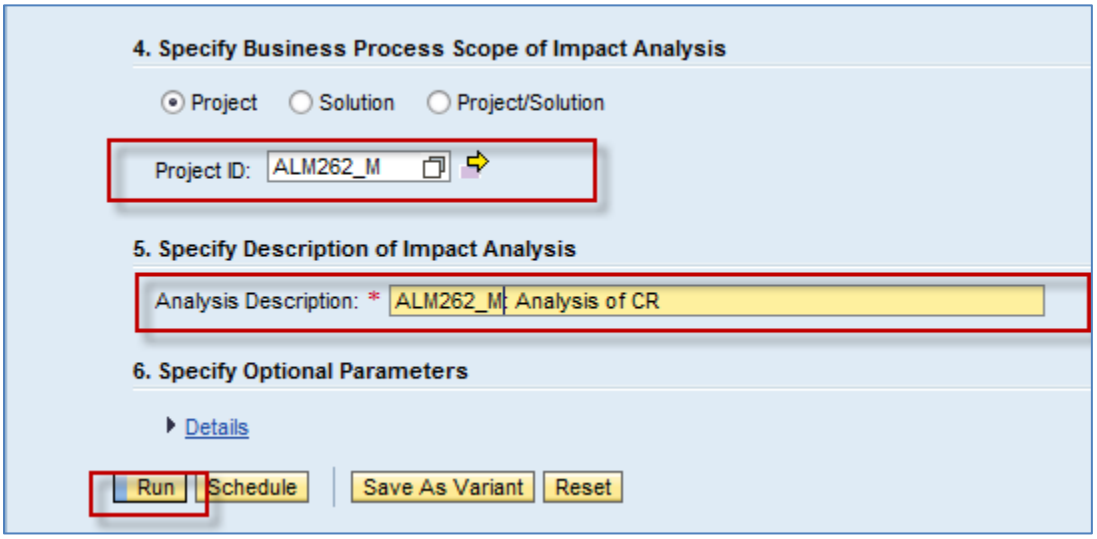
Step 5: Go for F4 help on the change request table



Step 6: In the search screen popup, Enter the search string “*365” in the change request ID



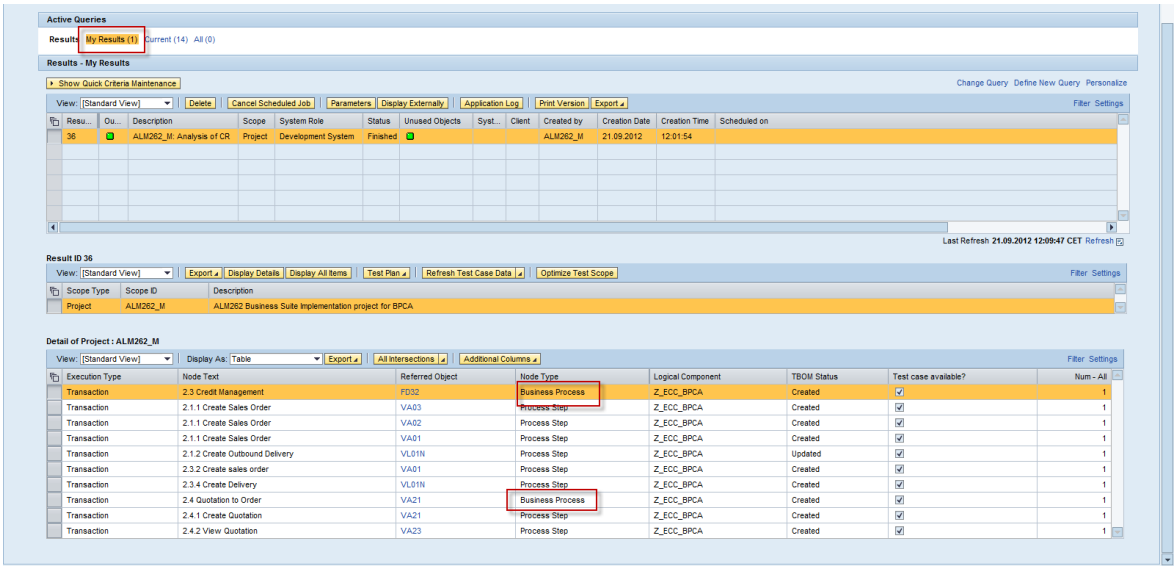
Step 7: Select the Change Request ID “8000000365”
Step 8: Enter the project id as :ALM262_M”
Step 9: Enter a description as “Analysis of a CR”



Note

The analysis will now run against all the transports associated with all change documents associated with the change request.

Step 10: Once the analysis is complete, you can see the following results



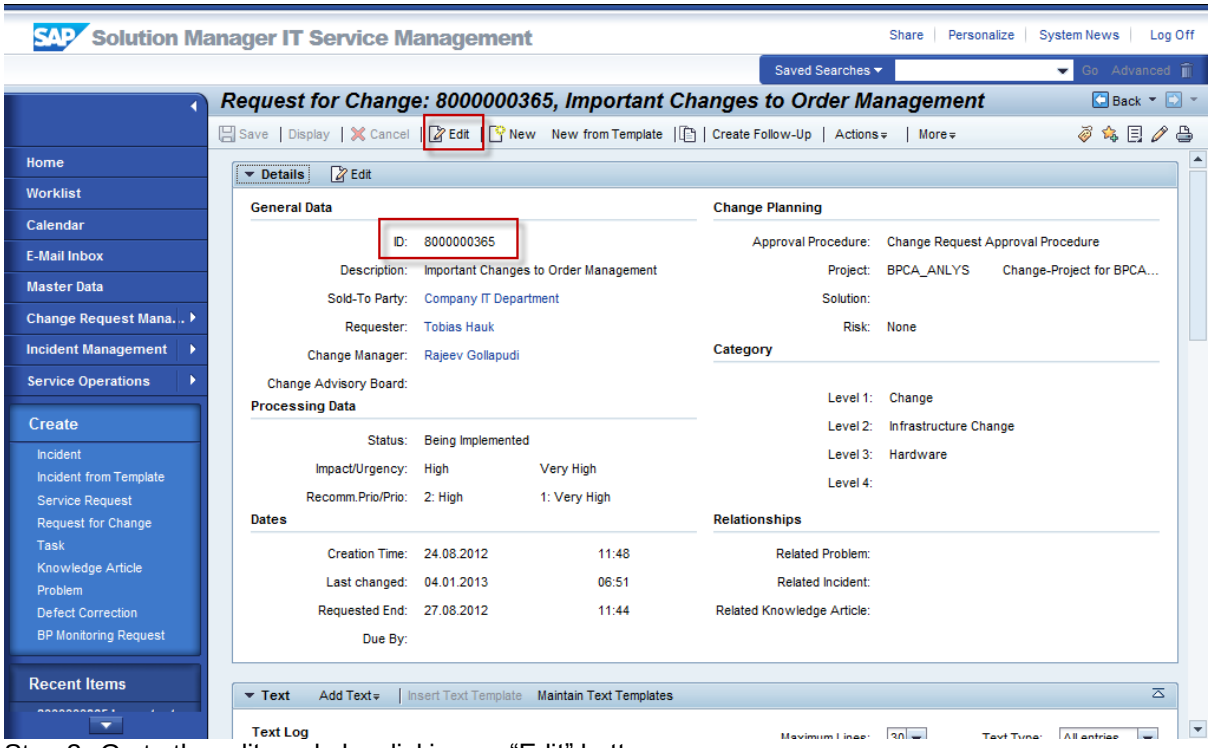
Note

The procedure is exactly same if you want run the analysis against a change document.

5.7.2 Alternative 2 – Trigger from SAP Solution Manager ITSM CRM UI

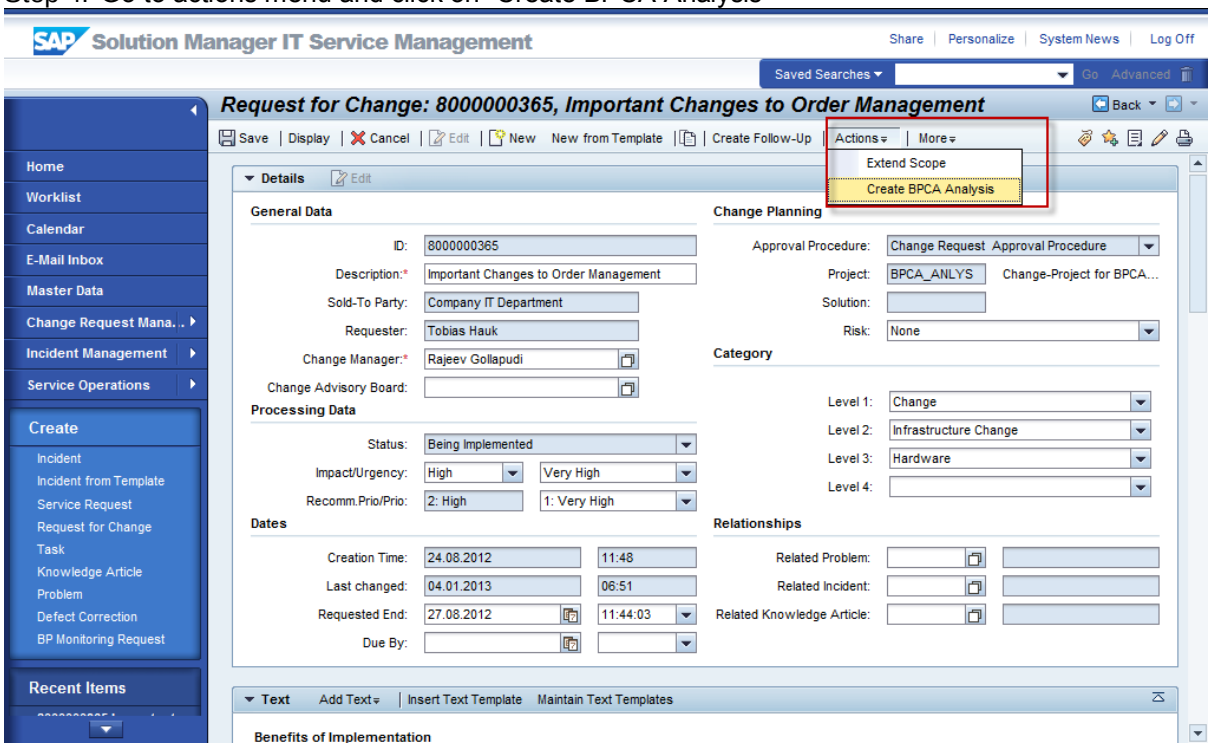
Step 1: Go to SAP Solution Manager IT Service Management CRM UI using the transaction "CRM_UI"

Step 2: Go the existing change request. We will use the same change request as in the previous section

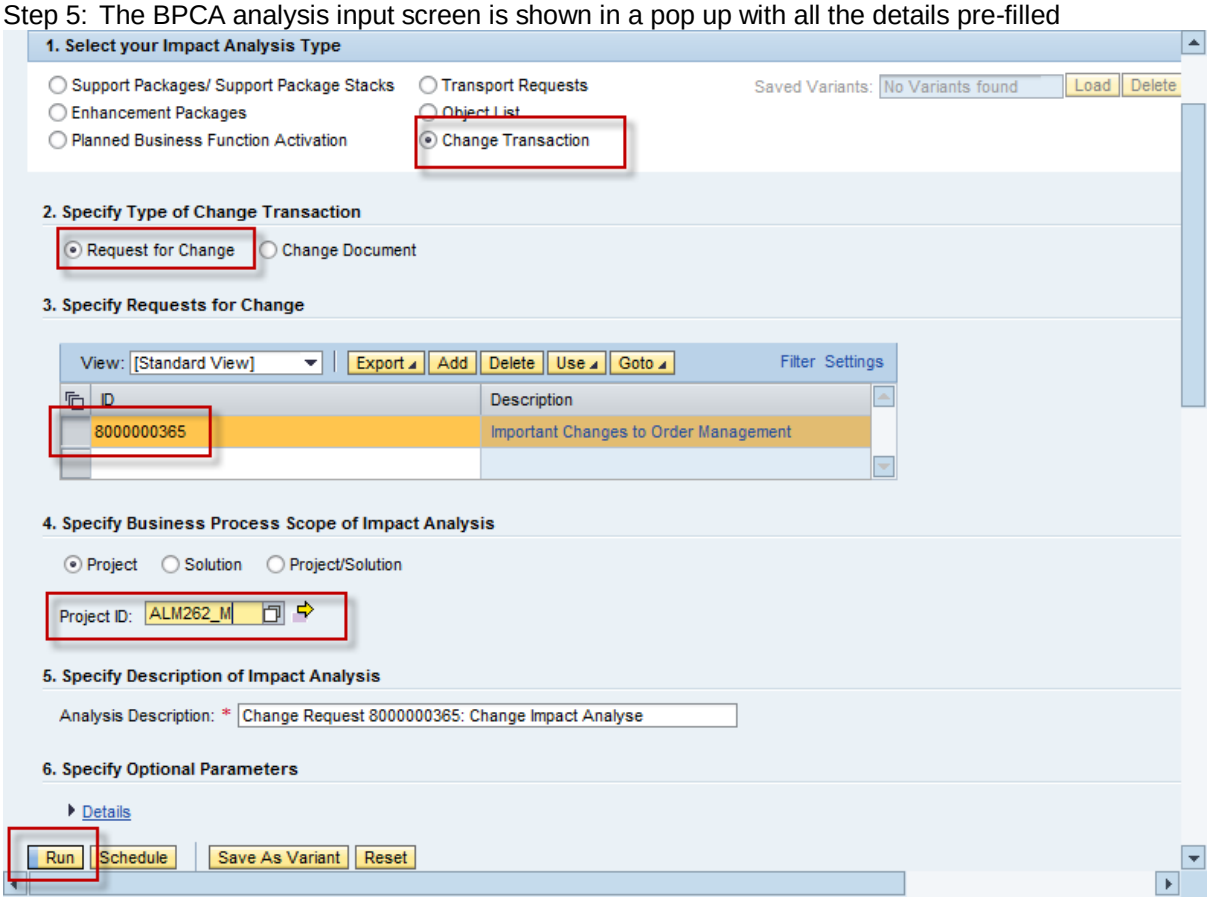


Step 3: Go to the edit mode by clicking on "Edit" button

Step 4: Go to actions menu and click on "Create BPCA Analysis"



Step 5: The BPCA analysis input screen is shown in a pop up with all the details pre-filled



Step 6: You can optionally edit any of the parameters like add another project id which has the business processes documented and TBOMs created.

Step 7: Click on “run” to start the change impact analysis

Step 8: A change impact analysis for the selected “Request for Change” is started. BPCA will include all transport requests assigned to all change documents associated with this request for change.

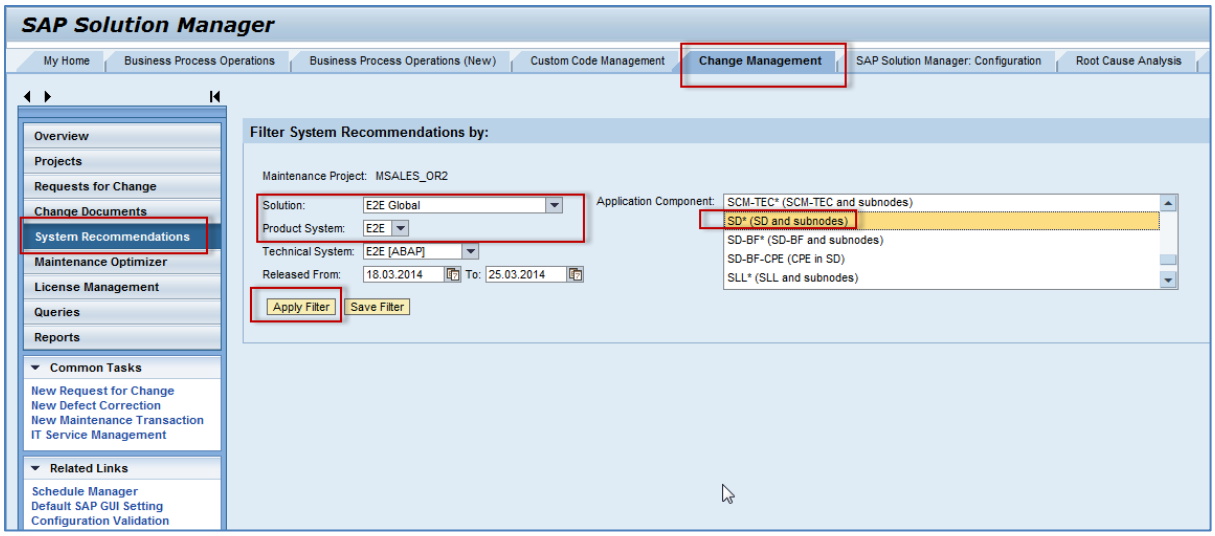
Note

The procedure is exactly same if you want run the analysis against a change document.

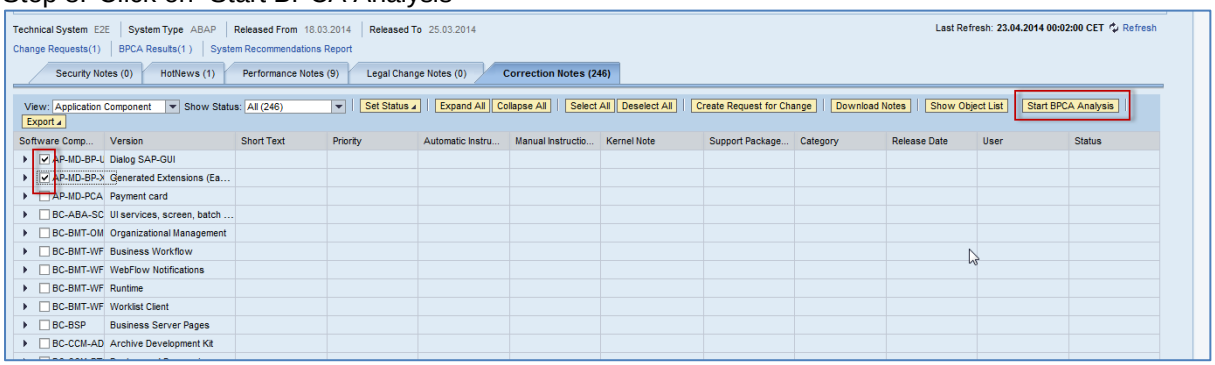
5.8 Integration with “Systems Recommendations”

With SAP Solution Manager 7.1 SP05 it is possible to run Change Impact Analysis for SAP notes recommended by “Systems Recommendations” application.

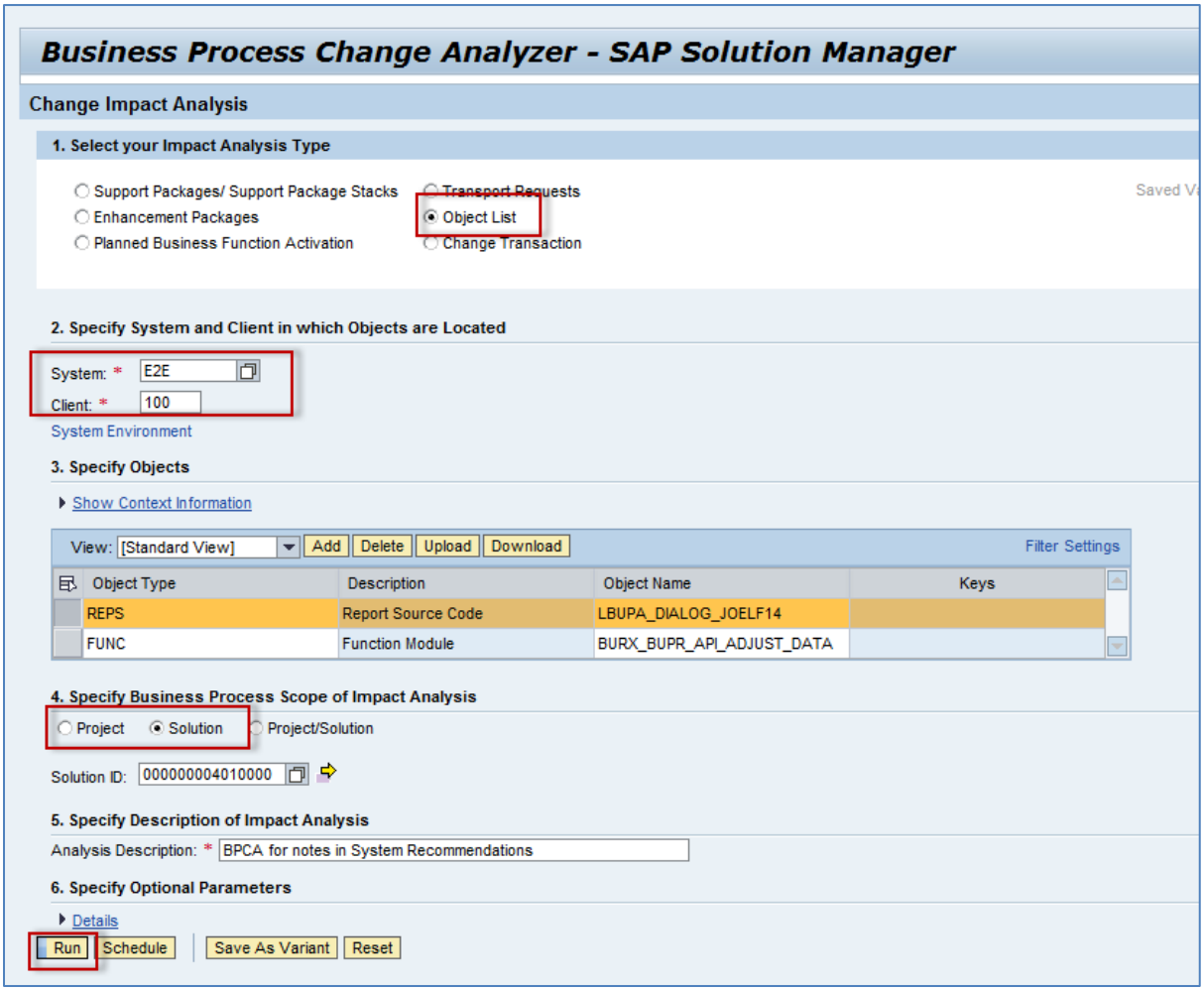
Step 1: Go to SAP Solution Manager “Change Management” work center
Step 2: Click on “System Recommendations”
Step 3: Select the Product System and Solution for which you need recommendations on SAP Notes



Step 4: Select the application component for which you would like to find SAP Notes (optional)
Step 5: Click on “Apply Filter”
Step 6: You will see a list of different SAP Notes recommended
Step 7: Select the Notes which you **plan** to implement
Step 8: Click on “Start BPCA Analysis”



Step 9: BPCA analysis input screen is launched
Step 10: Note that the change scope is “Object List” and the objects behind the selected SAP Notes are added to the change scope of the object list.
Step 11: The system and client information is also populated based on the “product system” selected in the “Systems Recommendation” application.
Step 12: The solution selected in “System Recommendation” are selected. You can change this to select your project id where you might have the TBOMs
Step 13: Click on Run to run the BPCA analysis.



Step 14: The BPCA analysis results are similar to any other use cases

5.9 Create test plan using BPCA results in Test Workbench

Once the analysis of the impact of a particular change is done, we can easily create a test plan for which contains all the test cases associated with the business process steps which are affected by the change. In this section we will understand the procedure to create a test plan in the "Test Work Bench" for the test cases affected by a customizing change which we analyzed in section 5.1

Step 1: Go to Test Management work center in Solution Manager using the Transaction SOLMAN_WORKCENTER

Step 2: Go to BP Change Analyzer View. This view will show existing/previous analysis results which were created and also allow us to create a new result of BP Change Analysis

Step 3: Select the result ID which we want to analyze. In our example we will select the result ID 174 which is for ANALYSIS OF MODIFICATION TO CUSTOMIZING CHANGES. (We can use filters/queries to find the result ID of our interest in the list shown in this panel.)

Step 4: Select the project BPCA_TRN in the results panel corresponding to the result ID 174.

Step 5: Click the button "Create Test Plan". (Alternatively we can extend an existing test plan to also hold the new test cases by clicking the "Extend Test Plan" button.)

