

BCP Test Manual

Test Cases for BCP Test Installations

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Notes

The latest version of this documentation can be found in the QuantityWare <u>Knowledge Base</u>. All documentation is kept current for the combinations of latest BCS release with the latest supported SAP Oil, Gas, & Energy release. For all currently supported combinations see <u>Note #000086 "Support and</u> <u>Release (Lifecycle) details" page 2, "Release Lifecycle"</u>.

Your release level can be determined via:

"/o/QTYW/COCKPIT" -> "Cockpit" -> "Support Package Level"

Version History

Version	Date	Description
00	2015-05-01	Initial Version
01	2017-11-11	Editorial changes
02	2019-06-25	Editorial changes
03	2020-07-14	Editorial update
04	2021-09-24	S/4HANA 2020 / 2020_EX validity confirmed -
		modern QW document style applied - 30A CSP02 / 30B CSP01
		changes
05	2023-11-01	30A CSP03 / 30B CSP02 changes

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1. Introduction

You have obtained a free-of-charge test usage key for QuantityWare BCP – Bulk Calculations Petroleum. Your technical team has installed the software package in one of your test systems, following the BCP Technical Installation Guide. In the QuantityWare template client 045, the BCP BC-set has been activated. Your task is now to test BCP within the next 4 weeks (possibly with an extension period granted by QuantityWare).

QuantityWare provides three major customizing and configuration documents along with the BCP software package:

- The BCP Project and Implementation Guidelines BCP PAIG
- The BCP Supported Standards Manual
- The BCP Documentation Reference Manual

If you decide to conclude a usage agreement for BCP, it is strongly recommended that you consider these three documents - follow the PAIG Methodology to implement BCP into your system landscape as well as familiarizing yourself with the BCP Supported Standards Manual and the BCP Documentation Reference Manual.



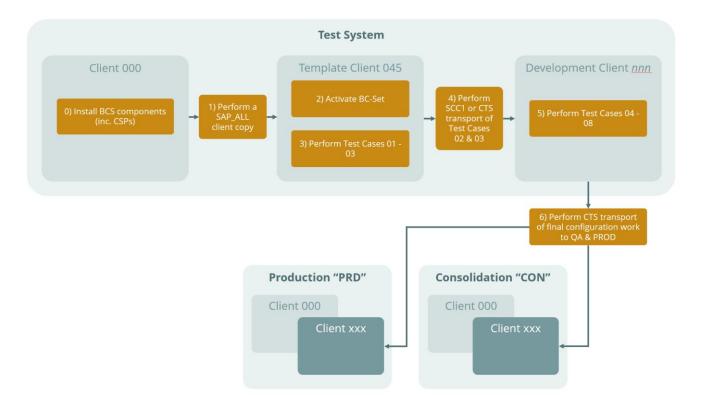
QuantityWare strongly recommends that a certified BCP consultant is employed for the implementation project, or that before implementation, you attend the appropriate BCP certification course.

During the 4 week testing period, you may not have a certified BCP consultant available, and you may not have attended a certification course. Typically, testing time budgets are limited and detailed quantity conversions' configuration knowledge is not commonplace; in order to provide detailed guidance for your testing efforts, this document - the BCP Test Manual - provides a sequence of **eight (8) test cases** which you may execute in your system in order to define a production ready conversion group in your development/test client – including automated test scenarios - based on the BCP template configuration.

The Petroleum Measurement Cockpit (PMC) is the central access point for the configuration and testing of all quantity conversion settings in your system. Thus, all test cases are executed via the PMC. The only exception to this rule is test case 08. There, you require the authority to assign a conversion group and UoM group to a material in the material master.

Each test case contains a sequence of actions to be performed in the BCP Petroleum Measurement Cockpit. These are illustrated with screen shots, to ensure that you can easily identify all steps and execute the test case.

To execute the test cases in your test system, you require access to the **QuantityWare template client 045 and to your development client.** In that client, all your business process' configuration data is available, as illustrated below:



In summary, through execution of the 8 test cases you:

- Understand how you selectively probe the rich BCP template in client 045
- Learn how to copy required conversion group configuration data to your Z* name space
- Transport that data to your development client for additional tests and final configuration.

In order to execute the test cases, you must be familiar with SAP customizing transactions and have knowledge of working with SAP customizing transports. Additionally, good SAP QCI knowledge is required. In order to reduce the number of required screen shots for this document, customizing actions such as copying an object typically omit obvious steps.