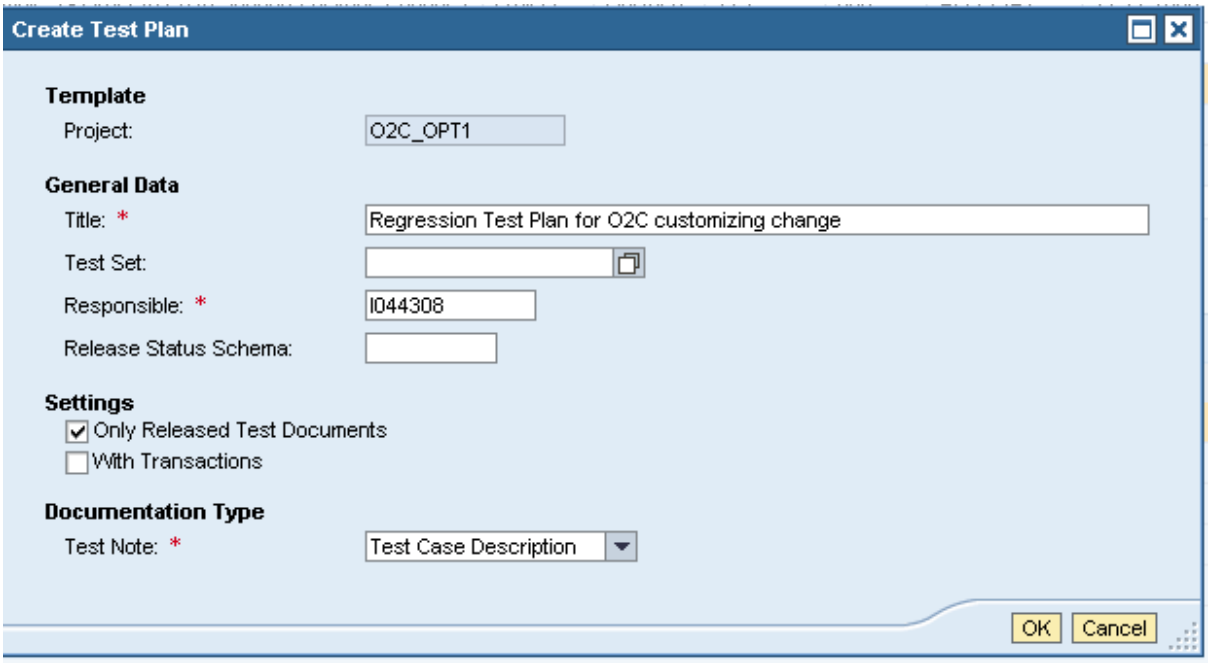
Step 6: In the Create Test Plan form enter the following details

- Title: Regression Test Plan for O2C

- Test Set: We can optionally select a test set to which a newly created test plan can be associated with. In our example we will leave it blank.
- Responsible: <Your logged in user> (select the user responsible for executing this test plan. The current logged in user is selected automatically.)
- Settings: Select the criteria for test documents which need to be considered in this test plan.
    - Select “Only Released Test Documents” if you want to have only those test cases which are of the status released in the test plan.
    - Select “With Transactions” if you want to select only those test cases which are associated with transactions.
- Documentation Type:
    - Test Note: "Test Case Description"

Step 7: Click the button “OK”.

Step 8: The test plan will now be created and the user can go to the “Test Plan Management” view under the test management work center to review and execute the test within the test plan.



6. BPCA Integration with SAP Quality Center by HP

With SAP Solution Manager 7.1 SP05, BPCA has added new APIs for 3rd party test management applications like SAP Quality Center by HP to be integrated into the change impact analysis approach of BPCA. These APIs were consumed by HP in the new version of HP Enterprise Integration (SAP Solution Manager Adapter) **version 2.7**. This section describes the

6.1 Availability and Dependencies

The BPCA – HP QC/ALM integration has the following release dependencies

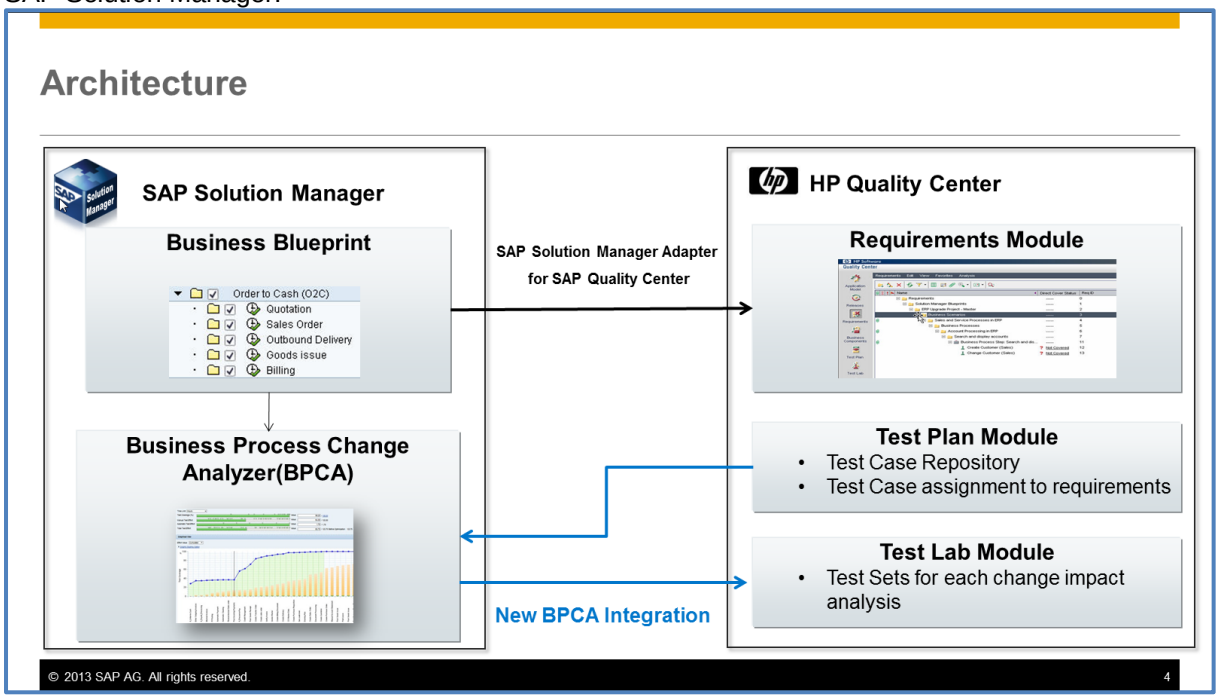
- For HP ALM 11.0 customers
    a. SAP Solution Manager 7.1 SP05
    b. SAP Solution Manager Adapter for SAP Quality Center by HP (HP EI) version 2.7
    c. HP ALM 11.0 Patch 12 or higher
- For HP ALM 11.52 customers
    a. SAP Solution Manager 7.1 SP05
    b. SAP Solution Manager Adapter for SAP Quality Center by HP (HP EI) 11.52 (Planned for Q1 2014)
    c. HP ALM 11.52 Patch 3 or higher

The integration between BPCA and HP ALM is also dependent on the usage of the SAP Solution Manager Adapter use cases. This will allow HP ALM to find the appropriate test cases for the impacted business processes.

- SAP Solution Manager Adapter for SAP Quality Center by HP (HP EI) has to installed and configured
- Using the adapter, a project in SAP Solution Manager should be connected to a project in HP Quality Center
- The business scenarios from SAP Solution Manager project has to be transferred to the HP Quality Center “Requirements Module”
- The requirements coming from SAP Solution Manager have to be linked/covered by test cases in HP Quality Center.

6.2 Architecture

Below architecture shows the way different modules of SAP Quality Center interact with BPCA and SAP Solution Manager.



To be able to use BPCA with SAP Quality Center, the following integration use cases are supported

- The test cases in Quality Center have to be linked to the requirements coming from SAP Solution Manager. This can be done using the “Requirements Coverage” attribute of each test case. This relationship will be used by Quality Center when test cases have to be identified for impacted business processes.
- **New: BPCA analysis can now be triggered for an external test management system (HP Quality center) so that test case information (availability of test cases, test case types, efforts etc) are transferred from HP Quality Center into BPCA**
- **New: BPCA test scope optimization will also use the test case information for optimizing the test scope based on test effort and also test case attributes**
- **New: You can create a test set in Quality Center directly from BPCA (either from the main impact results screen or from the test scope optimization screen)**
- **New: You can extend a previously created test set from BPCA as well.**

6.3 Setup

6.3.1 Technical Configuration of web services

For more information on HP Enterprise Integration EI 2.7 please refer to the following link from HP

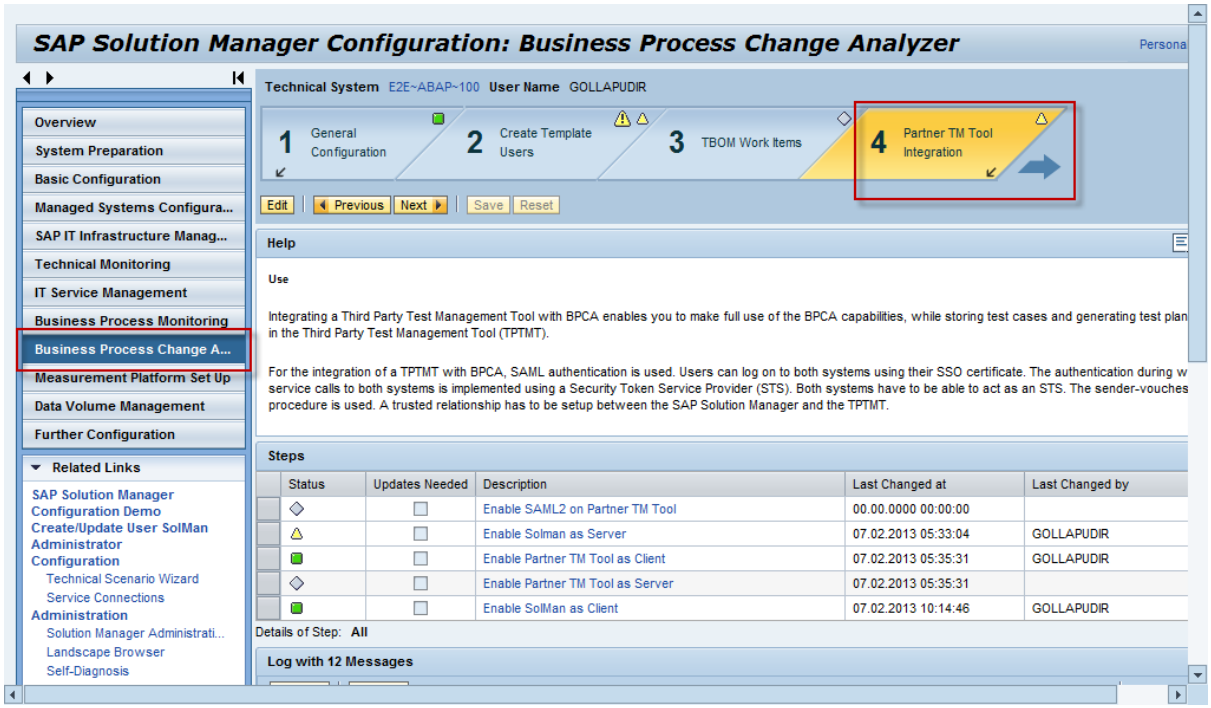
https://hpln.hp.com/page/hp-enterprise-integration-module-sap-solution-manager-0

User Guide for EI 2.7 : https://hpln.hp.com/node/16719/attachment

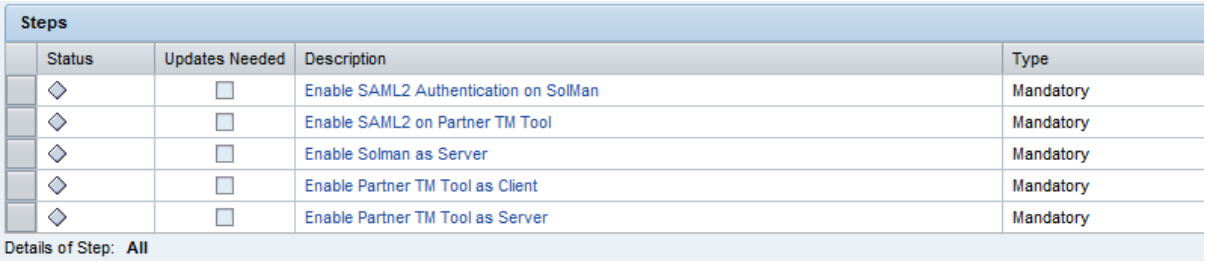
EI 2.71 which was released in 2014 has bug fixes for BPCA-QC integration and thus is recommended to be used instead of EI 2.7. EI 2.71 is also available for download from the above website.

User Guide for EI 11.52: https://hpln.hp.com/node/17943/attachment

All steps needed to configure the 3rd party test management tool like HP Quality Center are available in the SOLMAN_SETUP transaction under the “Business Process Change Analyzer” area under section 4.

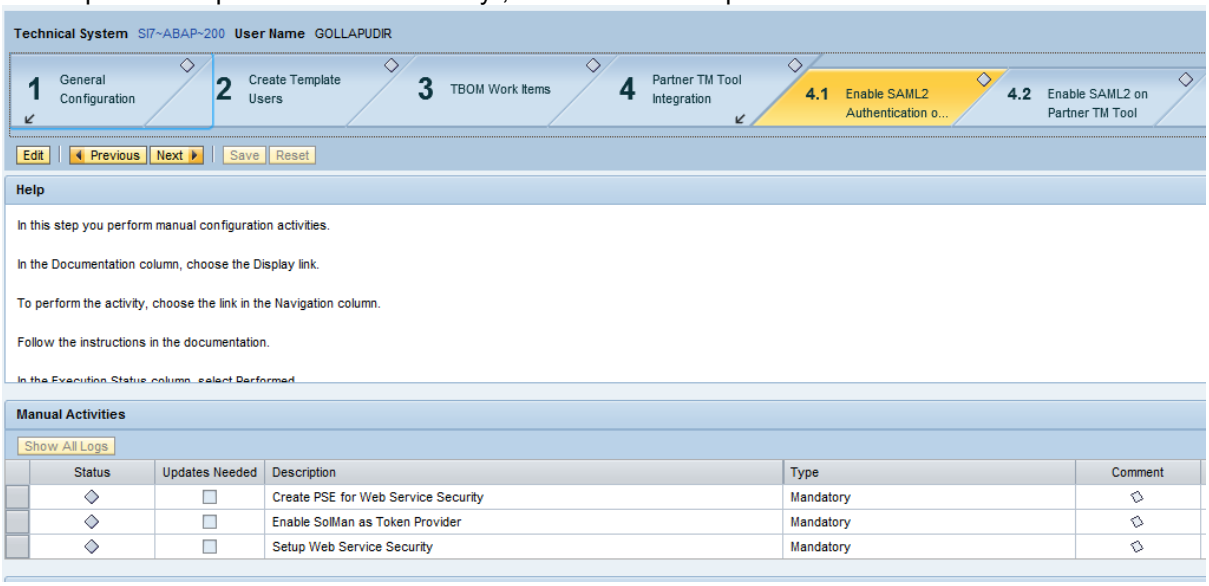


The following steps have to be completed



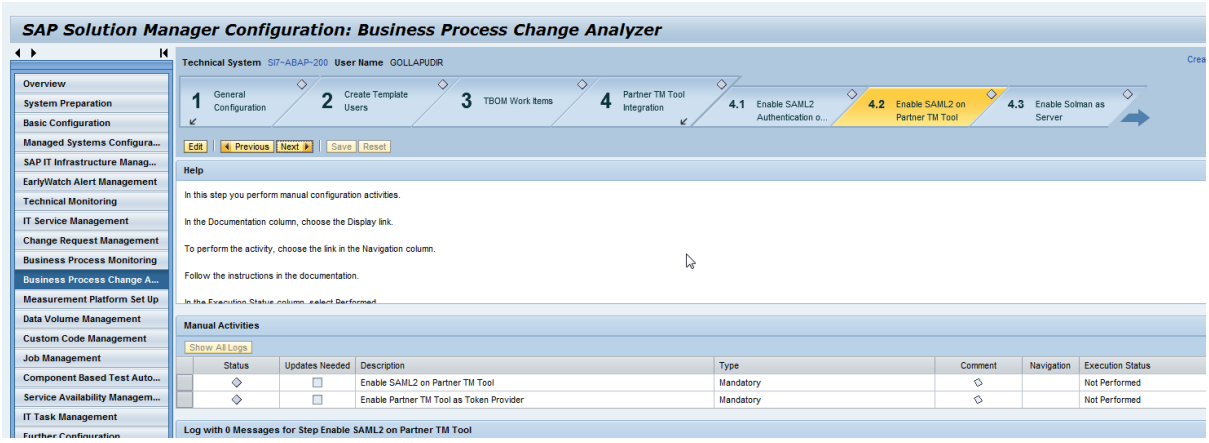
6.3.1.1 Section 4.1- Enable SAML2 Authentication on SAP Solution Manager

In this section, you will perform 3 steps. Please follow the instructions in SOLMAN_SETUP carefully. For step 3 – “Setup Web Service Security”, ensure that the report runs with no errors.



6.3.1.2 Section 4.2 – Enable SAML2 on Partner TM Tool

There is nothing to be done on HP ALM to enable SAML2, you can skip this section



6.3.1.3 Section 4.3 - Enable Solman as Server

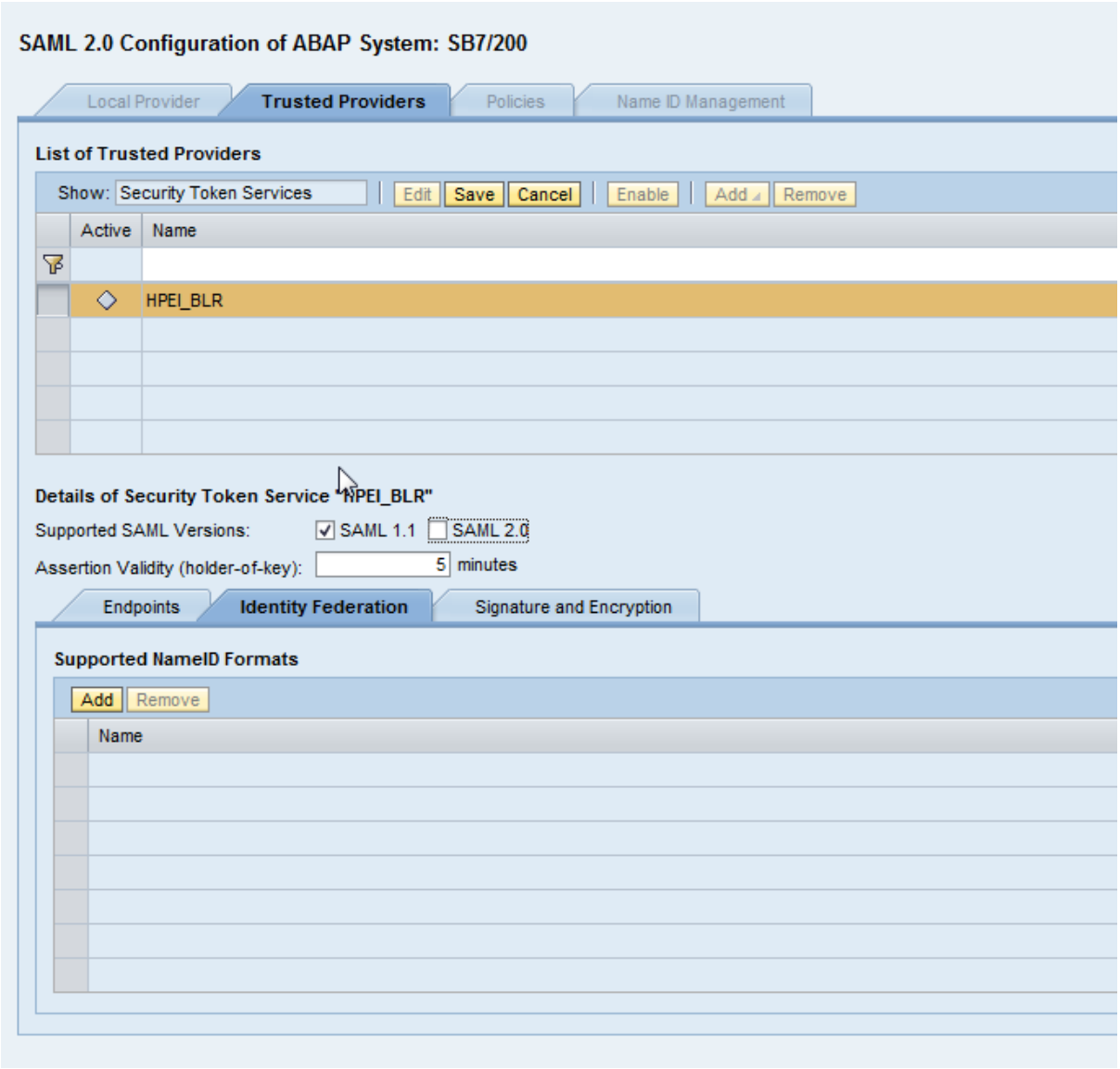
Now we need to import the certificate from HP ALM into SAP Solution Manager

Step 1: Start Transaction SAML2

Step 2: Go to Trusted Providers tab.

Step 3: Choose ‘Security Toke Issuer’.

Step 4: Choose ‘Add’ ‘manually’



Step 5: Enter a name that identifies the HP quality Center server as “HPEI”

Step 6: Upload the certificate from HP ALM – See section 6.3.2.2 to know how to get the certificate file

Step 7: Choose ‘Next’.

Step 8: Do NOT enter a period.

Step 9: Choose ‘Finish’.

Step 10: Mark the newly created provider and choose ‘Edit’.

Step 11: Unmark the Checkbox ‘SAML 2.0’.

Step 12: Go to Identity Federation tab and choose Add.

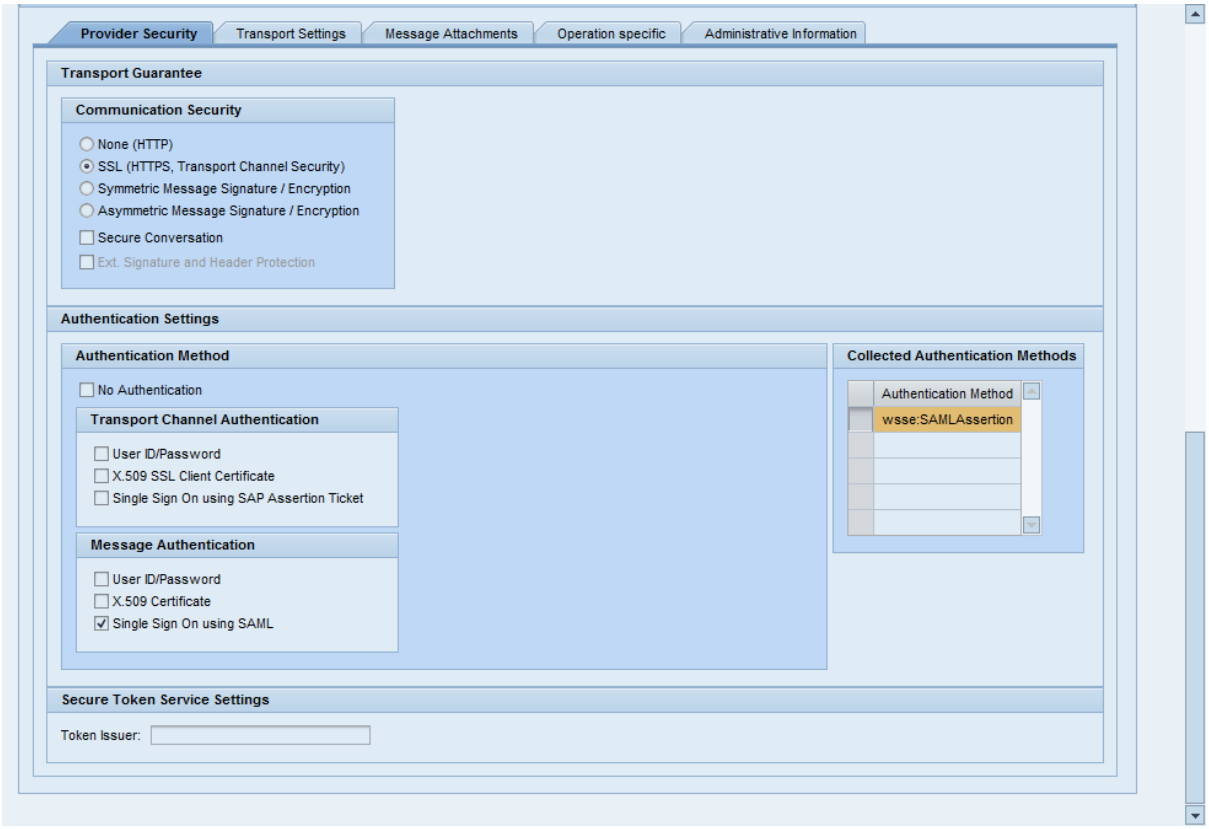
Step 13: Choose ‘Unspecified’.

Step 14: Verify that the Source field says “Logon ID”

Step 15: Choose ‘Save’.

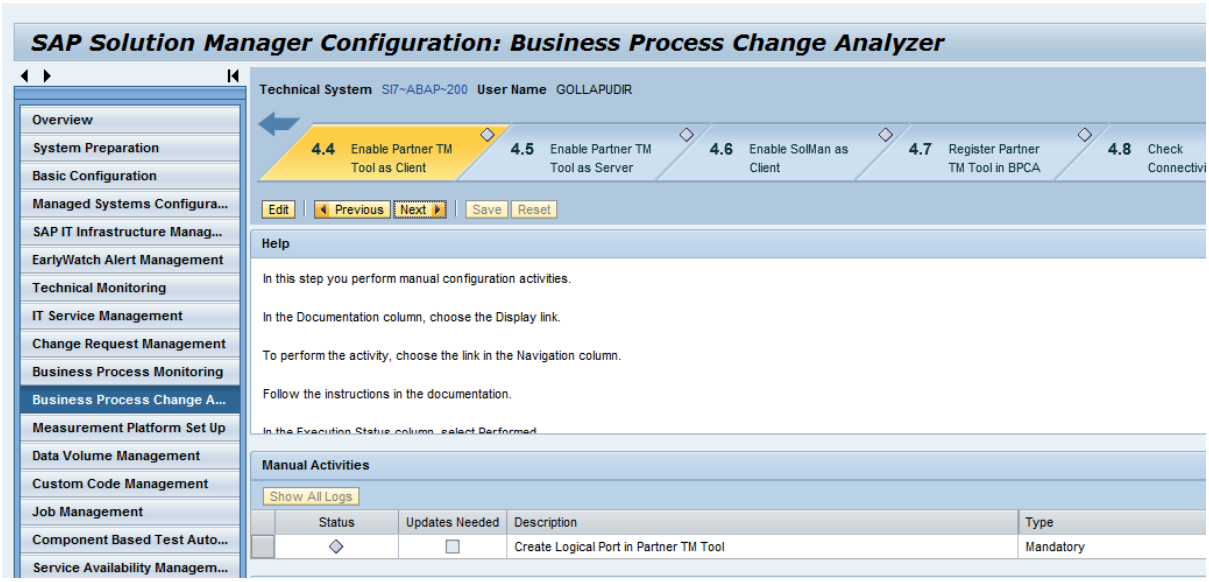
Step 16: Choose ‘Enable’

Part 2 - Then you will create an endpoint for AGS_BPCA_WS_API in SOAMANAGER transaction. Ensure that SSL is selected if SSL is configured on your SAP Solution Manager server.



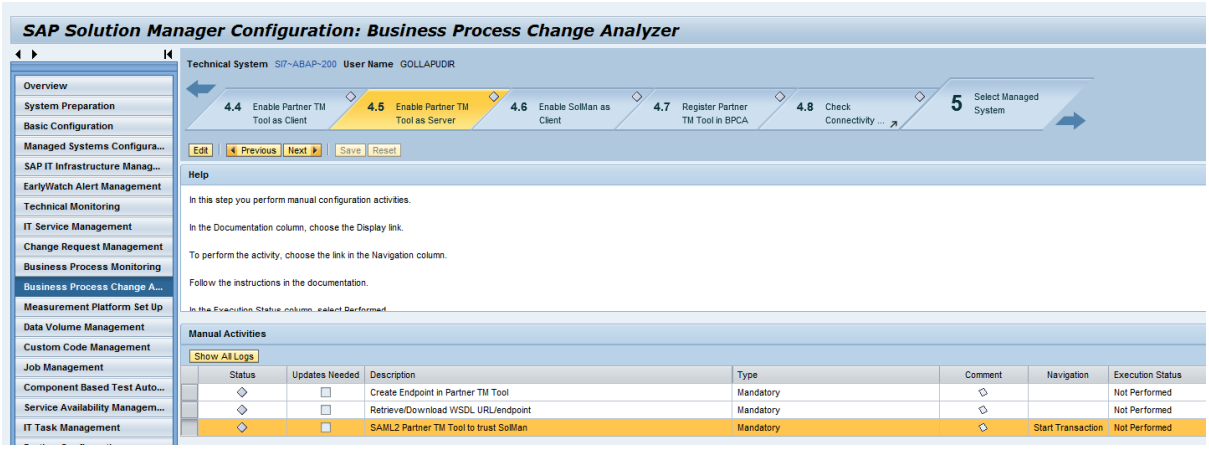
6.3.1.4 Section 4.4 – Enable Partner TM Tool as Client

There is no configuration need to be done for HP ALM so you can skip this section.



6.3.1.5 Section 4.5 - Enable Partner TM Tool as Server

In this section you need to export the WS URL and use it in HP ALM.



Create Endpoint in Partner TM Tool

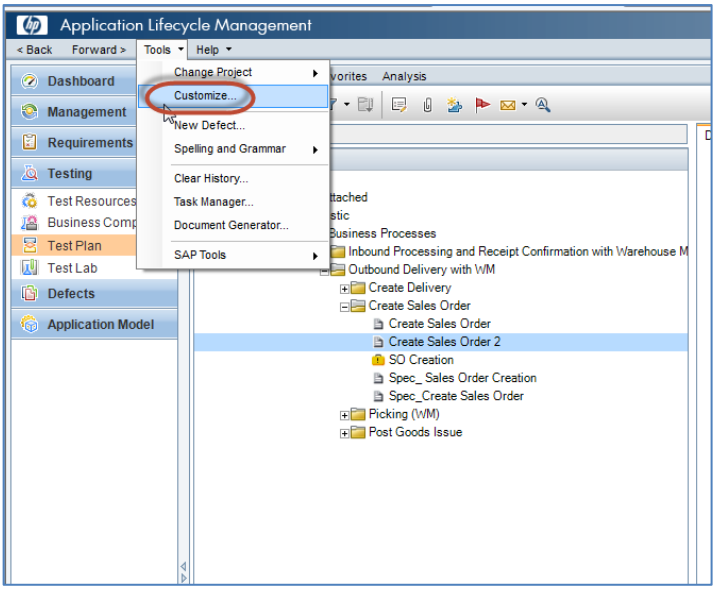
Nothing needs to be done for this step in HP ALM

Retrieve/Download WSDL URL/endpoint and Configure the HP ALM project for BPCA

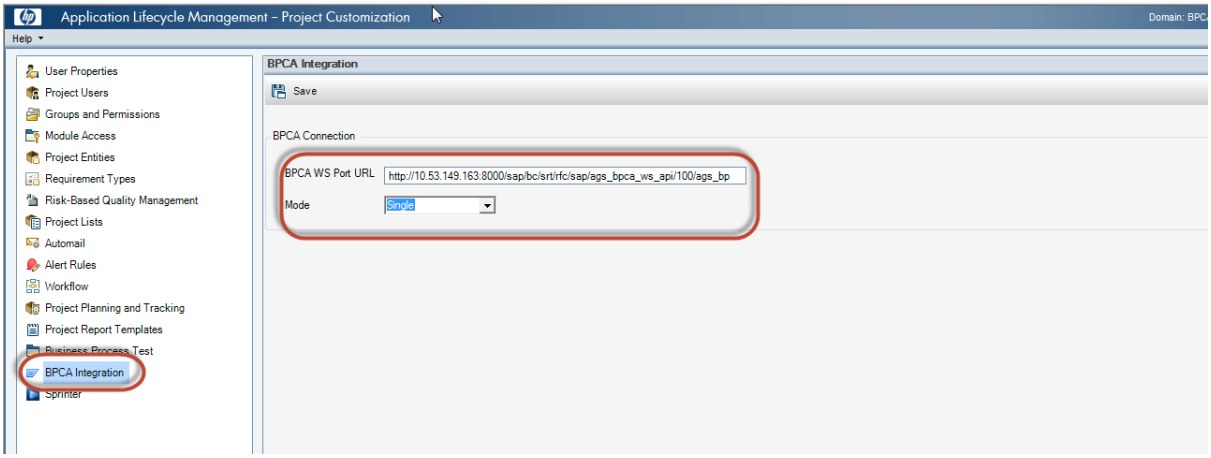
Step 1: You need to customize the HP Quality Center Project to connect to BPCA.

Step 2: Login to the HP ALM project

Step 3: Go to “Tools” -> “Customize” menu of your HP ALM project



Step 4: In the project customizations, go to “BPCA Integration section”



Step 5: You need to enter the BPCA WS URL to access Solution Manager. You should enter the following URL: http://<SAPServer:SAPSERVERPort>/<RetrievedBPCA_URL>

Step 6: You can retrieve the URL as follows

a. In SAP Solution Manager, go to the SOAMANAGER transaction.
b. In the Service Administration tab, choose Web Service Configuration.
c. In the Web Service Configuration screen, make sure that the Search by field is set to Service Definition and enter *bpca* as the Search Pattern.
d. In the Search Results section, select AGS_BPCA_WS_API and click Apply Selection.
e. In the Details of Service Definition section, in the Configurations tab, select the active configuration, and click Display.
f. In the Configuration of Web Services section, in the Transport Settings tab, copy the Calculated Access URL.

Step 7: You can also select the option if you want HP ALM to create a single test set or multiple test sets from BPCA.

Step 8: If you select “Single” then for each BPCA analysis a single test set is created which will have test cases associated to all impacted business processes

Step 9: If you select “Multiple” then for each BPCA analysis a folder is created in the test lab module and one test set per impacted process is created. For example if “Create Sales Order” , “Create Leave Request(HR)” process steps are impacted. Then HP ALM will create one test set for “Order to Cash” (which has “Create Sales Order”) and one test set for “Payroll Processing” (which has “Create leave request” process step)

SAML2 Partner TM Tool to trust Solman

Export certificate in SAP Solution Manager and import into HP Quality Center

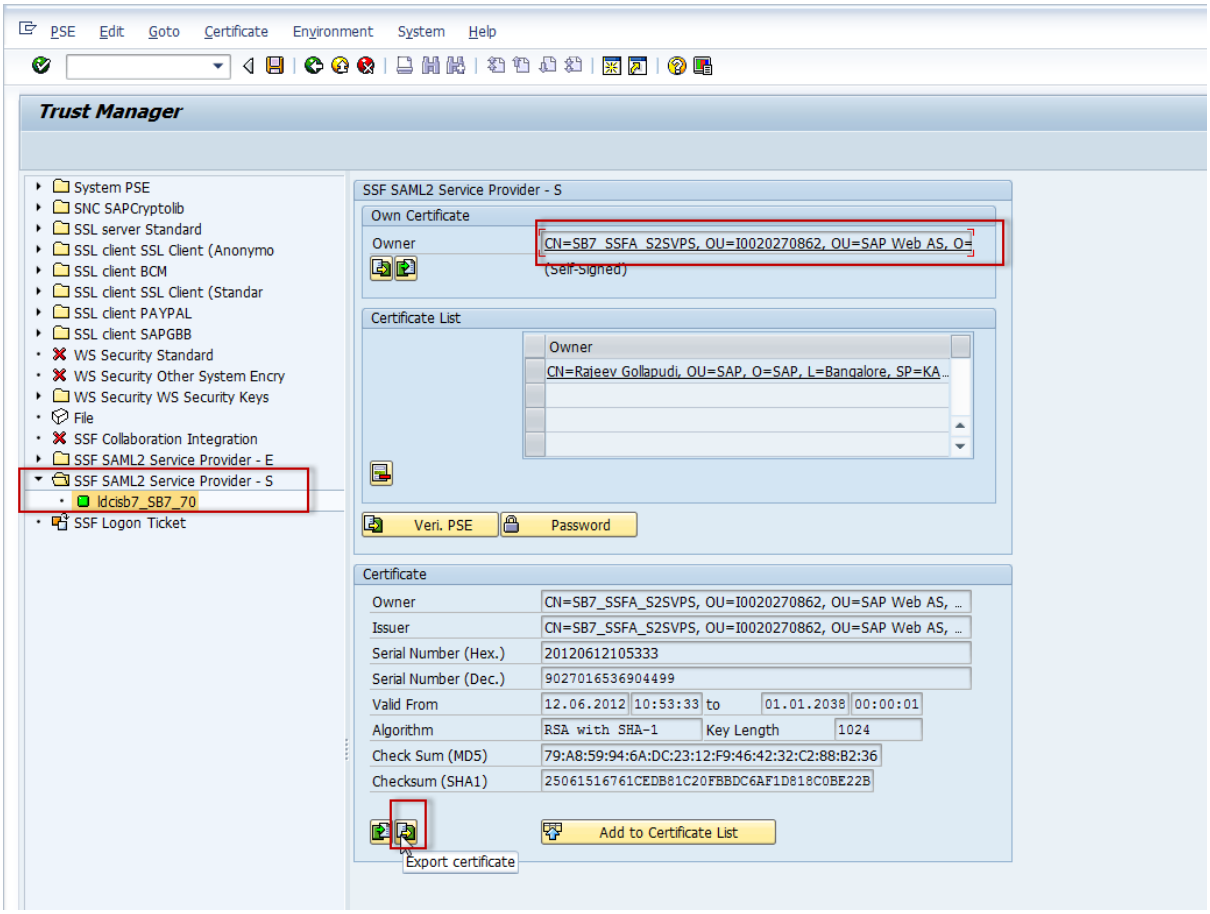
You need to export SAML2 Certificate from SAP Solution Manager and import into HP ALM.

Step 1: Go to the STRUST transaction in SAP Solution Manager.

Step 2: In the left pane, expand the “SSF SAML2 Service Provider - S node” and double-click the provider inside it. The service provider details appear in the right pane

Step 3: In the Own Certificate pane, double-click the certificate details in the owner field. The certificate details open in the Certificate pane below.

Step 4: Click on export certificate



Step 5: Enter the file path to which you want to export the SAP certificate (browse to select the location). – ex: solman.crt

Step 6: In File format, ensure that Binary is selected.

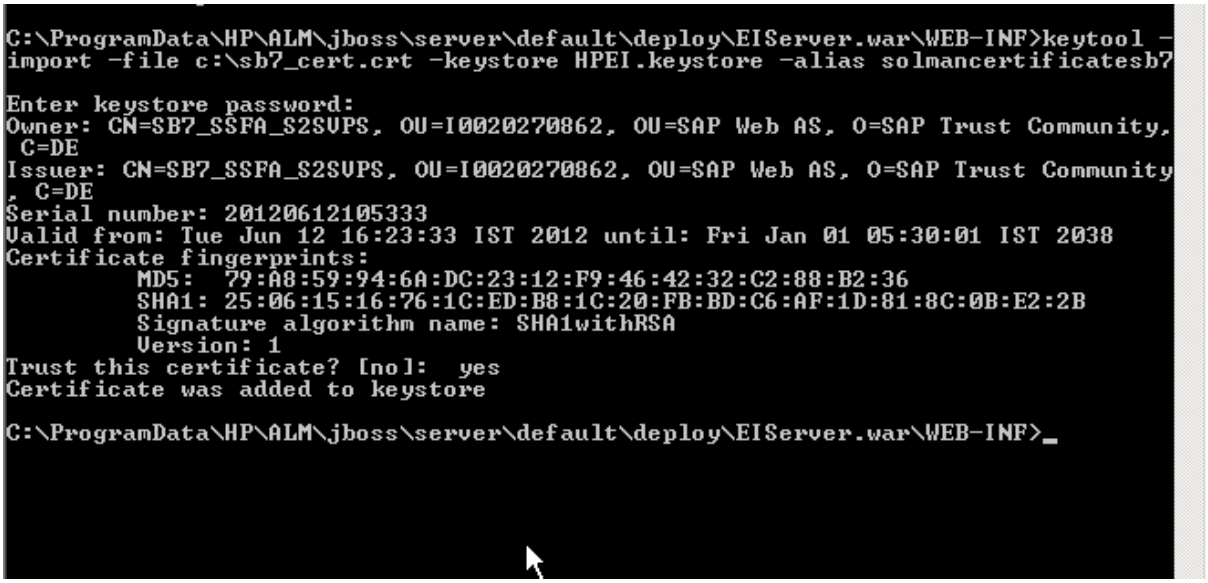
Step 7: Click the check icon at the lower-right of the export certificate dialog

Step 8: Import the SAP certificate into the HP keystore file under the alias “SolmanCertificate”

Step 9: Go to WEB-INF folder of HP Enterprise Integration

Step 10: Run the following command in the command prompt to generate the certificate

keytool -import -file solman.crt -keystore HPEI.keystore –alias solmancertificate



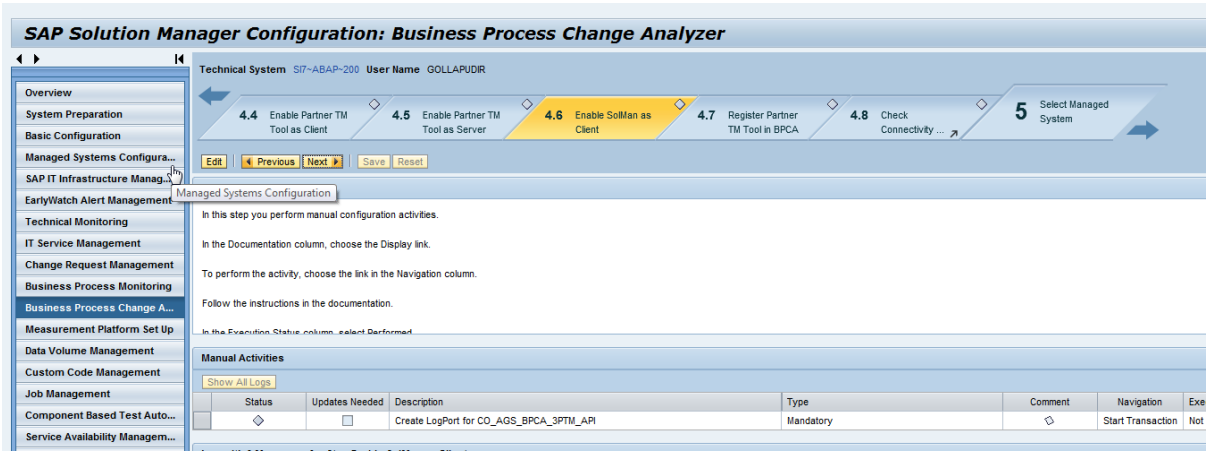
Step 11: Your SAP Solution Manager certificate is now imported into HP ALM keystore.

For HP ALM 11.52, the keystore is available in a different folder

C:\ProgramData\HP\ALM\webapps\qcbin\WEB-INF\classes\HPEI.keystore

6.3.1.6 Section 4.6 – Enable Solman as Client

In this step you will create a Logical Port for HP ALM in SOAMANAGER transaction



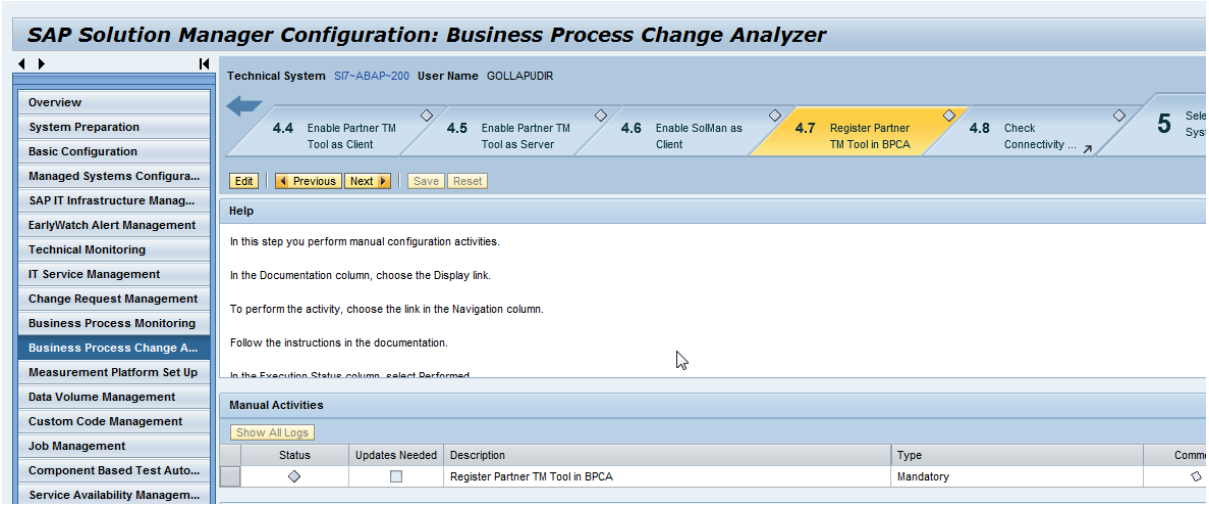
For HP ALM the WSDL URL can be retrieved using the following

http://<HPQCServer>:<Port>/EIServer/services/AGS_BPCA_3PTM_API?wsdl

Ensure that you are able to access this url from the web browser.

6.3.1.7 Section 4.7 – Register TM Tool in BPCA

In this step you will register HP ALM as a test management tool in BPCA

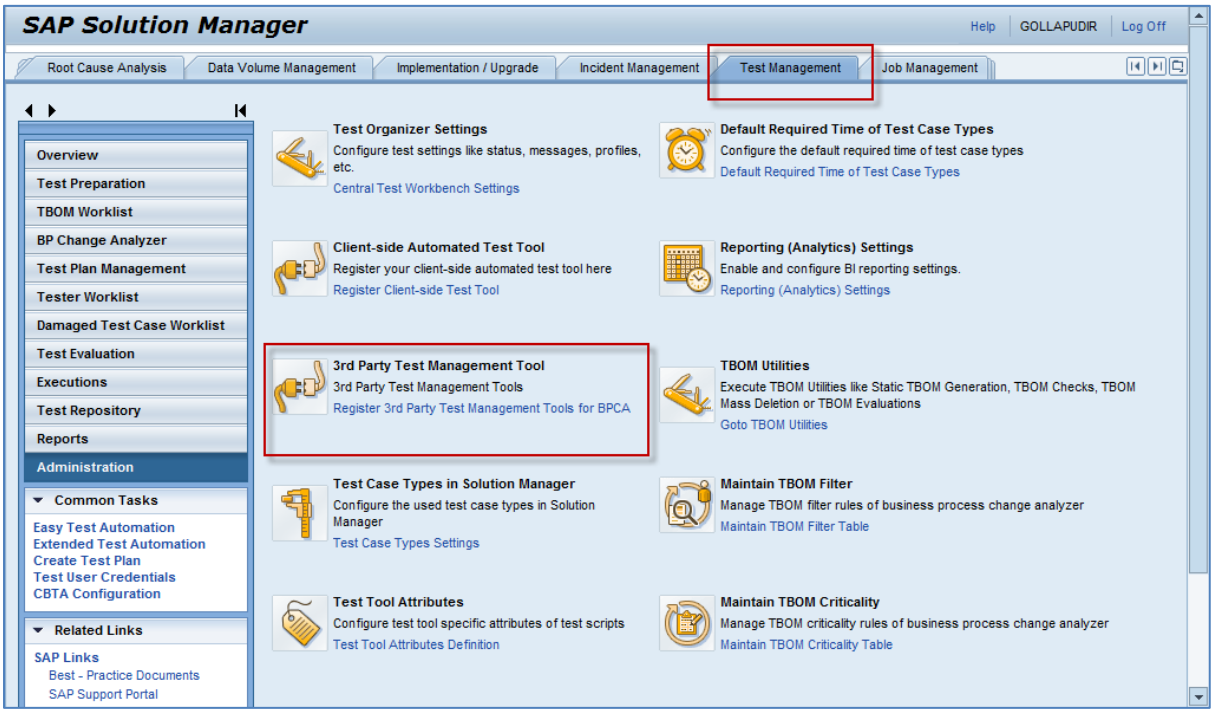


Register the HP ALM as a new "3rd Party Test Management tool"

Step 1: Go to „Test Management" workcenter

Step 2: Goto „Administration" tab

Step 3: Click on „Register 3rd Party Test Management Tool for BPCA"



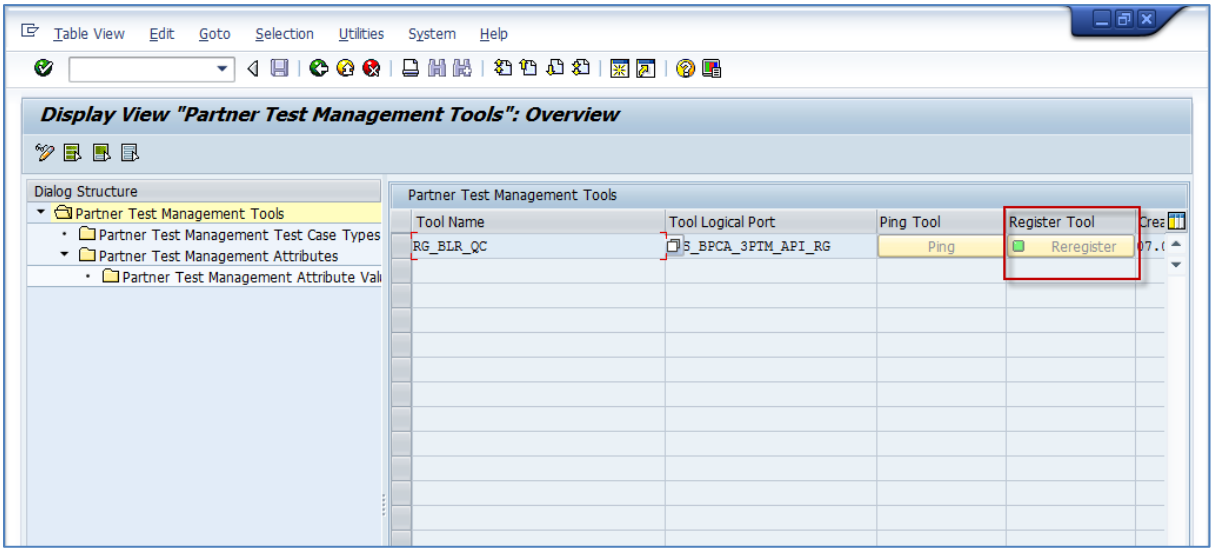
Step 4: The registration application is launched

Step 5: Go to „Edit" mode

Step 6: Click on „new entries"

Step 7: Enter the Tool name, select the logical port created as part of the setup.

Step 8: Click on „Register"



6.3.2 Configure SAML for HP ALM

For the BPCA integration to work with HP ALM/QC, you need to configure SAML so that both servers (HP ALM and SAP Solution Manager) to trust each other.

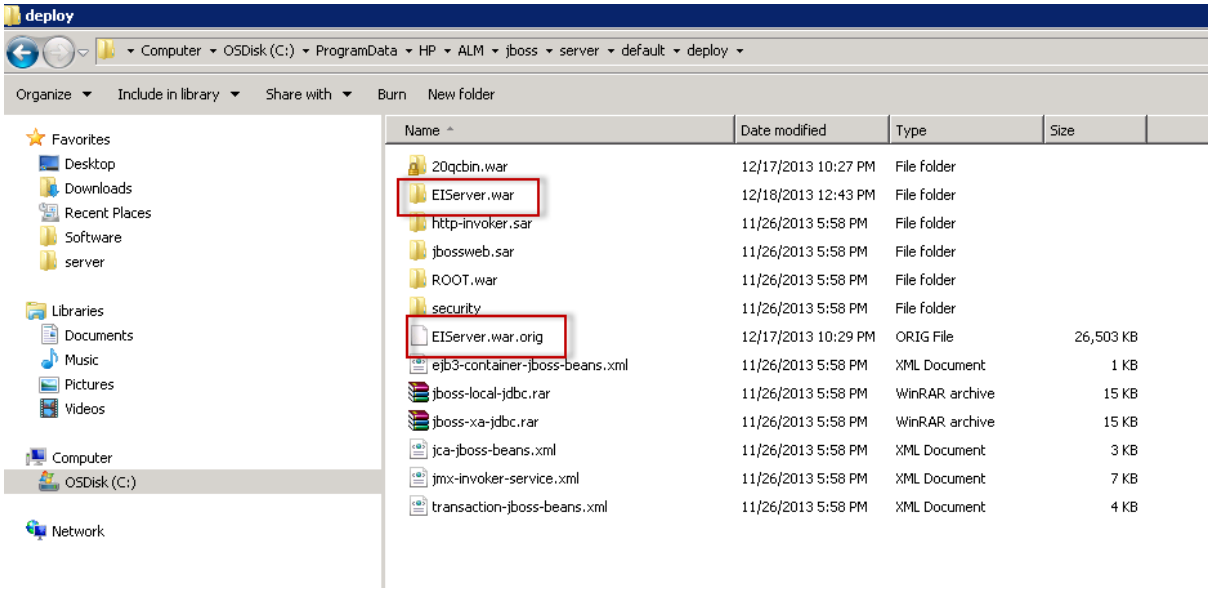
6.3.2.1 Using “Keytool”

Keytool is used to generate and store certificates in HP Quality Center. To use the keytool, you need to find the keytool.exe on your HP Quality Center server. For example on the windows installation you can find the keytool.exe at “C:\Program Files\HP\HP Application Lifecycle Management Platform\java\jre\bin”

Add the path for keytool.exe in your **windows PATH environment variable** so that you can access it anywhere. HP Quality Center keystore for Enterprise Integration (EI) is inside the EIServer.war file. EIServer.war file is inside your web server for HP Quality Center. For the jboss server installed in Microsoft Windows the path is as follows

C:\ProgramData\HP\ALM\jboss\server\default\deploy

You need to unzip this war file into a folder and then you can navigate inside the war file. You can then rename the original .war file to some other name. See the screenshot below, the EIServer.war has been unzipped into a folder with the same name. the original EIServer.war file has been renamed to “EiServer.war.orig”



C:\ProgramData\HP\ALM\jboss\server\default\deploy\EIServer.war\WEB-INF here you can find the HPEI.keystore file.

We will use this file in the subsequent steps. Default password for HP EI keystore is 123456

For HP ALM 11.52, the keystore is available in a different folder

C:\ProgramData\HP\ALM\webapps\qcbin\WEB-INF\classes\HPEI.keystore

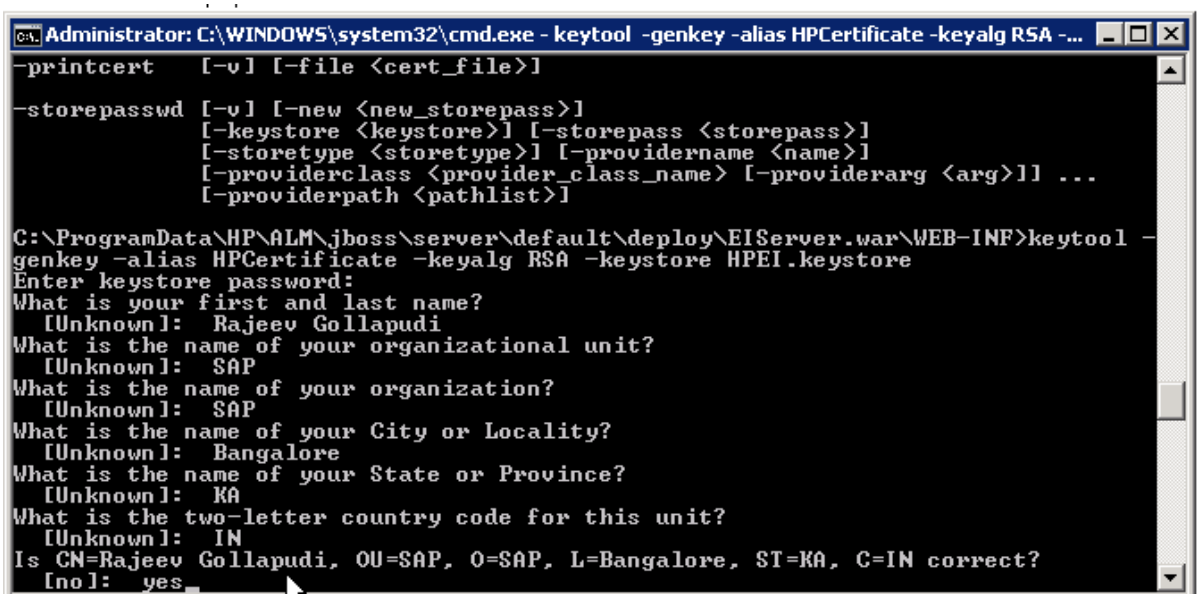
6.3.2.2 Get certificate from HP Quality Center

In this step we need to generate the certificate from HP Quality Center, which will be uploaded later into SAP Solution Manager.

Step 1: Go to WEB-INF folder of HP Enterprise Integration

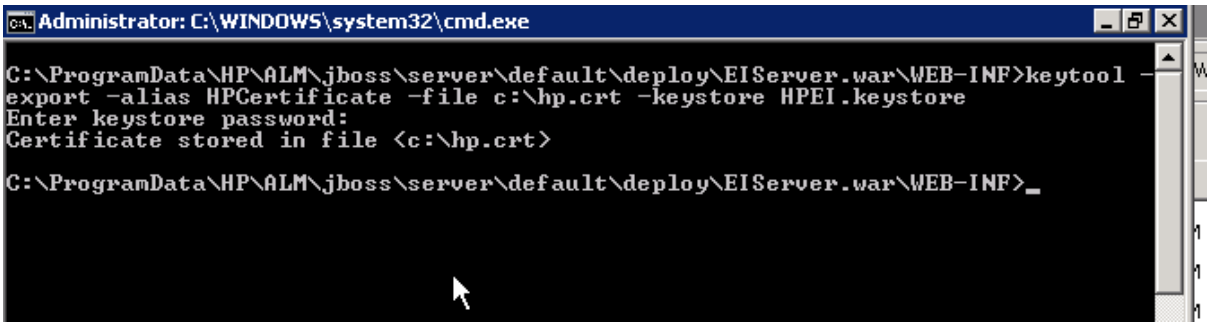
Step 2: Run the following command in the command prompt to generate the certificate

Keytool -genkey -alias HPCertificate -keyalg RSA -keystore HPEI.keystore



Step 3: Export the certificate into a file like “HP.crt” using the following command

keytool -export -alias HPCertificate -file c:\hp.crt -keystore HPEI.keystore



Step 4: Keep the hp.crt file so that you can use it in the next step

6.3.3 Additional configuration in HP ALM

To change additional parameters like keystore file name, password, certificates alias, issuer name, see the configuration file locations and parameters below:

6.3.3.1 HP ALM Server Configuration Files

Location:

C:\ProgramData\HP\ALM\jboss\server\default\deploy\EIServer.war\WEB-INF\crypto.properties

To change the keystore filename, password or proprietary certificate alias, change the values of the following parameters:

- *org.apache.ws.security.crypto.merlin.file=../HPEI.keystore*
- *org.apache.ws.security.crypto.merlin.keystore.password=xxxxx*
- *org.apache.ws.security.crypto.merlin.keystore.alias=HPCertificate*

6.3.3.2 HP ALM Client Configuration file

Location:

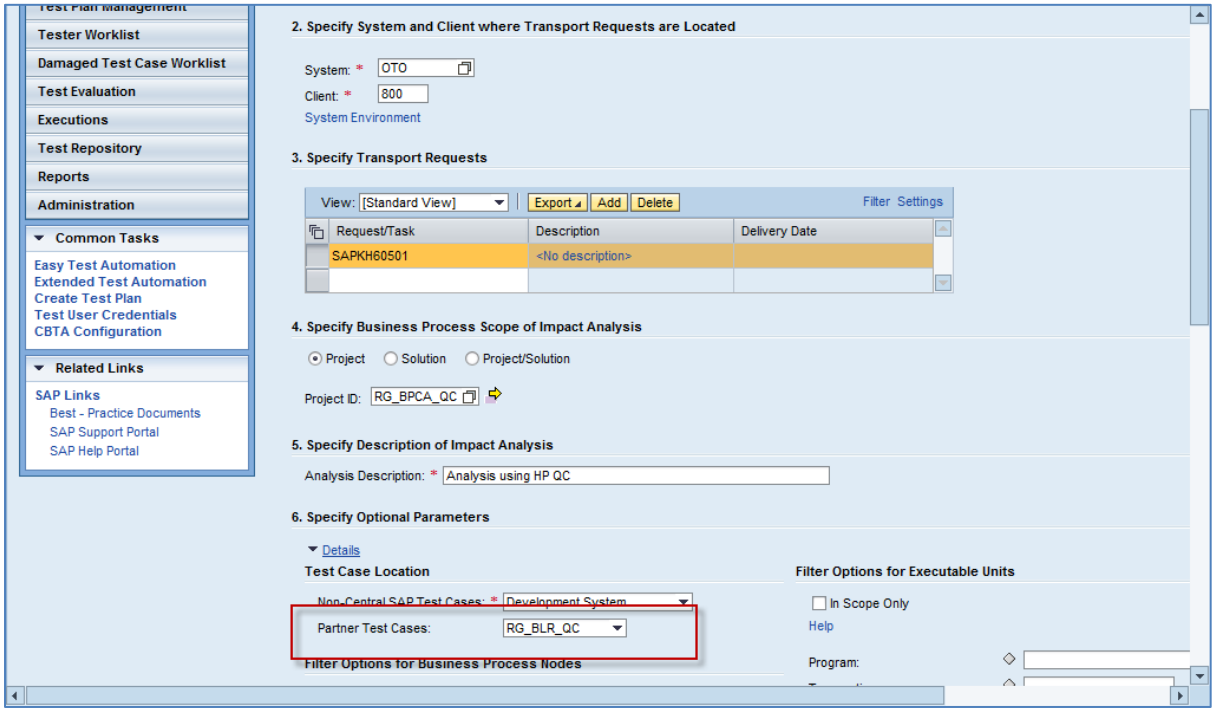
C:\ProgramData\HP\ALM\jboss\server\default\deploy\EIServer.war\WEB-INF\classes\cryptoClient.properties

If you change any of the values in the server configuration in certificate import in section0, you may need to also change certain values in the client configuration file:

- *org.apache.ws.security.crypto.merlin.keystore.password=xxxxx*
- *solman.user=solmanuser*
- (“solmanuser” would be the user on your SAP Solution Manager system)
- *issuer=HPEI*
- *signature.username=HPCertificate*
- *encryption.username=SolmanCertificate*

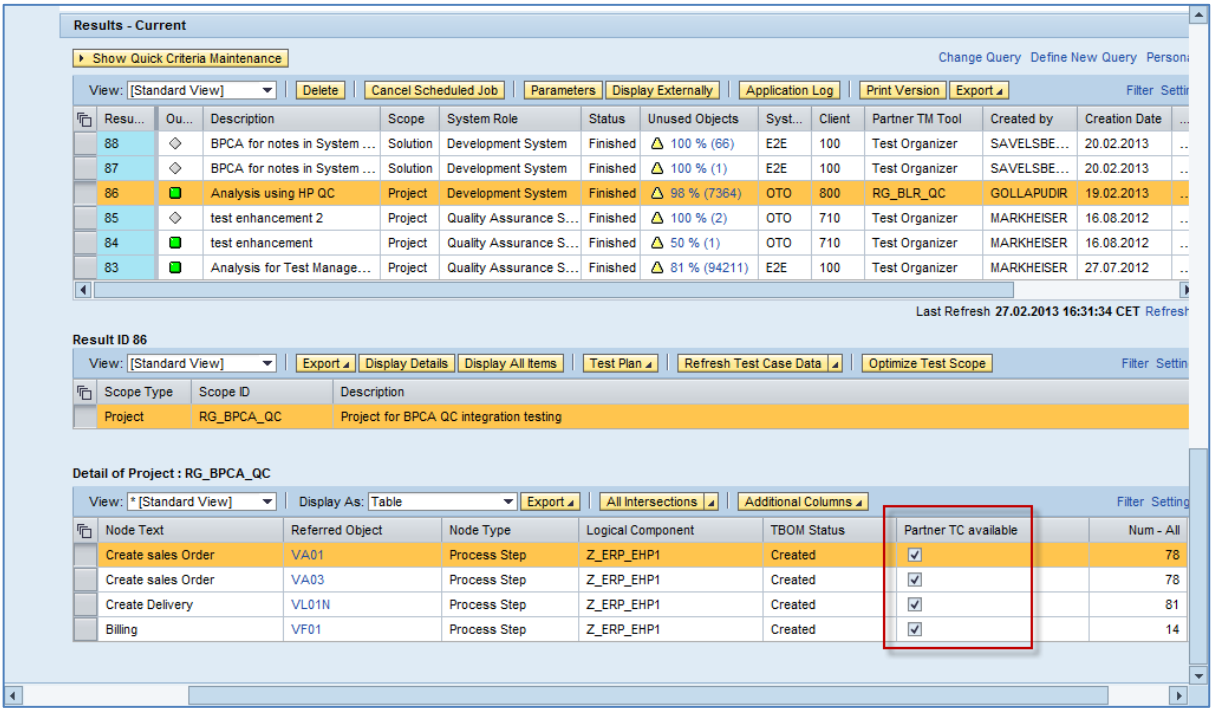
6.4 Use Case 1: Create a BPCA analysis based on Quality Center test content

Step 1: Create and run a BPCA analysis and select the registered “HP ALM” server



Step 2: BPCA will now get the test case information from HP Quality Center and run the impact analysis

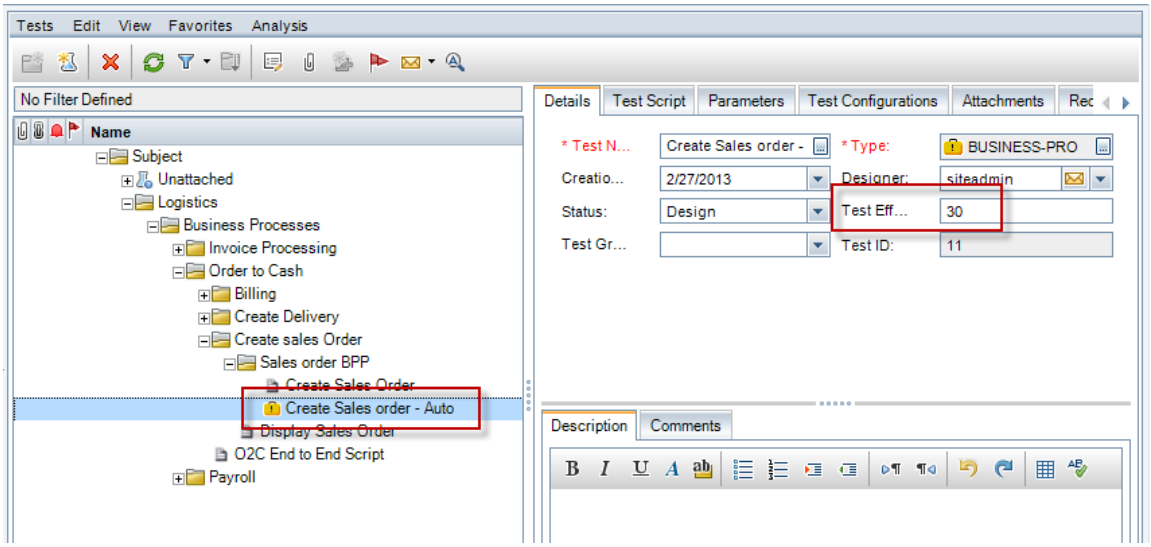
Step 3: See the “Partner TC available” column in analysis results which shows the test case information from HP Quality Center



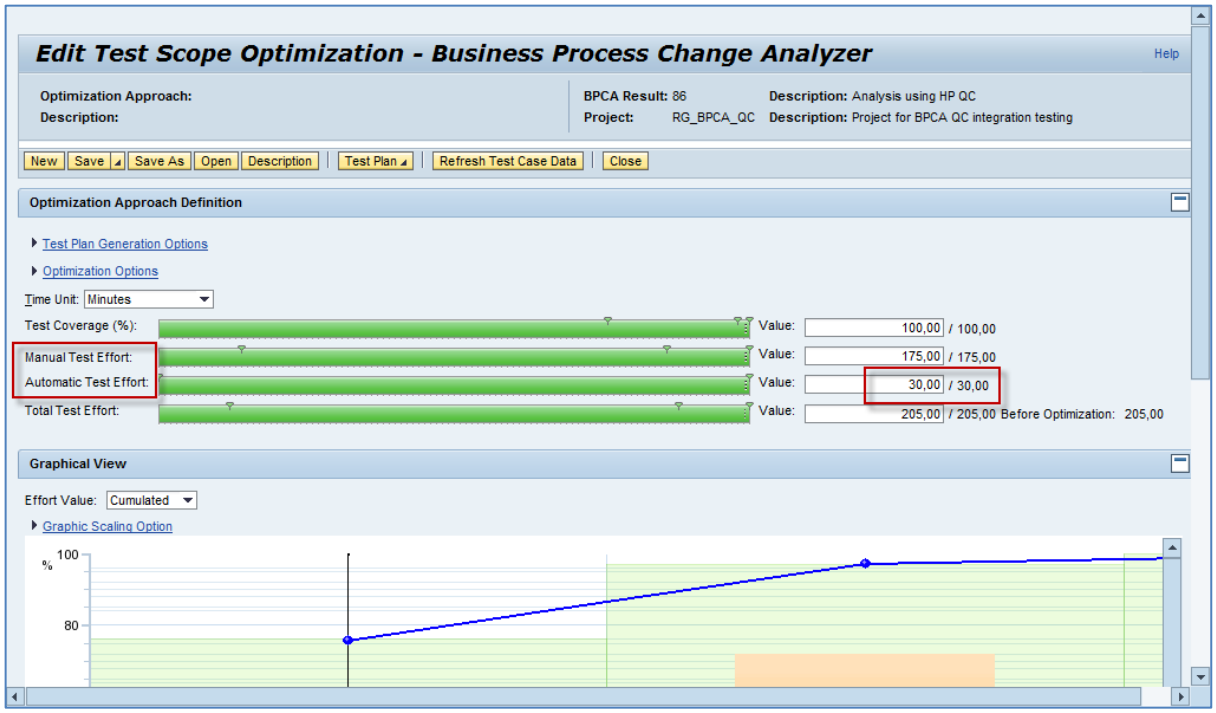
6.5 Use Case 2: Test Scope Optimization using Quality Center test content

Step 1: Test Scope Optimization in BPCA gets data about both manual and automated tests in HP ALM

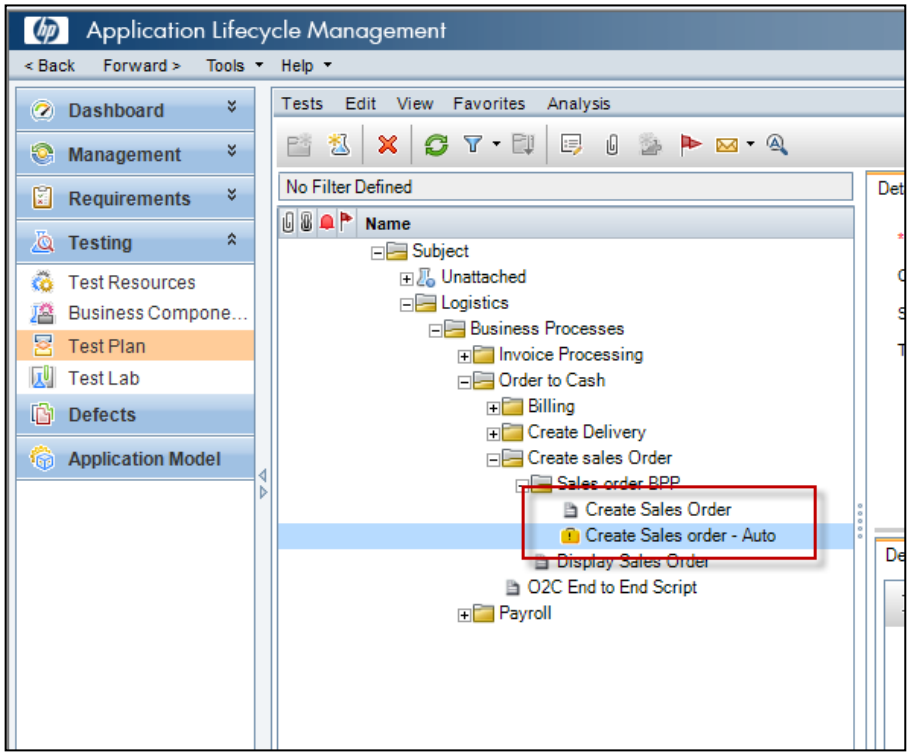
Step 2: You can maintain test effort in HP ALM Test Plan module



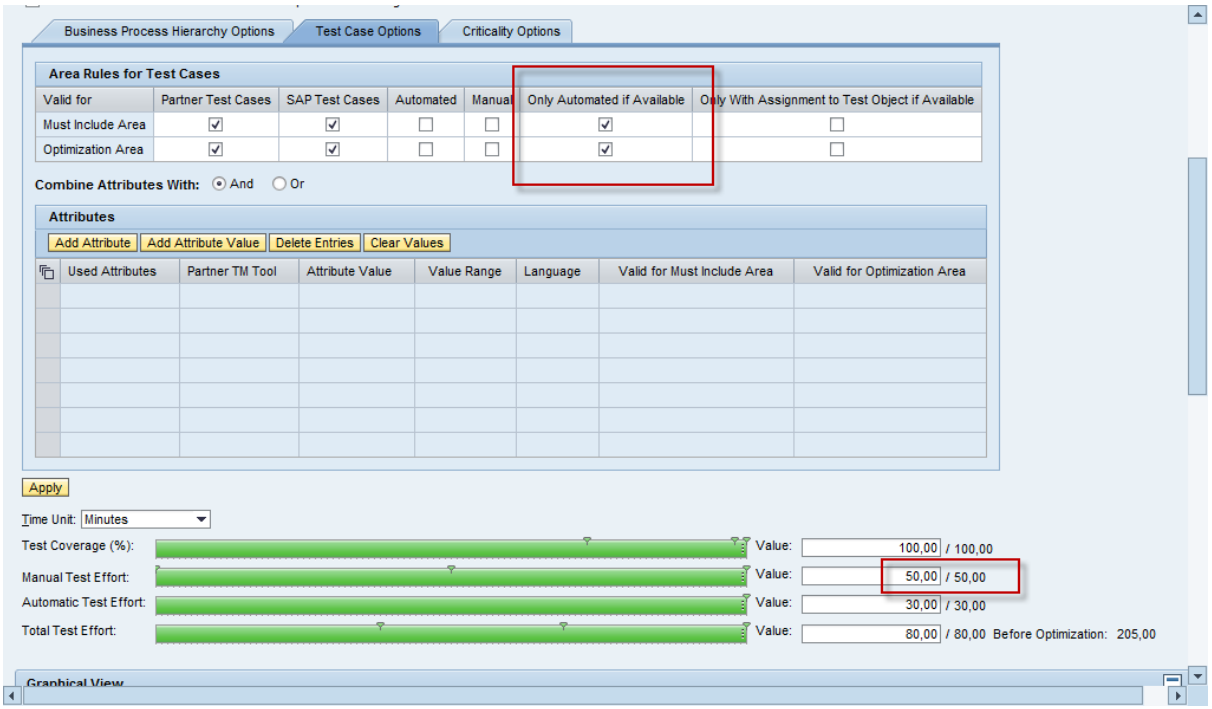
Step 3: Test effort information stored in HP ALM is used in BPCA.



Step 4: In HP ALM you have both automated tests and manual tests assigned to the same business process

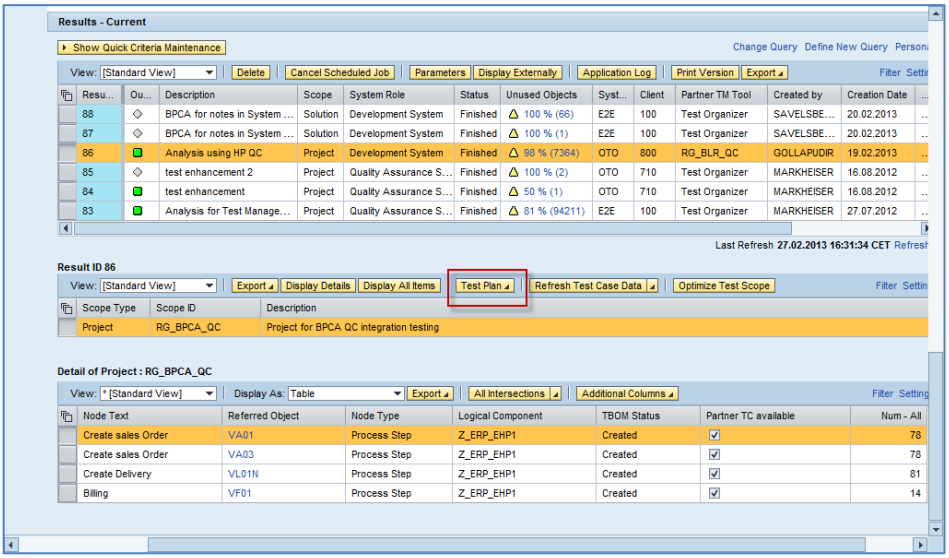


Step 5: The “Only Automated Tests If Available” option of BPCA test Scope optimization will chose only the automated tests from HP ALM

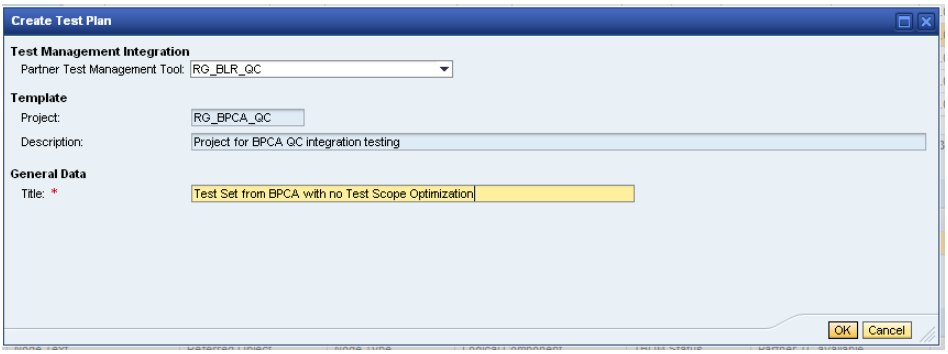


6.6 Use Case 3: Create/Extend Test Set in Quality Center

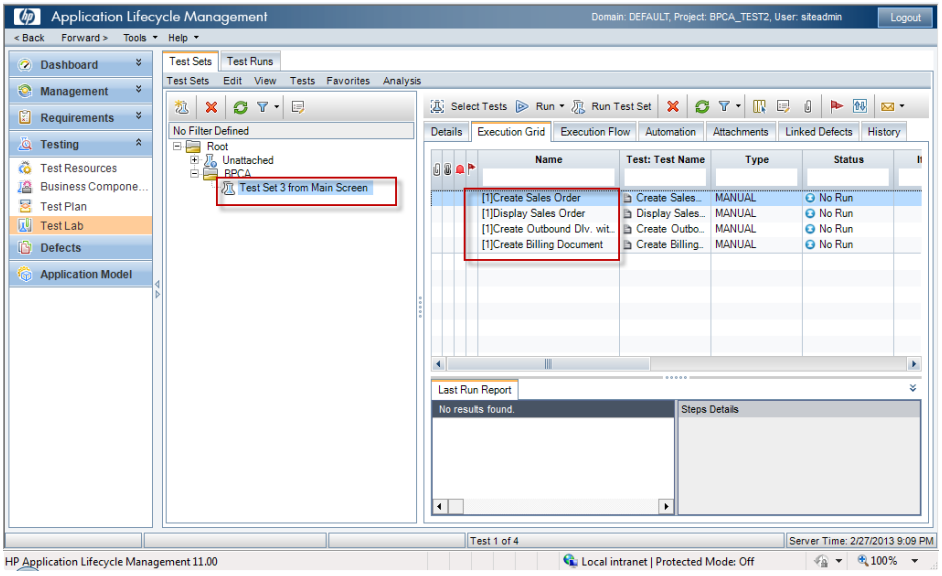
Step 1: To create a test set from the main results screen, click on “Create Test Plan” button



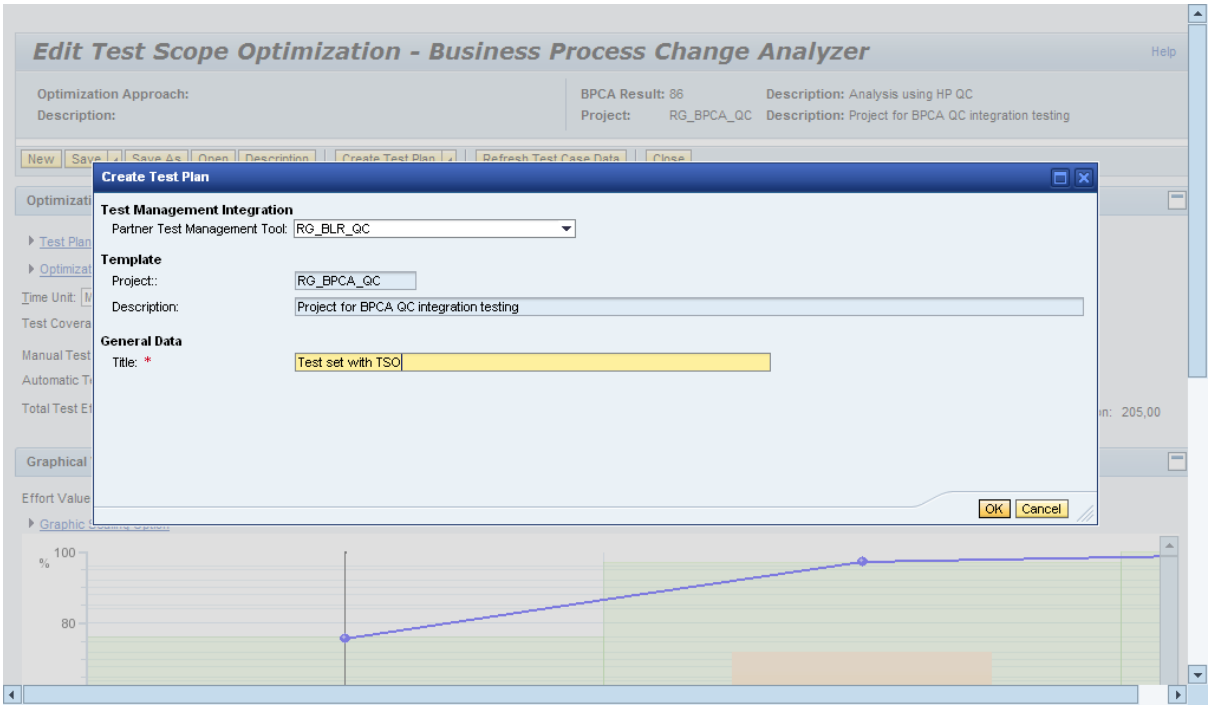
Step 2: In the popup enter the “test set” name and click “OK”



Step 3: A test set is then created in HP ALM for the impacted business processes



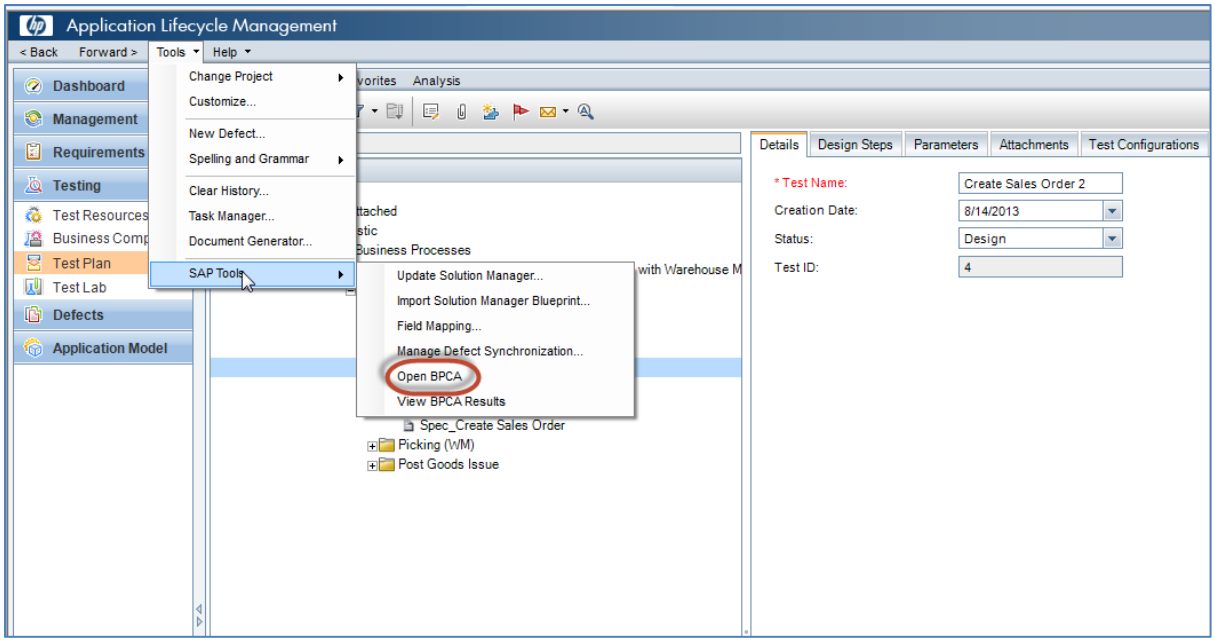
Step 4: To create Test Set from test scope optimization screen by clicking on “Create Test Plan” button.



Step 5: If a test set already exists a popup is shown if you want to extend a test plan.

6.7 Use Case 4: Trigger BPCA from Quality Center

Step 1: To trigger BPCA directly from Quality Center, Go to the “Tools” menu and go to “SAP Tools” and click on “Open BPCA”



Step 2: BPCA analysis creation screen will be launched in a new window

7. Setup UPL for BPCA semi-dynamic TBOMs

UPL is a Kernel based logging technology with no measurable performance impact available in any ABAP based system based on the core functionality of SAP Coverage Analyzer. It will be used to log all called and executed ABAP units like programs, function modules down to classes, methods and subroutines. UPL is a prerequisite for creating semi-dynamic TBOMs in SAP Solution Manager 7.1 SP10. It is very easy to activate via central Solution Manager 7.1. More information on UPL can be found in the following guide

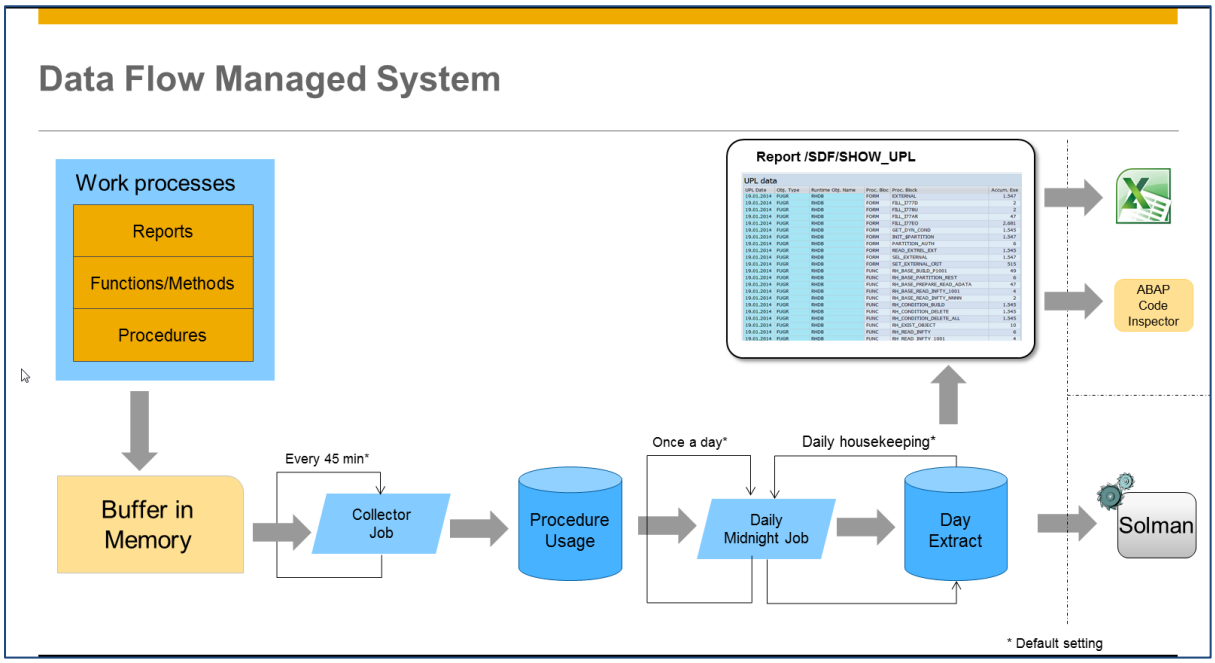
UPL Implementation Guide(SAP Service Marketplace)

7.1 UPL Data Flow – Managed System

UPL data is collected at a kernel level in the Managed System. There are 2 jobs which are important for UPL on the managed system.

- Collector Job – which runs every 45 mins to collect the data in the memory buffer and stores in the UPL logs.
- Daily Job - which runs once a day does the extract of the usage statistics on a daily basis. The data from this job is what is shown in the program /SDF/SHOW_UPL

Once the daily job is finishes, the extractor framework from SAP Solution Manager will pull the data from the Managed System into the SAP Solution Manager BW info cube.



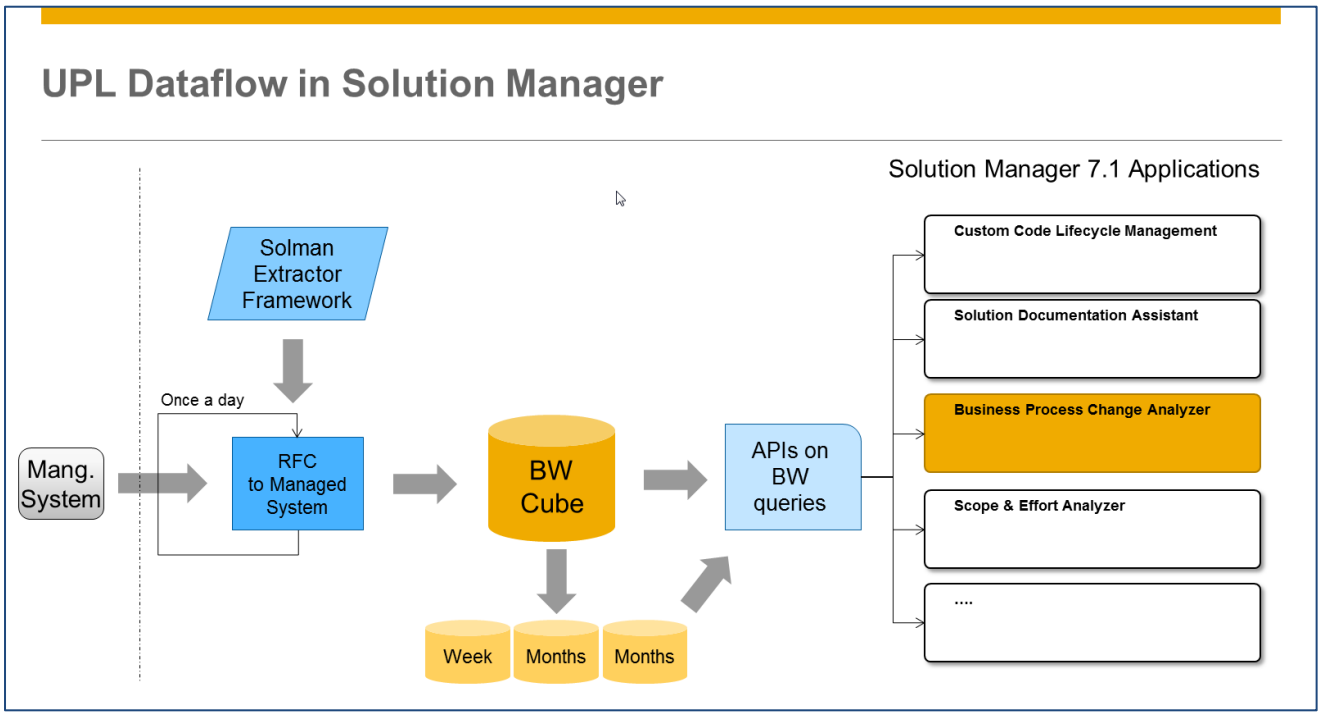
Here are some technical details for UPL in the Managed System

- **Buffer Memory used by UPL:** Profile parameter ABAP/COV_BUFFER_SIZE ca. 40 MB Segment COVERAGADM
- **Collector job used by UPL(runs every 45 mins):** RSCRC_TRIGGER_COLLECT Report RSCVR_TRIGGER_COLLECT
- **Procedure Usage Table for UPL :** COVRES
- **Daily Job for UPL (runs once a day):** /SDF/UPL_PERIODIC_EXT_JOB Report SDF/UPL_PERIODIC_EXTRACTOR

- **Day Slices Table used by UPL:** /SDF/UPL_LOG

7.2 UPL Data Flow – SAP Solution Manager

The Extractor Framework in SAP Solution Manager system uses the RFC connection to the Managed System to collect the UPL data from the Managed System and store in an "aggregated" format in BW Cube named "0SM_UPL". The extractor is called "Custom Code UPL Extractor". Once the data is available in the BW Cube, pre-defined queries allow different applications like BPCA to access the UPL data.



7.3 Enable UPL on Managed System

7.3.1 Prerequisites for the Managed System

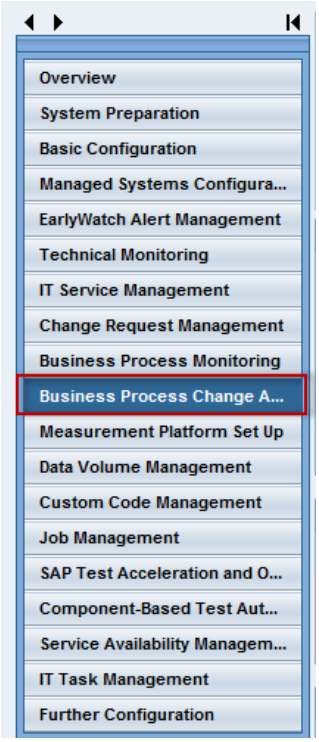
- Mandatory
  - SAP NetWeaver 7.01 SP10 or 7.02 SP9 (= SAP ERP 6.0 EHP4 or SAP ERP 6.0 EHP5)
  - ST-PI 2008_1_700 SP4 or SP5 (with SAP Note 1683134) / or ST-PI 2008_1_700 SP6 or higher
  - Kernel 720 Patch 94 or higher

7.3.2 Activate UPL and setup data collection from SAP Solution Manager

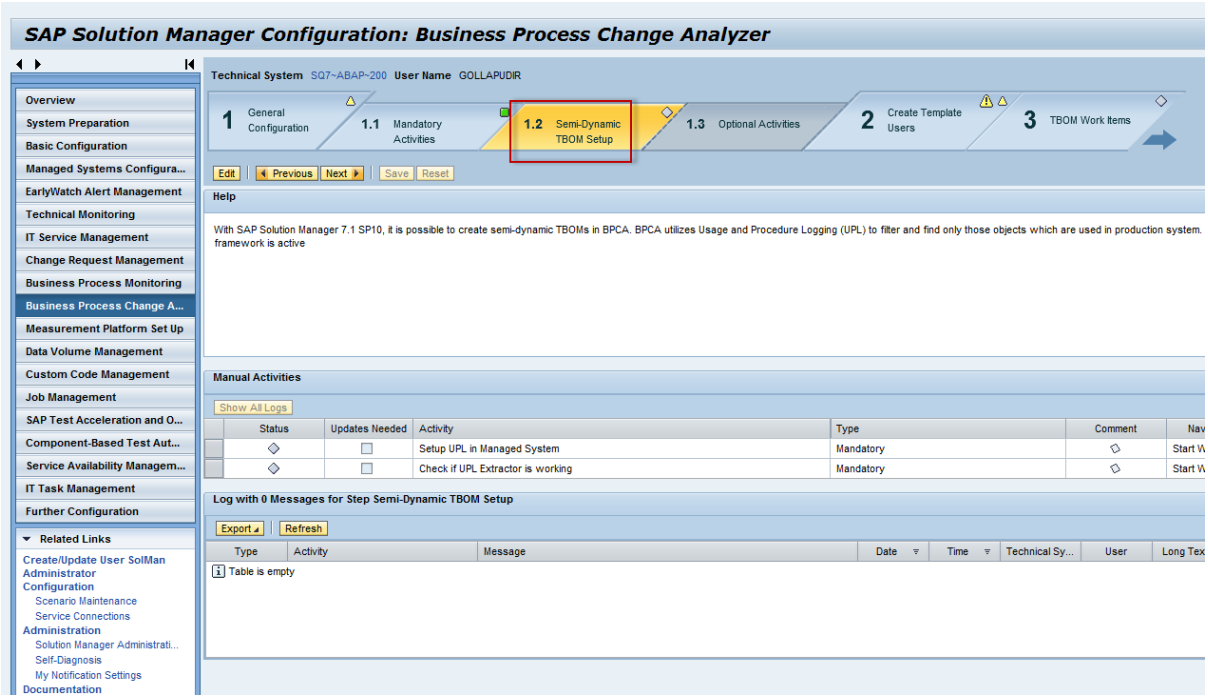
For BPCA to be able to use the UPL data, the data from the managed system has to come into SAP Solution Manager BW Cubes. The extractor framework has to be setup in order to collect the UPL data. With SAP Solution Manager 7.1 SP10, you can activate UPL and also setup the Extraction Framework using SOLMAN_SETUP transaction.

- On your SAP Solution Manager system go to SOLMAN_SETUP transaction

- Go to “Business Process Change Analyzer” section

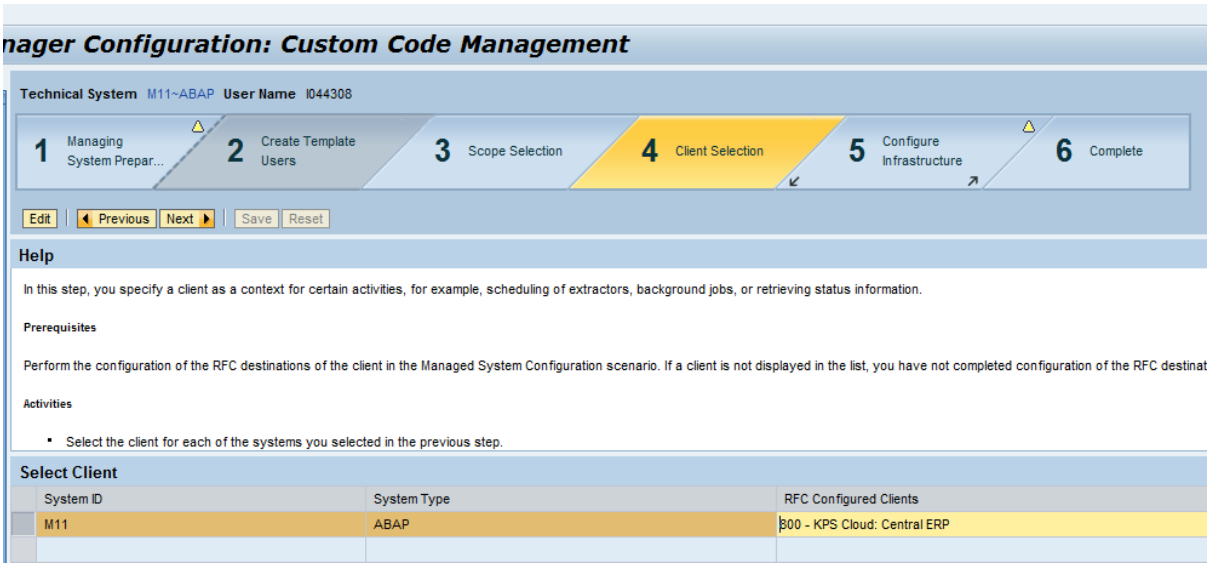


- Go to Step 1.2 – “Semi-dynamic TBOM setup”

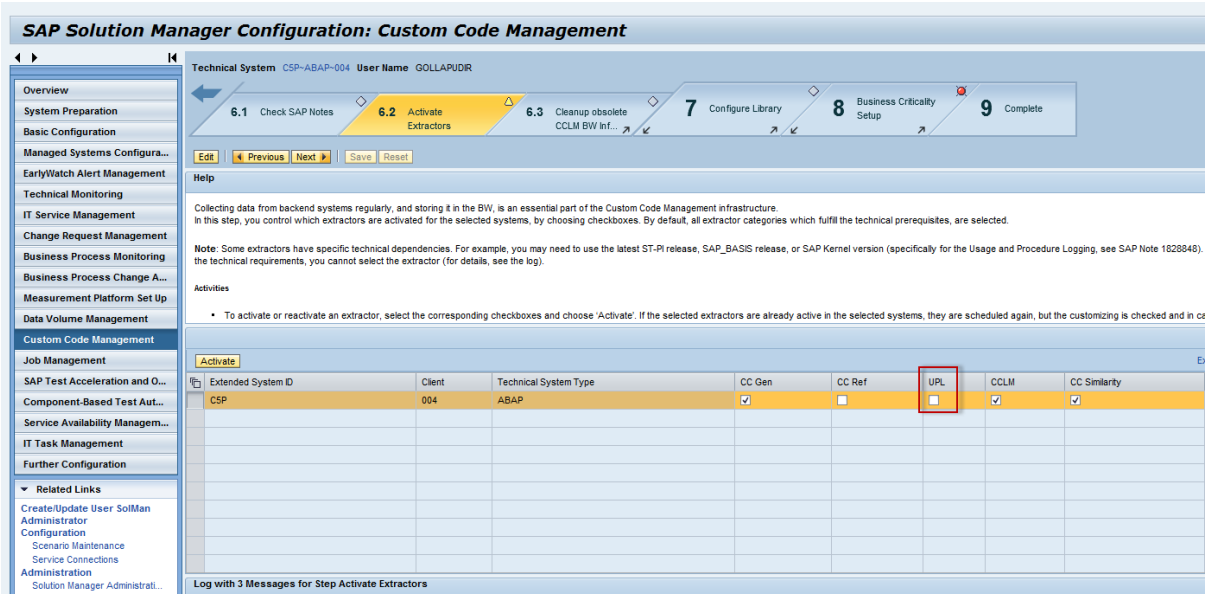


- Click on “Edit”
- Click on “Start Webdynpro” for the step – “Setup UPL in Managed System”
- You will be re-directed to the UPL setup section
- You need to complete all steps in this wizard to get the BW Content Activation for UPL (Usage and Procedure Logging)

- Section 3 you will create communication users for collecting the UPL data
- Section 4 and 5 you will select the system were UPL is active



- Step 6.2 is the most important step where extractor framework is activated for the given managed system
- You need select the check box “UPL” and click on “Activate”. The following will be done as part of this step
    - UPL status is checked and UPL is activated in the Managed System if it is not yet active
    - UPL Daily Job is created in the managed system - SDF/UPL_PERIODIC_EXT_JOB
    - UPL collector job is created in the Managed System - RSCRC_TRIGGER_COLLECT
- If you are going to use “Scope and Effort Analyzer” in SAP Solution Manager 7.1 SP11, then you need to activate the collection of data for Custom Code Management as well – please activate “CC Gen” , “CC Ref” and “CCLM” extractors as well.



- You can optionally schedule jobs for UPL data collection using Section 6.3

Note

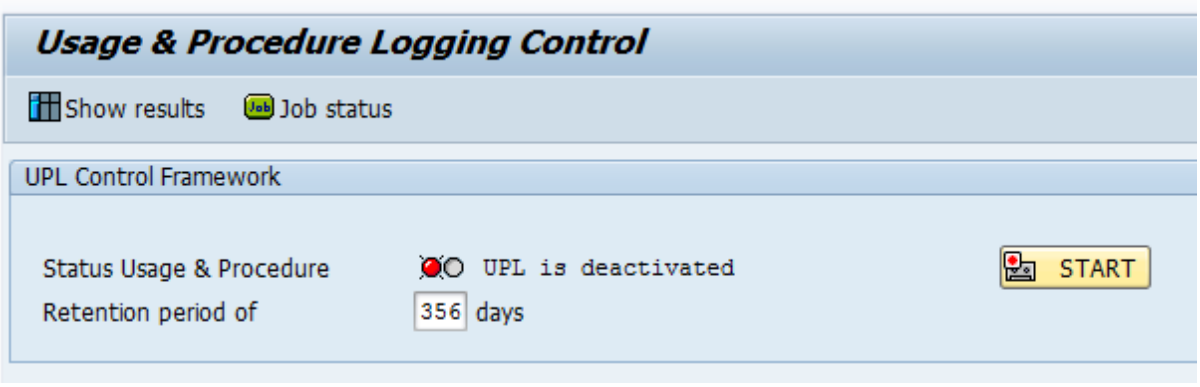
- *For SAP Solution Manager 7.1 SP09 systems the following notes might be useful*
    - *If the above checkbox for UPL in SOLMAN_SETUP section 6.2 is inactive use SAP Note: 1901799*
    - *If you face any issues with UPL Activation via SAP Solution Manager, you can check if the below SAP Note can help use SAP Note 1895870*
    - *Issues with RFC destination during UPL activation please refer to SAP Note: 1901171*

7.3.3 Activate UPL (Before SP10 of SAP Solution Manager)

Step 1: Open transaction SE38 and start the report program “/SDF/UPL_CONTROL”

Step 2: Enter the retention period

Step 3: Click “start”



Step 4: UPL is now active on your system

This screen indicates that UPL is active. UPL can be stopped by pressing button “STOP”.

Ensure that SAP Note 1822227 is implemented to be able to change the data retention time.

7.4 UPL Troubleshooting

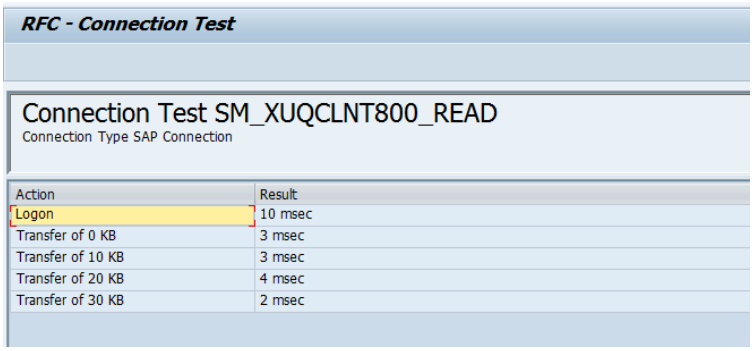
UPL data is required for creating semi-dynamic TBOMs as described in the section 4.1.6. UPL data is collected from the managed system and is stored in the BW info-cube of SAP Solution Manager. The cube that is used by BPCA is called "0SM_UPL" (from SP11 of SAP solution Manager 7.1, the cube "0SM_UPL_M" is used). The basic setup of UPL is described in the section **Error! Reference source ot found.**. This section deals with some of the possible troubleshooting scenarios for UPL data collection.

7.4.1 How to check READ RFC used for UPL

Step 1: Go to SM59 transaction

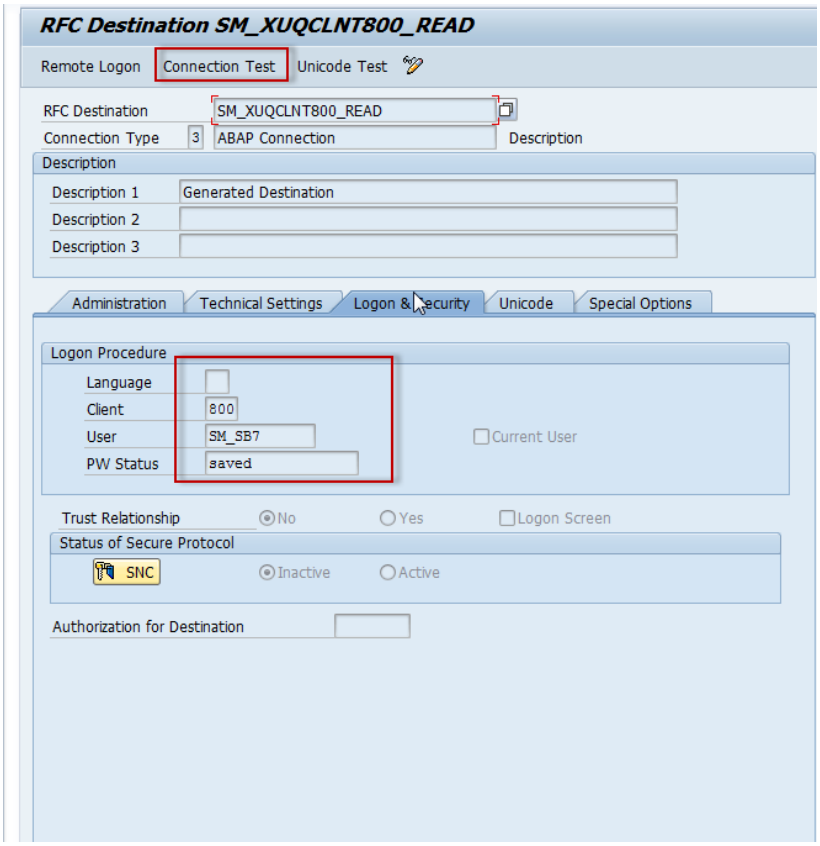
Step 2: Find the READ RFC destination for your managed system – ex: SM_**XUQ**CLNT**800**_READ

Step 3: Open the READ RFC destination and click on Connection Test and check if all test results are ok



Step 4: Go to "Logon and Security" tab

Step 5: Ensure a user/password is entered and is working correctly



7.4.2 How to check UPL status and data from Managed System

BPCA uses UPL data for generating semi-dynamic TBOMS from SAP Solution Manager 7.1 SP10. BPCA doesn't read the data directly from Managed System, but used BW info-cubes. This section explains how to check if UPL has been activated in the Managed System and also to see the UPL data in the managed system itself.

The below procedure helps in troubleshooting UPL directly on the Managed System

Step 1: Open transaction SE38 and start the report program "/SDF/UPL_CONTROL"

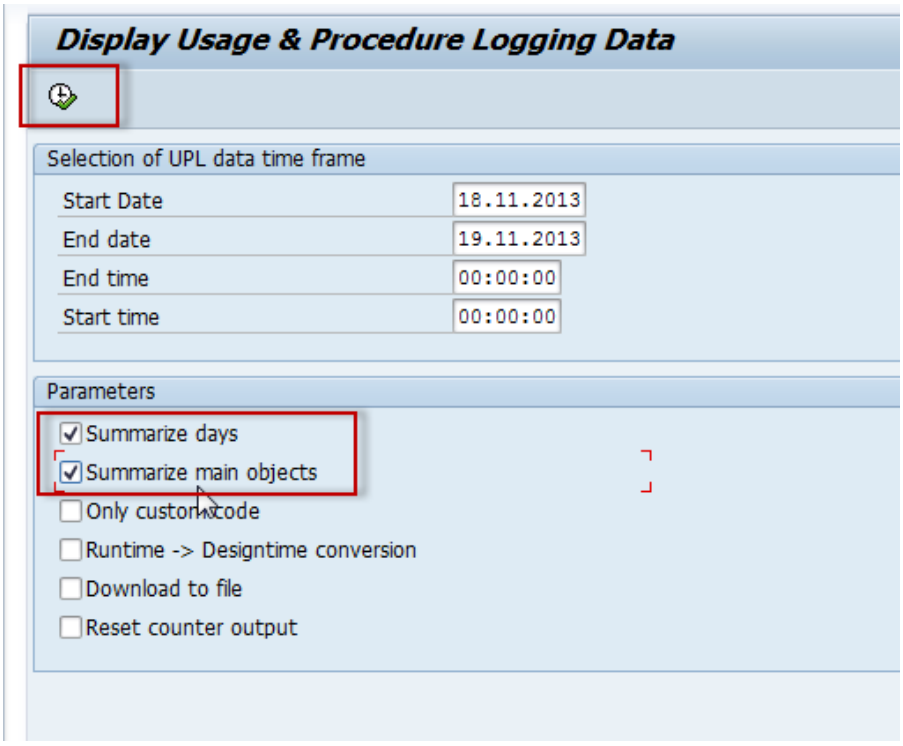
Step 2: Ensure that UPL status is "green" – "UPL recording is activated"

Step 3: Open transaction SE38 and start the report program "/SDF/SHOW_UPL"

Step 4: Enter the date range based on the dates for which you need to troubleshoot. For example if you want to check if UPL data is available for the last week, enter the date range accordingly

Step 5: Select display options – "Summarize Days" and "Summarize main objects" – this will make the query run faster

Step 6: Click on execute icon



Step 7: Output shows the UPL data collected for the given date range.

Step 8: Important Columns are showing the following data

a. Date: All list entries with the same UPL date were executed at this date.

b. Time: Unused at the moment. Information at which time the UPL data was written.

c. Object Type: Describes the type of objects. PROG for programs frames, etc.

d. Object Name in Object Directory: Name of the surrounding ABAP repository object.

e. Tcode/Program: Name of the ABAP Include containing the ABAP procedure.

f. Type: Type of ABAP processing block. You are able to distinct between executions of function modules, class methods, selection screens, user exits, etc.

g. Name of Processing Block: The real name of the ABAP procedure.

h. Accumulated Executions: Number of real executions.

Date	Changed...	Object Type	Object Name	Tcode/program	Type	Name of Processing Block	Accum. Executions
18.11.2...	00:00:00	PROG	/1BCDWB/DB/SDF/CMO_T_40	/1BCDWB/DB/SDF/CMO_T_40			6
18.11.2013	00:00:00	PROG	/1BCDWB/DBE071	/1BCDWB/DBE071			5
18.11.2013	00:00:00	FUGR	/1BCDWBEN//BDL/EN0000	/1BCDWBEN/SAPL/BDL/EN0000	FU...	DEQUEUE_/BDL/CUST	2
18.11.2013	00:00:00	FUGR	/1BCDWBEN//BDL/EN0000	/1BCDWBEN/SAPL/BDL/EN0000	FU...	DEQUEUE_/BDL/ENQ_TASK	17
18.11.2013	00:00:00	FUGR	/1BCDWBEN//BDL/EN0000	/1BCDWBEN/SAPL/BDL/EN0000	FU...	DEQUEUE_/BDL/ESRVDEF	203
18.11.2013	00:00:00	FUGR	/1BCDWBEN//BDL/EN0000	/1BCDWBEN/SAPL/BDL/EN0000	FU...	DEQUEUE_/BDL/ID	1
18.11.2013	00:00:00	FUGR	/1BCDWBEN//BDL/EN0000	/1BCDWBEN/SAPL/BDL/EN0000	FU...	DEQUEUE_/BDL/SESSION	15
18.11.2013	00:00:00	FUGR	/1BCDWBEN//BDL/EN0000	/1BCDWBEN/SAPL/BDL/EN0000	FU...	DEQUEUE_/BDL/TASK_SCHED	30

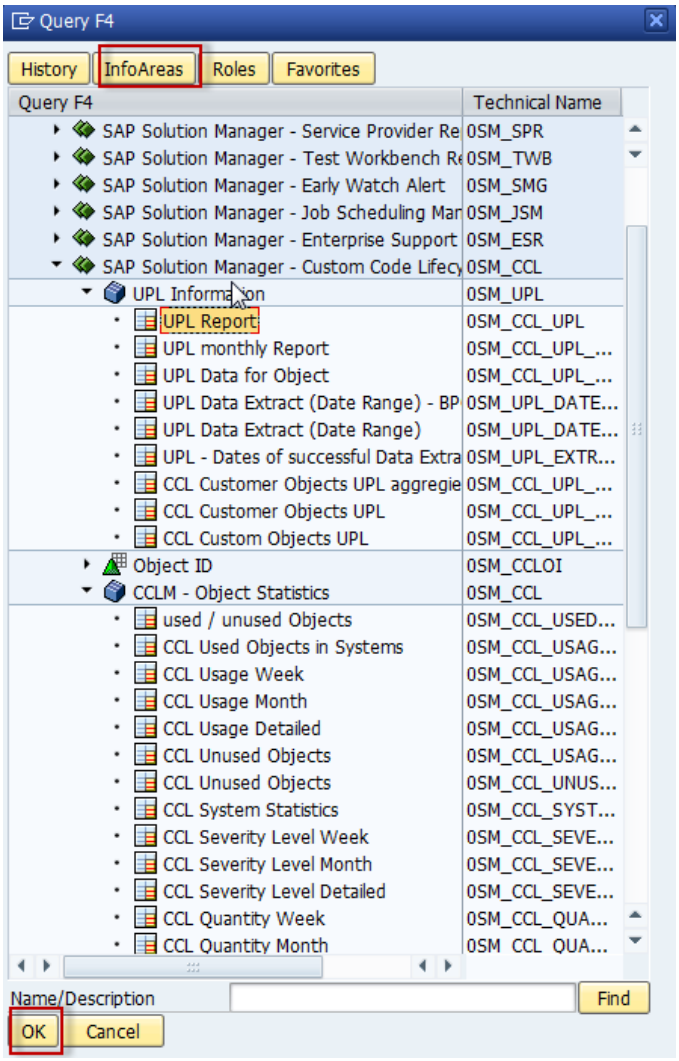
7.4.3 How to view UPL data in SAP Solution Manager

BPCA reads the UPL data from the info cube 0SM_UPL and is accessed using the Query 0SM_CCL_UPL as of SAP Solution Manager 7.1 SP10 and the query 0SM_CCM_UPL_M as of SAP Solution Manager 7.1 SP11. Below are the steps to view the data available in the info cube on the Solution Manager system.

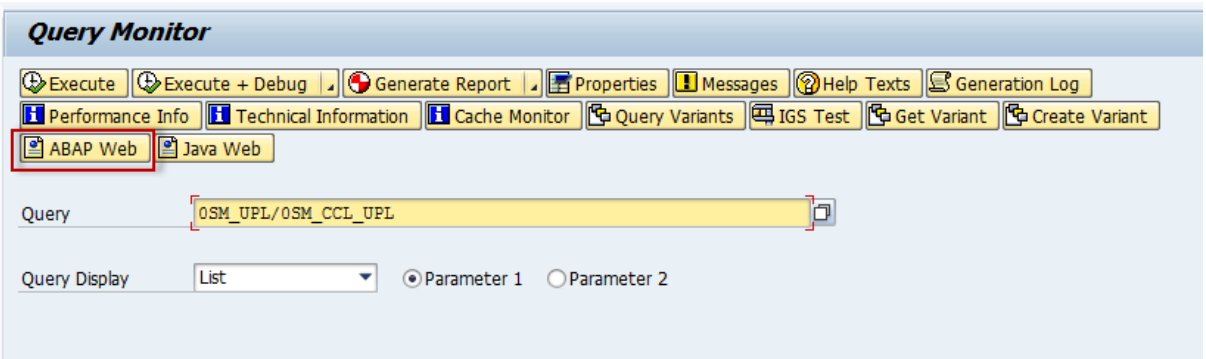
Step 1: In SAP solution Manager go to transaction: RSRT

Step 2: Enter the query name or select from F4 help. Click on “InfoAreas” button.

Step 3: Search for the Query in the info areas in the F4 help



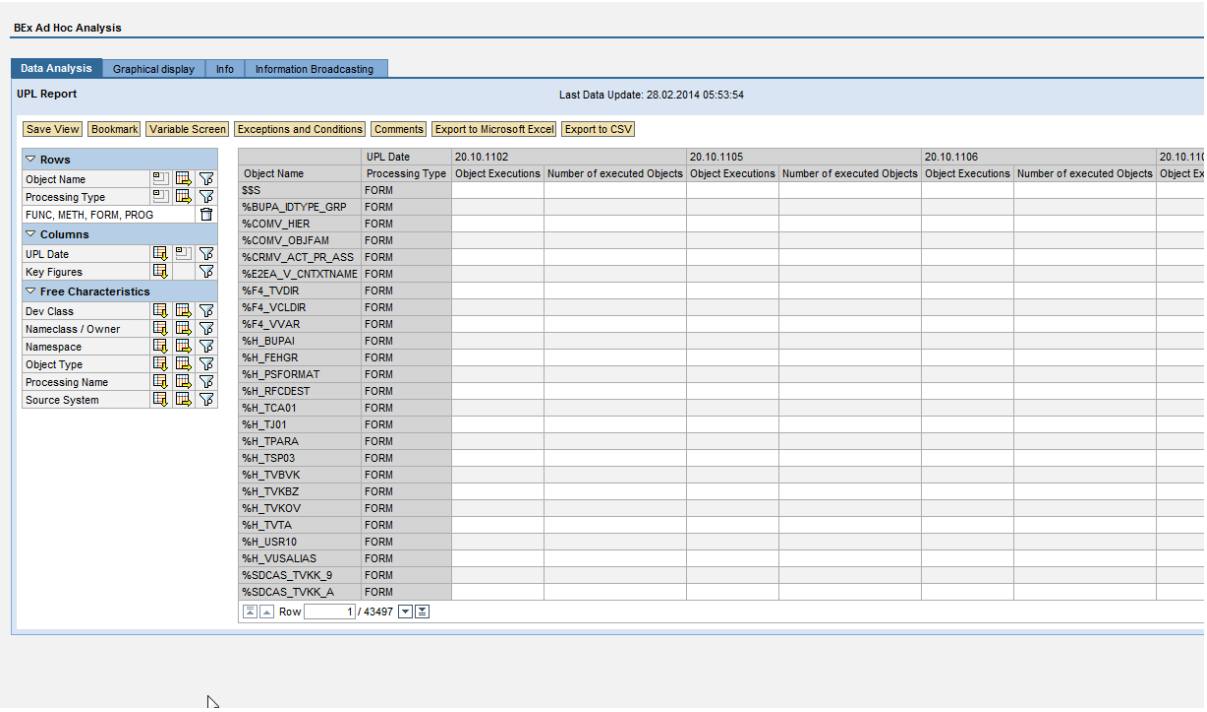
Step 4: Click on “ABAP Web”



Step 5: A web browser window opens with the BW query

Step 6: Enter the SAP Solution Manager credentials if prompted

Step 7: Query is opened in a browser (please note that it might take a long time to open the query)



7.4.4 How to check UPL data collection job is working correctly

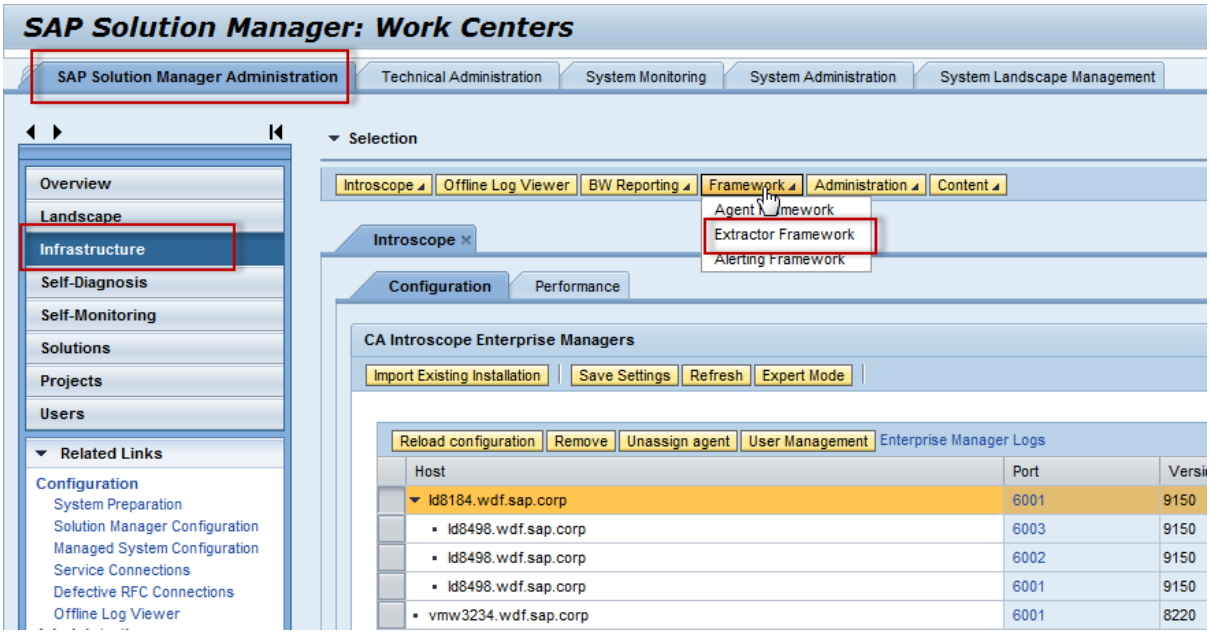
UPL data is collected in the Info cube using the SAP Solution Manager Extraction Framework. The setup of this extractor framework is done as part of the SOLMAN_SETUP configuration as described in 7.3.2.

You can view the status of the extractor framework from SAP Solution Manager work center.

Step 1: Go to SAP Solution Manager Administration work center

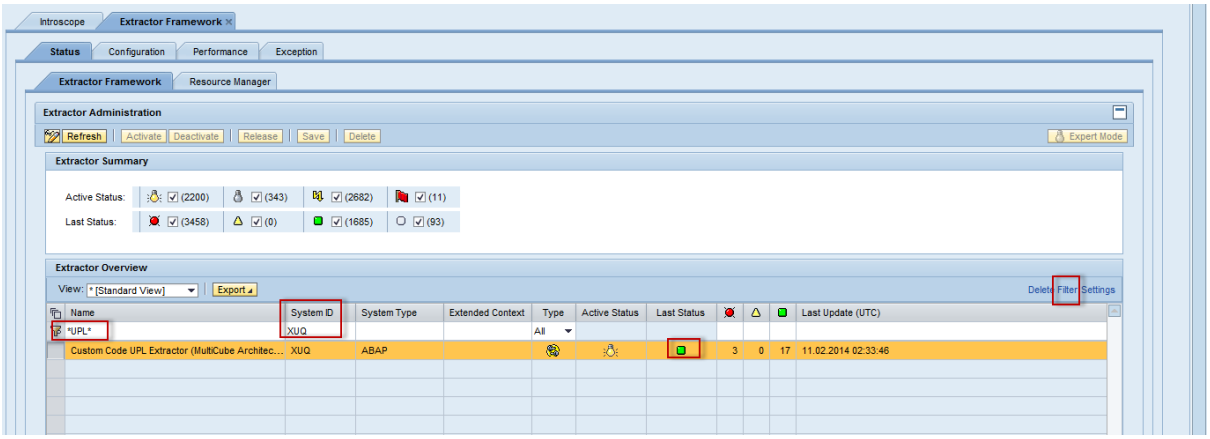
Step 2: Go to “Infrastructure”

Step 3: Select “Extraction Framework”

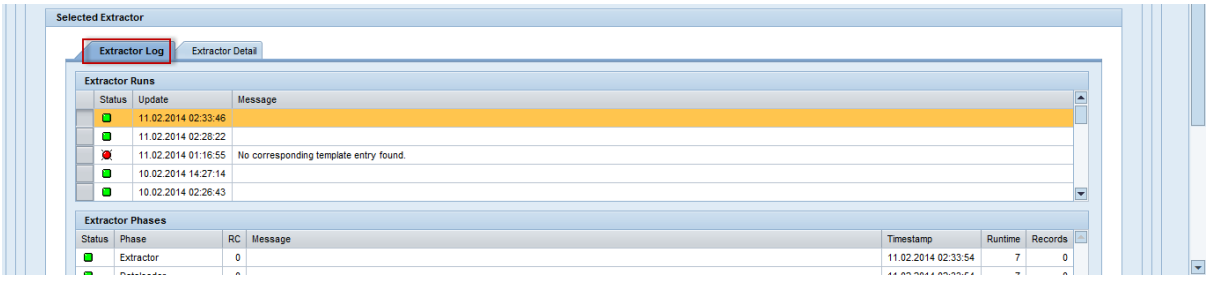


Step 4: Enable filter and select the SID and in the name field enter “*UPL*”

Step 5: Ensure the status of the extractor is green



Step 6: Select the extractor and see the details below under “Extractor log”

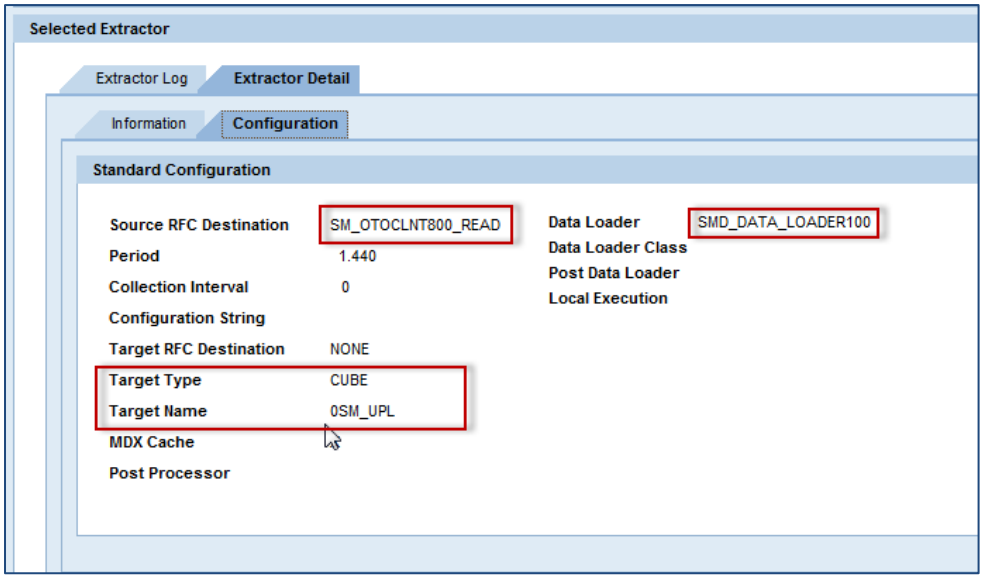


Step 7: You can get all details of the different scheduled collection logs.

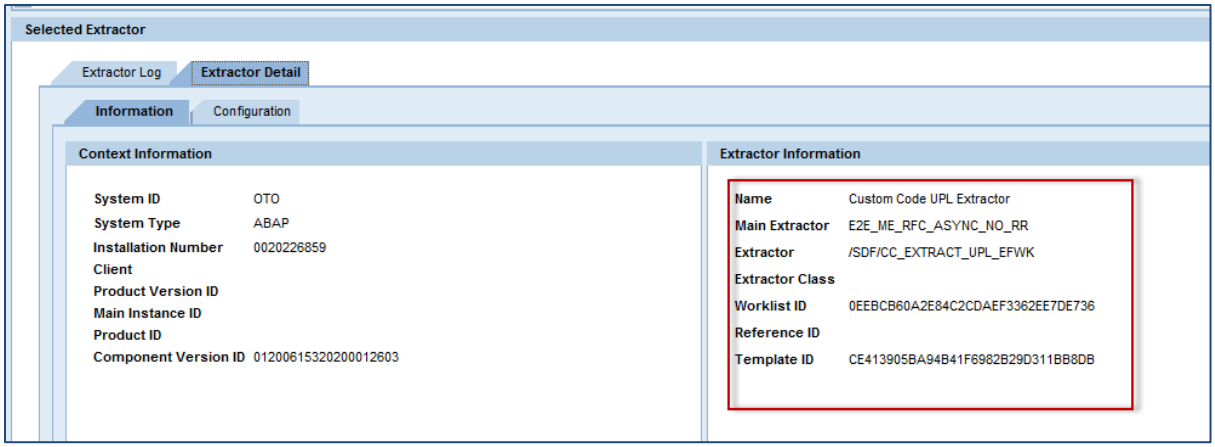
Step 8: Click on “Extractor Detail” to get the technical details about the extractor job

a. Source RFC destination used to connect to Managed System

b. Destination in BI where the data is stored



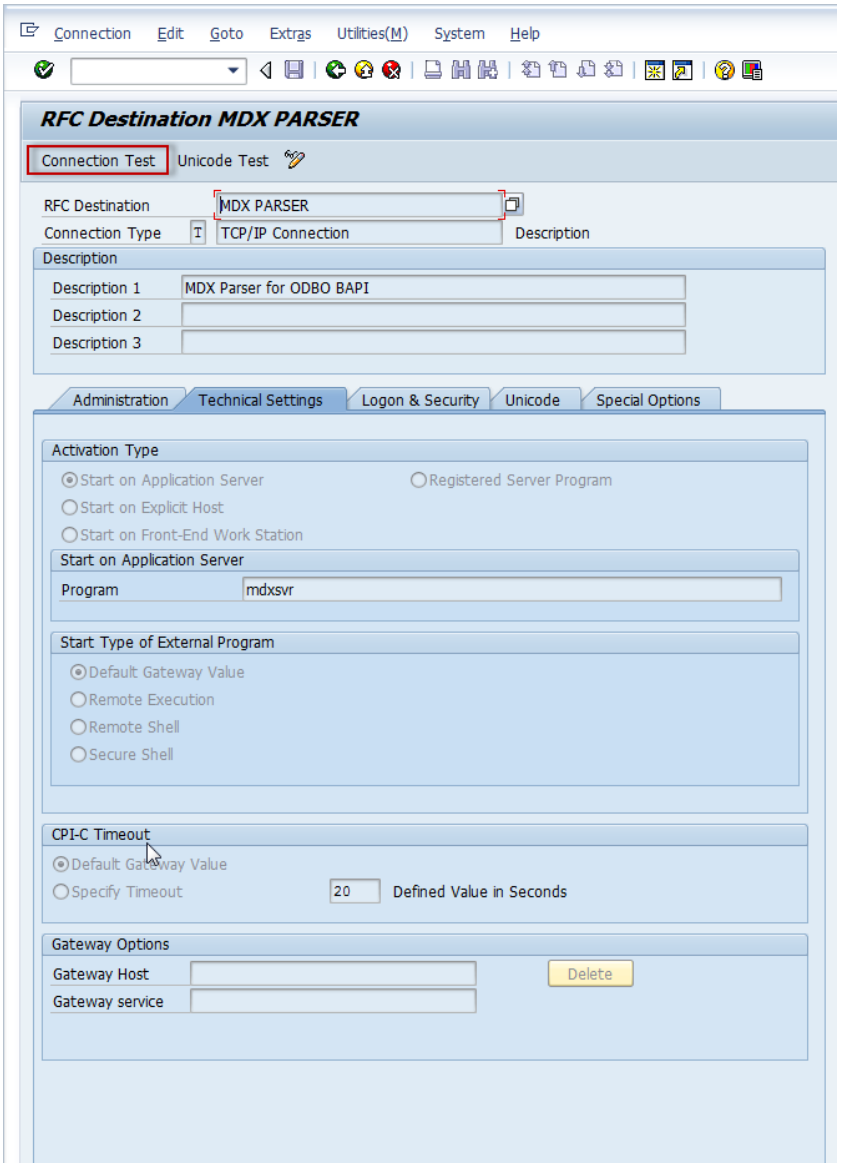
c. Function module of the BI data loader



7.4.5 MDX Parser is not working

One of the issues for reading UPL data is with MDX Parser

- UPL uses MDX parser so you need to ensure the MDX parser RFC destination is working correctly in SM59



- Following notes help in resolving issues with MDX parser
    i. **SAP Note 1032461 - MDX parser does not start**
    ii. **SAP Note 336693 - Replacing or installing librfc32.dll on Microsoft Windows**

8. Appendix

8.1 How to evaluate transactions and TBOMs

Step 1: Go to Test Management work center in Solution Manager using the Transaction SOLMAN_WORKCENTER.

Step 2: Go to Test Preparation view. Select the "projects" sub-view.

Step 3: Select the project "BPCA_TRN"

Step 4: Click on the link "Evaluate". Click “open” button in the file download dialog box. After clicking “allow” in SAP GUI security dialog box, we will be taken to the “Evaluate Transactions/ TBOMs/ Test Cases” screen for the project "BPCA_TRN" in SAP GUI.

Step 5: The project "BPCA_TRN" will be pre-selected in the report parameters screen

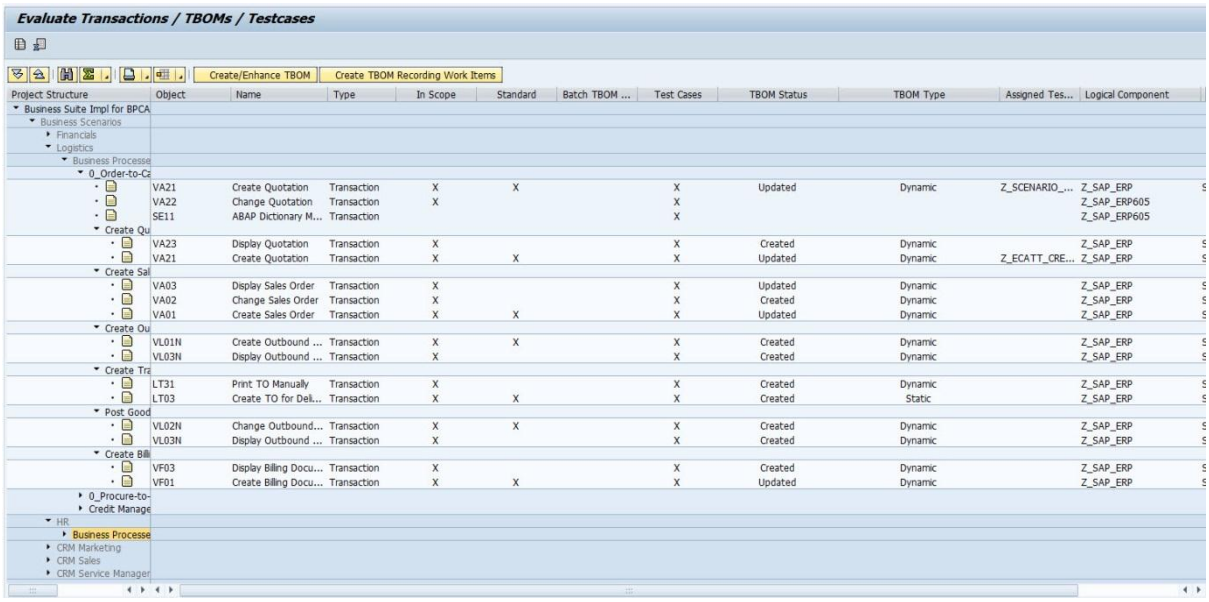
Step 6: Click on the "Extended Attribute Selection" button.

Step 7: Click on "Customer Attributes"

Step 8: Enter the "Business Process Priority" value as "1". This will restrict the evaluation to only those business processes which have the priority as "1".

Step 9: Execute the report by clicking on the button

Step 10: Navigate to the appropriate business processes to be able to see the status of TBOMs created for different business process steps. Below screenshot shows the evaluation for the project "BPCA_TRN".



Step 11: We observe that for all business process steps TBOM got created/updated. In case for a business process step TBOM is not generated, we need to generate a TBOM as described in the next section which explains how to create a TBOM for the step "Create Sales Order"

8.2 Saving a BPCA analysis result Variant

We can save the parameters for a BPCA analysis as a "Variant". This variant can be used to then pre-fill the parameters for a BPCA analysis. In this section we will understand the procedure to create

a BPCA analysis variant and how to use the variant in creating a new analysis result. In the example below, we will store the change event scope details and the parameters for the business process hierarchy node scope as part of a new variant.

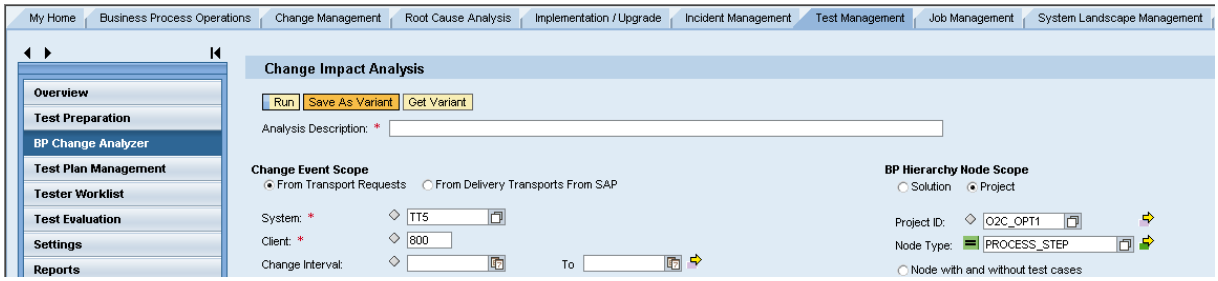
Step 1: Go to Test Management work center in Solution Manager using the Transaction SOLMAN_WORKCENTER

Step 2: Go to BP Change Analyzer View. This view will show existing/previous analysis results which were created and also allow us to create a new result of BP Change Analysis

Step 3: Enter the following details

- Change Event Scope
  - System : TT5
  - Client : 800
- BP Hierarchy Node Scope
  - Select "Project" option
  - Project ID: "O2C_OPT1"
  - Node Type: "PROCESS_STEP"
- Select the option "Nodes with test cases only"

The following screenshot shows the values as entered



Step 4: Click on "Save As Variant"

Step 5: In the "New / Display Variants" screen, enter the following

- Variant ID: "O2C_TT5_Var1"
- Variant Text : Variant for TT5 O2C scenario

Step 6: Click on "Save"

Step 7: Now you have a variant with pre-filled parameters for the system TT5, Client 800, With O2C_OPT1 project and the node type as "PROCESS_STEP" and nodes filtered for only those nodes which have test cases associated with them.

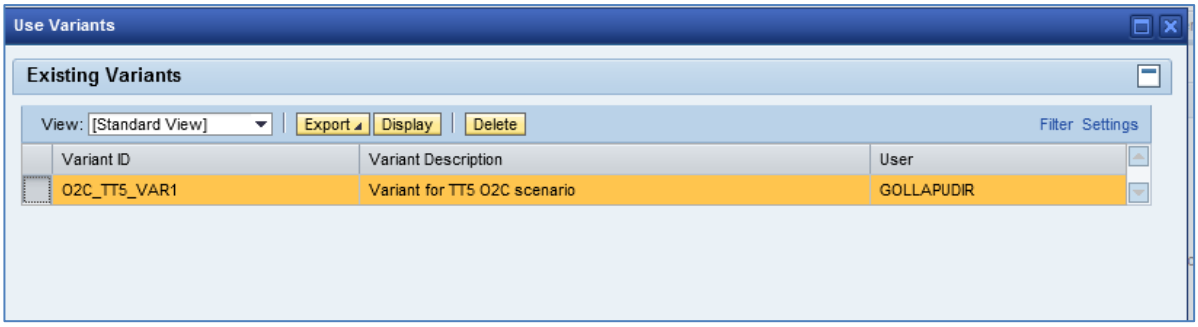
The below procedure explains how you can use an existing variant to create a new BPCA analysis result.

Step 1: Go to Test Management work center in Solution Manager using the Transaction SOLMAN_WORKCENTER

Step 2: Go to BP Change Analyzer View. This view will show existing/previous analysis results which were created and also allow us to create a new result of BP Change Analysis

Step 3: Click on "Get Variant" button. A list of all available variants will be shown. (You can also delete or display an existing variant in this screen)

Step 4: Select the Variant "O2C_TT5_Var1"

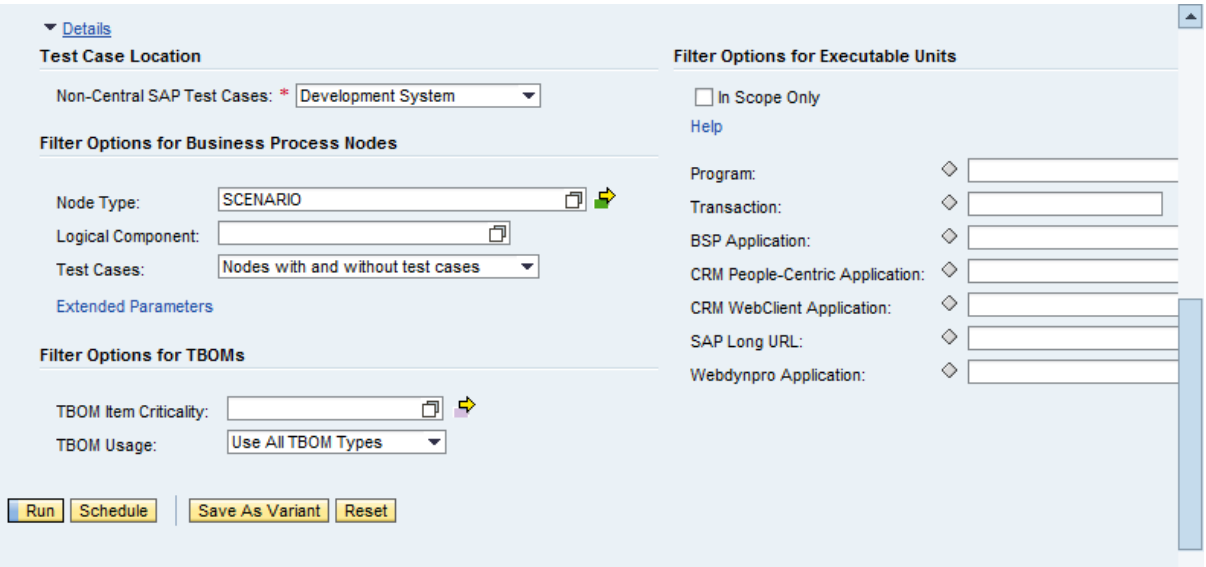


Step 6: Click "OK" button

Step 7: The parameters from the variant will be pre-filled in the Analysis Result form.

8.3 Executable options

While running a change impact analysis using BPCA, there are a few executable options as shown in the screenshot below which can be seen when you click on the “Details” link. This section explains the significance of each of these parameters



1. Logical Component: If you have selected a Solution Manager project which business processes documented which run on different systems represented by different logical components. You can use this parameter to filter/select the logical component which you want to use for this analysis run. For example, if a Solution Manager Project has both ERP and SCM business scenarios documented and you want to run an analysis only for the ERP changes, then you can select the logical component representing your ERP system, BPCA analysis will then run only on the ERP scenario.
2. Transaction: If you want to select/filter only a sub set of transactions which you want to use in the change impact analysis, you can select that transaction using this parameter.
3. In Scope Only: If this option is selected, only those business processes which are marked as “in scope” are used in the change impact analysis.
4. TBOM Type Selection (Dynamic/Static/All): If you want the change impact analysis to be done using only dynamic TBOMs, you can select “Use Dynamic TBOM only”. Similarly you can restrict the analysis to either static TBOMs only or to all types of TBOMs.
5. TBOM Item Criticality: This parameter allows you to select the TBOM criticality values which you want to use in this analysis run. Only those TBOMs with selected criticality values will be used in this analysis run.

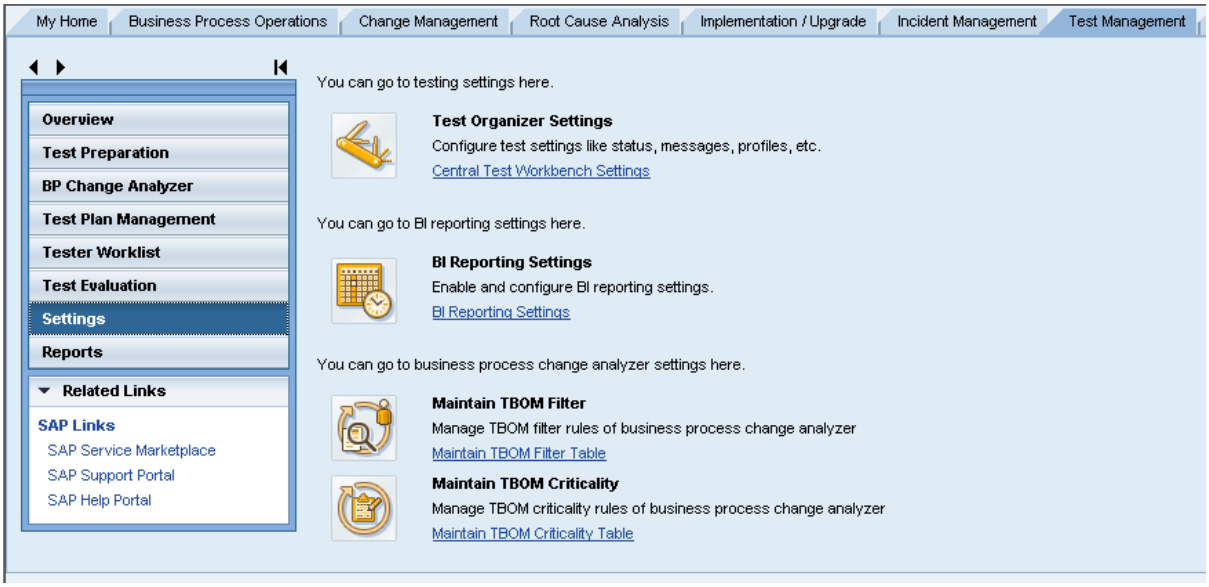
8.4 Work Center settings for TBOM Criticality and Filters

For TBOM filters and criticality settings, the end user can set the values at the Test Management Work Center level with in Solution Manager. The values will then be applied to every analysis and results.

The following steps describe the procedure for changing the TBOM Filter settings to filter out the Software Component "SAP_BASIS" which is a best practice as SAP_BASIS components will not be touch by customers and need not be re-tested after any change.

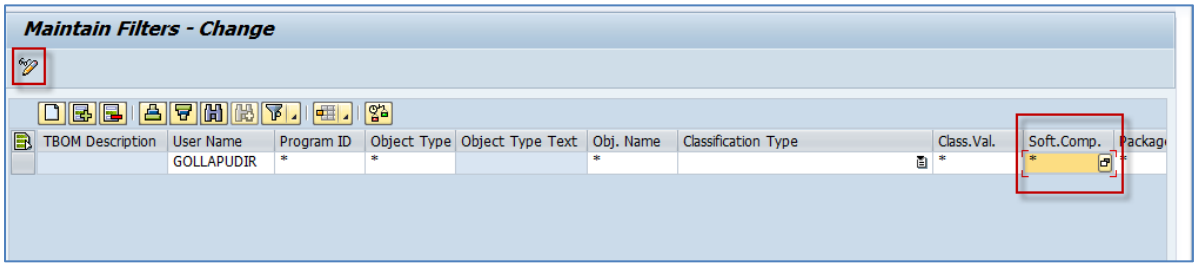
Step 1: Go to Test Management work center in Solution Manager using the Transaction SOLMAN_WORKCENTER

Step 2: Go to "Settings" View. This view has links to various settings pertaining to Test Management. There are two links to applications where we can manage the BPCA settings



Step 3: Click on "Maintain TBOM Filter Table" link. The "Manage Filters" screen is opened.

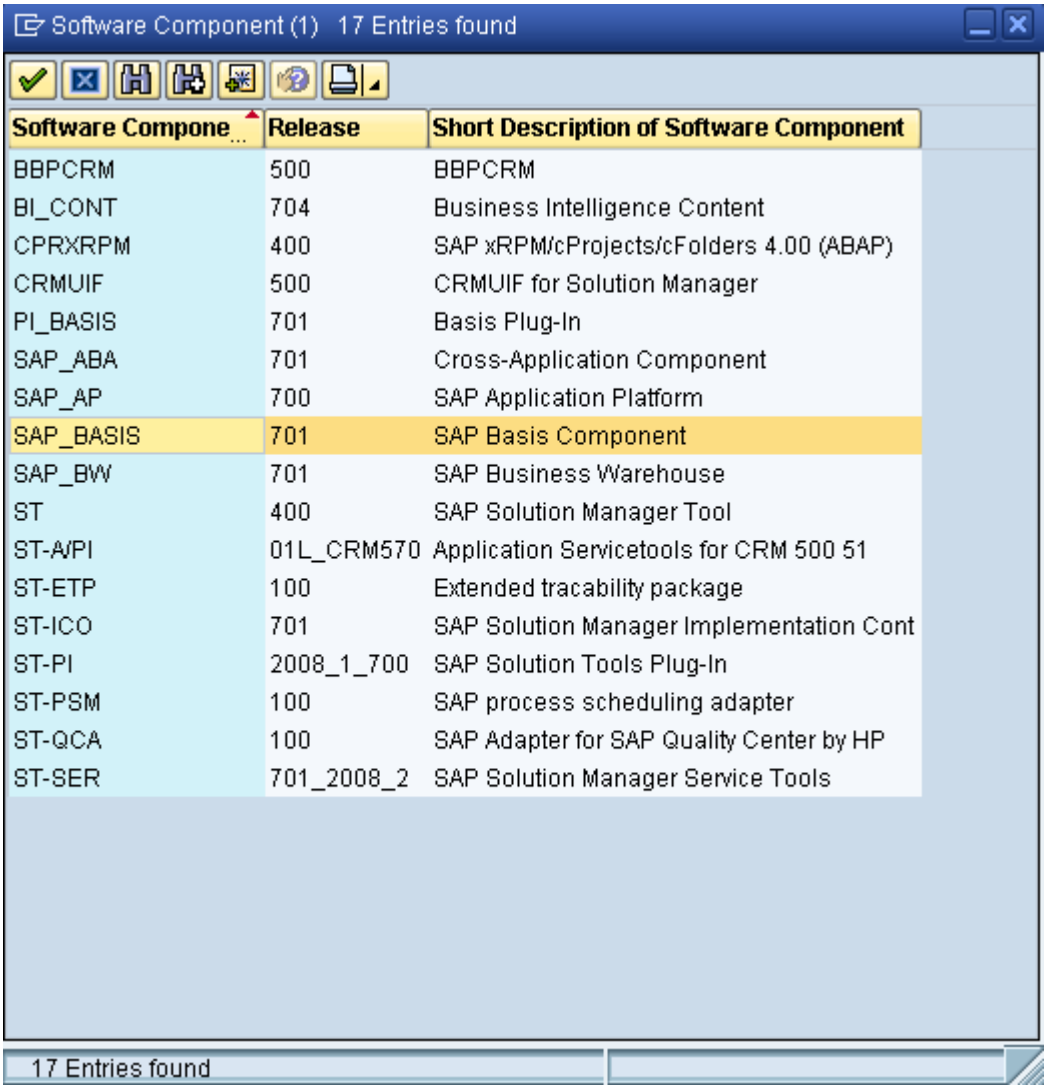
Step 4: Swap the display/change mode for the screen by clicking on the button  .



Step 5: Click on the append row button.

Step 6: Enter the following values

- TBOM GUID: Leave <Blank> (If we want these settings to be applied for a specific TBOM GUID, we can enter the GUID for that TBOM here)
- User Name: Leave <Blank> (The current logged in user is pre-filled here)
- Program ID: *
- Object Type: *
- Cl. Type: *
- Soft. Comp : SAP_BASIS (select the software component from the F4 list)



- Package:*
- TBOM Description: This is a read only field to show the description of the selected TBOM GUID

If we want to filter out any other object parameters, we set the corresponding values in the above screen. In our example we have entered a value only for the "Software Component" parameter.

Step 7: Click on the save button 

The following steps describe the procedure for changing the TBOM criticality settings to set the criticality value as "1" (high) for the Software Component "SAP_APPL" and the criticality value as "0"(normal) for the Software Component "SAP_BASIS". "SAP_APPL" layer contains all application changes which are very critical for customers and thus need to have the criticality level as "high". "SAP_BASIS" components are infrastructure components which need not be re-tested by customers and thus have a "Normal" criticality

Step 1: Go to Test Management work center in Solution Manager using the Transaction SOLMAN_WORKCENTER

Step 2: Go to "Settings" View.

Step 3: Click on "Maintain TBOM Criticality Table"

Step 4: Swap the display/change mode for the screen by clicking on the button 

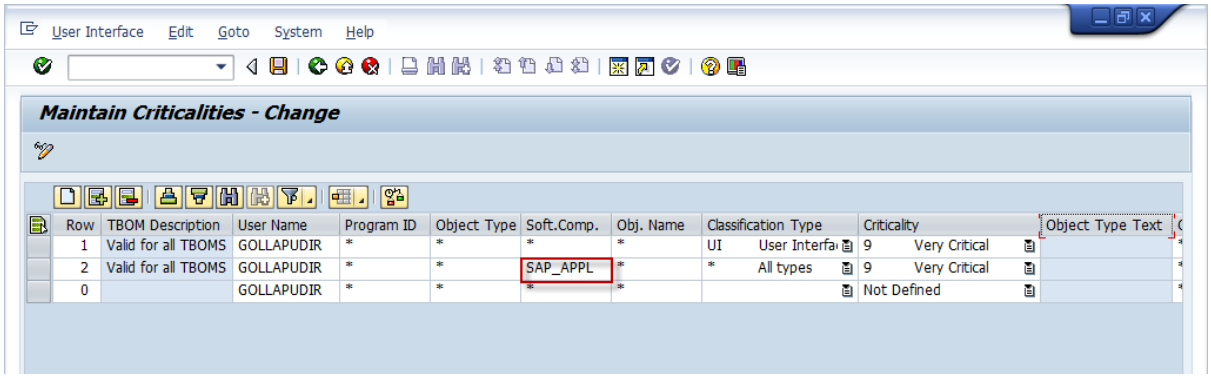
Step 5: Click on the append row button.

Step 6: Enter the following values in row 1

- User Name: Leave <Blank> (The current logged in user is pre-filled here)
- Program ID: *
- Object Type: *
- Classification Type: User Interfaces
- Soft. Comp : *
- Criticality: Very Critical

Step 7: Enter the following values in row 2

- User Name: Leave <Blank> (The current logged in user is pre-filled here)
- Program ID: *
- Object Type: *
- Classification Type: All Types
- Soft. Comp : SAP_APPL (select the software component from the F4 list)
- Criticality: Very Critical



Step 8: Click on save button 

Note

With SAP Solution Manager 7.1 SP05, the criticality settings defined can be used as optimization criteria in BPCA Test Scope Optimization which is defined above.

8.5 How to create a TBOM Enhancement

In a lot of cases, a single TBOM might not cover all variations for a given business process step. To solve such a situation, there is a possibility to create a TBOM variant. For example, there could be a variant for the "Create Sales Order" business process step in the "Order to Cash" business process. One variant is what we have seen in Section for "Creation of TBOM", another variant for the same business process step could be a "Quick Order" creation variant, where the same transaction "VA01" is used but the test case is different. This is when you can create an “Enhancement” of the same TBOM for the step "Create Sales Order". The following steps describe that procedure

Step 1: Go to Test Management work center in Solution Manager using the Transaction SOLMAN_WORKCENTER

Step 2: Go to Test Preparation view. Select the "projects" sub-view.

Step 3: Select the project "O2C_OPT1"

Step 4: Click on the "Blueprint" button. You will be taken to the SAP Solution Manager Business Blueprint screen for the project "O2C_OPT1"

Step 5: Navigate to the business process step in the project hierarchy

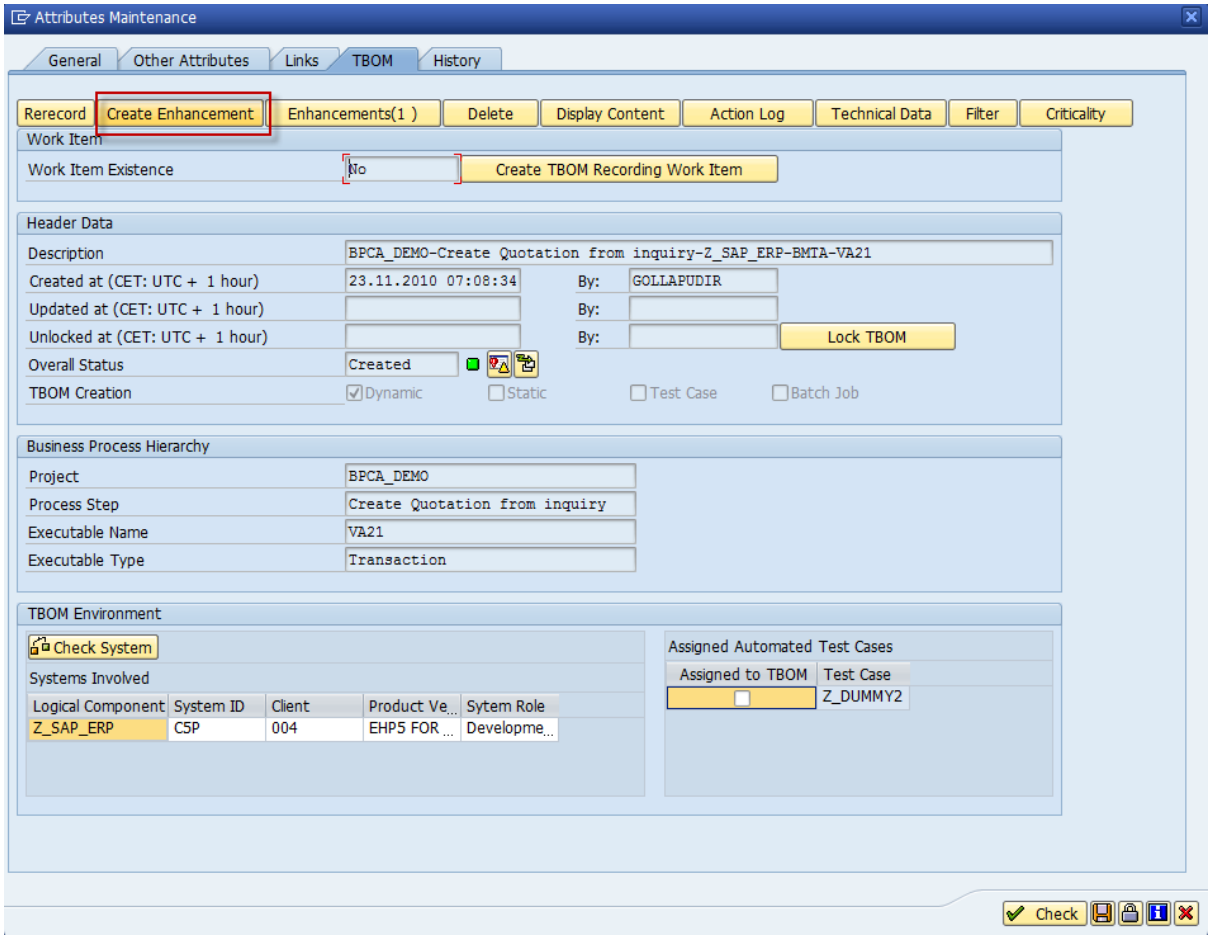
O2C Order to cash implementation project-> Business Scenarios->Business Processes-> Order to Cash->Create Sales Order

Step 6: Go to the transactions tab

Step 7: Select the transaction VA01

Step 8: Click on the attribute button

Step 9: In the "Attribute maintenance" screen, go to "TBOM" tab. You will see that a TBOM is already created for this Transaction.



Step 10: Click on “Create Enhancement”. The normal create TBOM screen pops up.

Step 11: In the Create TBOM screen. You can change the name of the TBOM enhancement.

Step 12: Click Ok button.

Step 13: You will be taken to the VA01 transaction. Create a rush sales order using the same transaction.

Step 14: The new enhancement for the TBOM is created for the transaction "VA01" under the business process step "Create Sales Order"

8.6 Custom Attribute for Business Process Priority

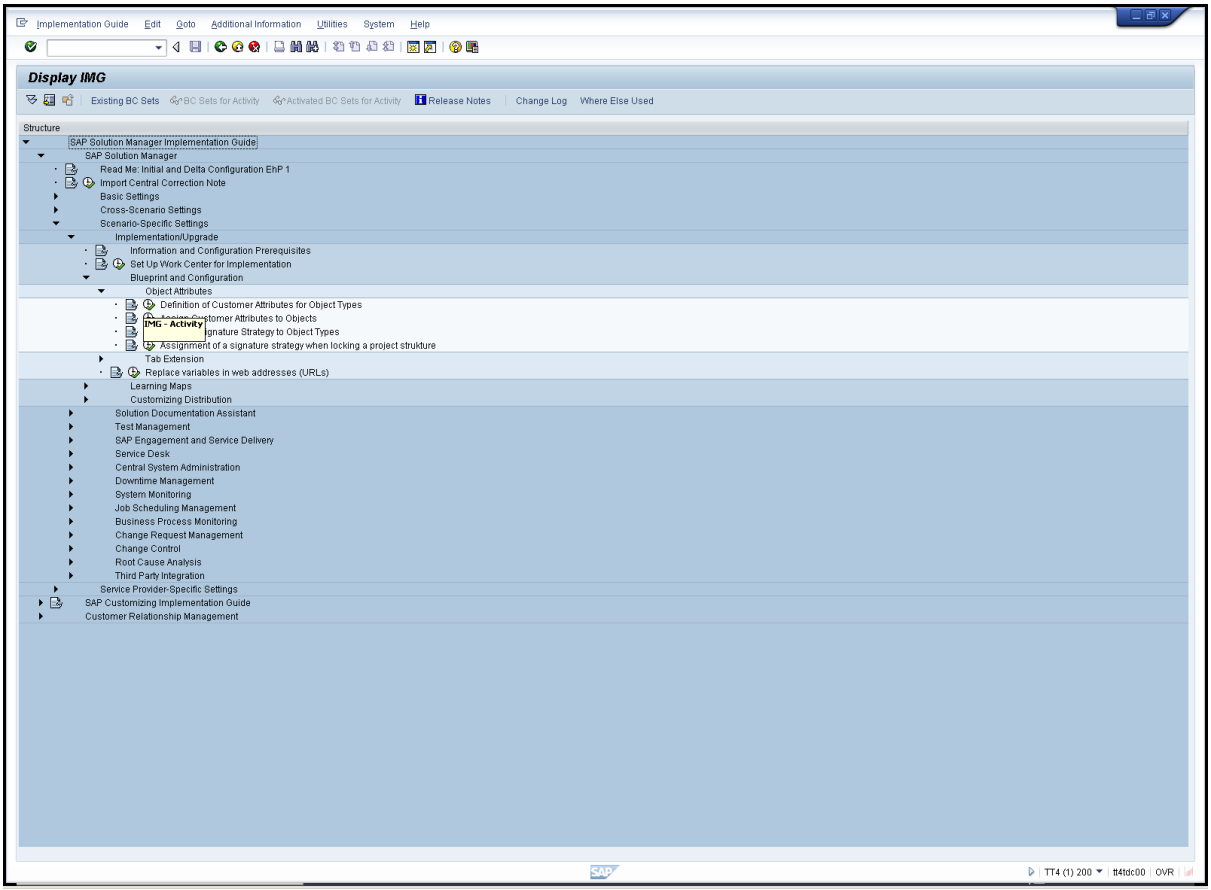
For identifying the critical business processes and using the same as a filter while doing a BPCA analysis, there needs to be a custom attribute called "Business Process Priority" with appropriate values filled in for the Solution Manager Projects used in BPCA. The following procedure explains how to add such a custom attribute

Step 1: Go to Transaction SPRO

Step 2: Click on "SAP Reference IMG" link. The "Display IMG" screen appears

Step 3: Navigate to SAP Solution Manager --> Scenario Specific Settings --> Blueprint and Configuration--> Object Attributes

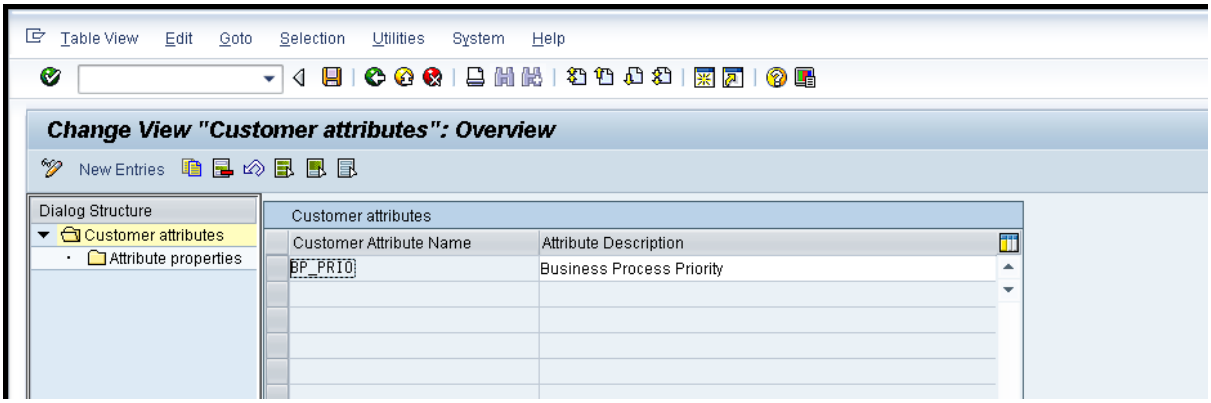
Step 4: Click on "Definition of Customer Attributes for Object Types" as shown in the figure below. The 'Change View "Customer Attributes": Overview screen appears



Step 5: Click on "New Entries" link

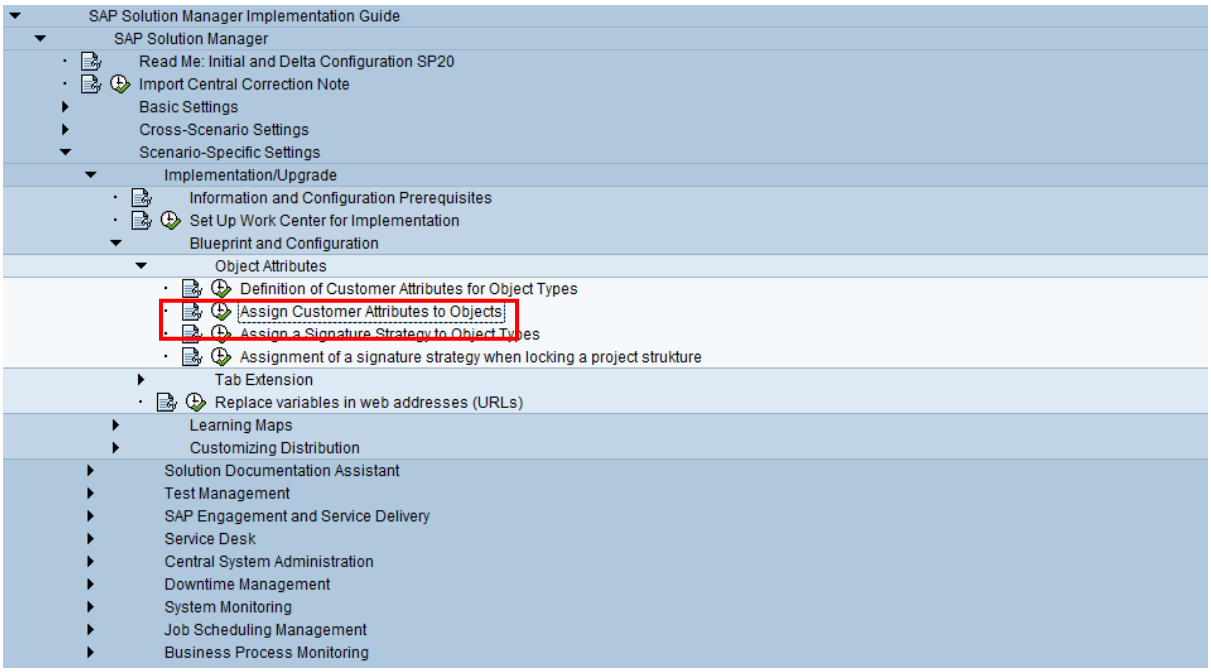
Step 6: Enter the following values

- Customer Attribute Name : BP_PRIO
- Attribute Description: "Business Process Priority"

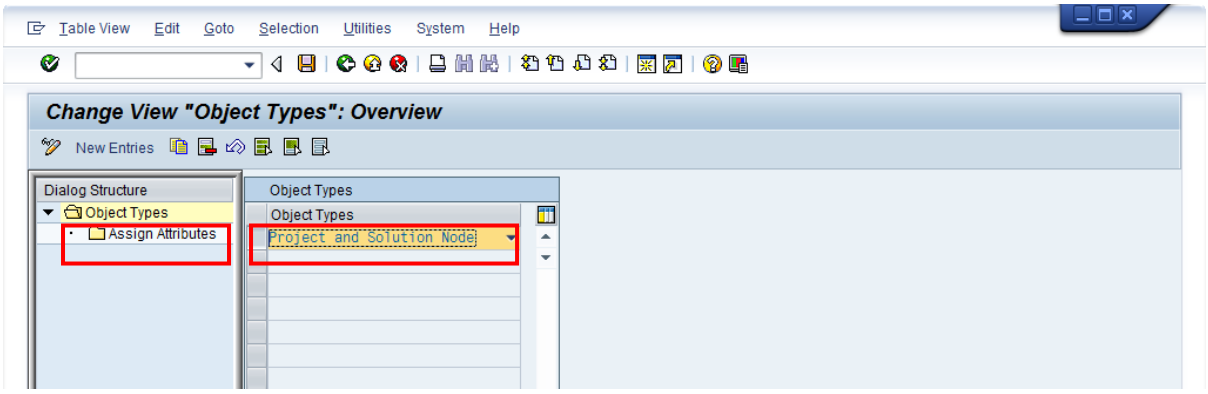


Step 7: Click on "Save" button.

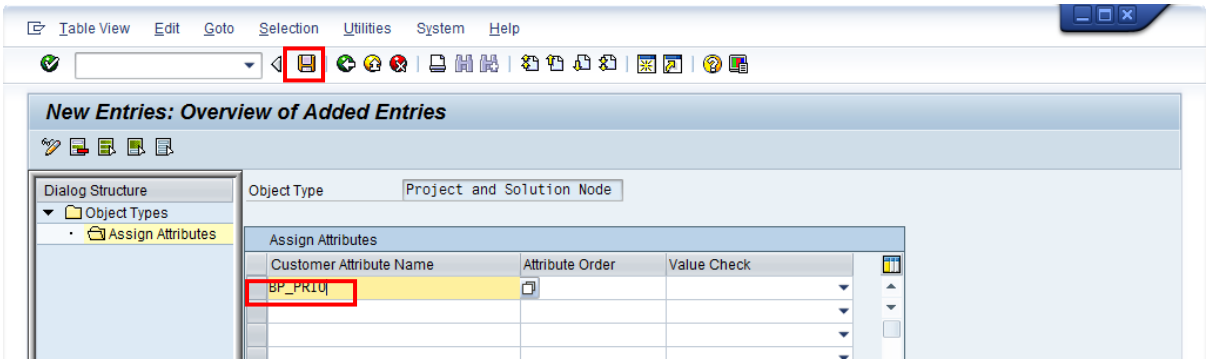
Step 8: Open IMG Activity ‘Assign Customer Attributes to Objects’ (it is directly beneath ‘Definition of Customer Attributes for Object Types’)



Step 9: Mark Object Type ‘Project and Solution Nodes’ and Double click on ‘Assign Attribute’.



Step 10: Click ‘New Entries’ and Choose the Attribute defined in the previous IMG activity(“BP_PRIO” in the example above).



Step 11: Click Save

8.7 BPCA Technical Release Pre-requisites

Function	Solution Manager	Managed System
Single System/Process TBOMS SAP GUI Transactions	ST 7.0 SP18	SAP_Basis 46C, ST-PI 2008_1_xx SP00
Business Function Analysis	ST 7.0 SP23	Netweaver 700 EhP 1 SPS06 Netweaver 700 EhP2 SPS02 ERP 6.0 EhP4 SPS06 CRM 7.0 EhP1
TBOM Recording via SAP TAO	ST 7.0 SP25,SAP TAO 2.0 SP4	SAP_BASIS 700, SAP KERNEL 700 PL 264, ST-PI 2008_1_xx SP04 SAP_BASIS 701, SAP KERNEL 701 PL 116, ST-PI 2008_1_xx SP04 SAP_BASIS 702, SAP KERNEL 720 PL0 , ST-PI 2008_1_xx SP04
Multi System TBOMS Web Applications CRM WebClient Automated Testcase Recording	ST 7.1 SP01	SAP_BASIS 700, SAP KERNEL 700 PL 264, ST-PI 2008_1_xx SP04 SAP_BASIS 701, SAP KERNEL 701 PL 116, ST-PI 2008_1_xx SP04 SAP_BASIS 702, SAP KERNEL 720 PL0 , ST-PI 2008_1_xx SP04
Table Key Recording	ST 7.1 SP01	SAP_BASIS 620, ST-PI 2008_1_xx SP04
Table Key Recording in secondary Systems	ST 7.1 SP01	SAP Kernel 720 PL 83, ST-PI 2008_1_xx SP04

8.8 Useful Notes

The following list of SAP Notes will help in analyzing and resolving in any issues you might face while implementing and using Business Process Change Analyzer.

1. 1339459 : Information on RFC destination selection for BPCA
2. 1291102: TBOM: ST – PI “E2E Testing Agent does not exist” Error

3. 1228899: Upgrade with ST-PI 2008_1 (Solution tools plug-in) on the managed system
4. 1353405: After implementation of the note on the managed system, it will be possible to use transport requests with unreleased tasks in the BPCA analysis.
5. 1351029: BPCA Analysis: TBOM type selection not applied
6. 1356339 : Incorrect data element of system used in BPCA in Solution Manager 7.0 SP19/20
7. 1354508: Fix for “Include objects are missing in the TBOM trace”
8. 1316524: “FAQ: BPCA - for Business Process Change Analyser”
9. 1361350: “BPCA: Authorizations for dynamic TBOM recording”
10. 1395850: Note to fix the issue TBOM recording for managed systsms with basis 620 and 640
11. 1392918: How to create TBOMs for background jobs
12. 1468463: solves a problem with recording data elements and domains in TBOMS
13. 1623668: Solves the issue the trusted RFC issues. This will ensure that the read RFC is used during the analysis.
14. 1964616: Solves the issue for creating TBOMs for executable variants using automated scripts.

8.9 Further Help

For further help on Business process change Analyzer please refer to the following links (some of the links are accessible only to SAP Customers and Partners)

- SAP Standard Help - Navigate to SAP Solution Manager --> Test Management --> Business Process Change Analyzer
  - http://help.sap.com/solutionmanager
- E2E Integration Testing
  - http://service.sap.com/testing
- Test Management wiki on SCN
  - http://wiki.scn.sap.com/wiki/display/SM/SAP+Solution+Manager+WIKI+-+Test+Management
- SAP Solution Manager e-learning material
  - http://service.sap.com/rkt-solman