The total execution time for all 8 test cases – if your user ID is equipped with all required authorizations – is estimated to be **3 hours** if you fulfill the above noted requirements.

If your organization is unfamiliar with the requirements for quantity conversions or has no documentation / experience concerning existing system configuration in this area, QuantityWare strongly recommends using the services of a QuantityWare certified consultant already at this early stage. QuantityWare can provide your organization with a <u>list of companies and independents</u> offering such consulting. QuantityWare does not offer such consulting itself and support will not provide remote consulting through the service portal.



If you are planning to run BCP within your SAP PRA installation, test case 08 is not relevant for you. SAP PRA requires the assignment of a conversion group to a delivery network. Read the QuantityWare working paper <u>"PRA Measurement System</u> <u>Integration"</u> available in the Knowledge Base at www.quantityware.com for additional guidance.

2. Test Cases

2.1. Test Case 01 – Run Installation Test - Template

Estimated test case execution time: 10 minutes

Part 1 - Log on to your template client 045 and launch the Petroleum Measurement Cockpit (PMC) – Transaction /N/QTYW/COCKPIT. You first need to check if your basis team has installed the BCP test usage key. From the Petroleum Measurement Cockpit (PMC) menu select: Cockpit -> Usage Key. Then, select "Display" and note the list display:

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This looks good (2), a BCP usage key is in place - in our example we also have a BCG usage key installed, which is not required.

Part 2: From the Petroleum Measurement Cockpit menu select: Environment -> BC Set Activation Test – is performed by the basis team, but a 4-eyes principle is always good.

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Part 3: Now you run the QuantityWare Installation Test. Select the PMC "Test Tools" tab strip and select the "Run Installation Test" push button.

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All test programs (40 if no customer specific test programs are present in your system) and all 2 675 test scenarios need to run "green" i.e., without error. By clicking on the result line, you obtain a list detailing all scenarios. You may select any scenario to inspect its details.

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If the BCP installation test (validating the BCP template) does not run "green", do NOT proceed with the following 7 test cases. Before continuing with the steps described in this document, the issues causing the "red" test runs must be resolved. In such cases, the experience and multi-customer knowledge of a certified consultant can pay for itself in time and effort saved.



2.2. Test Case 02 – Identify & Copy LPG Conversion Group - Template

Estimated test case execution time: 30 minutes

The QuantityWare BCP template contains more than 500 conversion groups, mapping all meaningful BCP supported measurement standard combinations. In the template client, QuantityWare also delivers test UoM groups, allowing you to perform test calculations for each template conversion group in that client without having to perform additional intricate configuration. A complete template of more than 400 UoM definitions (4 languages) is provided as a part of the delivery.

Each conversion group is defined by four (4) different measurement standards:

- UoM conversion standard
- Mass-to-weight conversion standard
- CT(P)L standard ("Corrections for the effect of Temperature and Pressure on Liquid")
- Calculation model standard



SAP QCI conversion groups only differ in the CT(P)L standard, whereas MQCI conversion groups allow combinations of all four groups of standards.

All QuantityWare template conversion groups are defined in the Q* name range.

Secondly, a Warning block:



The most challenging task during BCP implementation is the correct selection of a QuantityWare template conversion group for a material (group of materials).



Once this assignment is made, you simply copy the Q*** template conversion group and associated configuration objects (e.g. reading group) to your Z*** name space in the template client. In this document, we assume that you know exactly which measurement standards are relevant for your materials; if this is not the case, see the PAIG document for the required additional time.

Part 1: Select the PMC "QCI Configuration" tab strip. Several selections are available to display defined subsets of the template conversion groups. Select "By Measurement Standards":

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Select mass to weight conversion standard:				
Not specified				1
Select quantity conversion model standard:				-1
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Select UoM conversion factor standard:				
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Additional search restrictions				
Display conversion groups with product type:				
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With this selection, you probe the template conversion groups by measurement standards, additionally you may restrict the search by product type and conversion group base temperature.



For this test case, we wish to determine an LPG conversion group for our LPG products (e.g. commercial propane, commercial butane etc.). Select "API MPMS Chapter 11.2.4 – GPA 8217 (TP-27) – LPG/NGL" as CT(P)L standard, "ASTM D1250-80 (Table 56, Density – kg/m³ 15 °C)" as mass to weight conversion standard and "15 °C" as conversion group base temperature and select "Execute" (F8):

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Select UoM conversion factor standard:				
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2 Q72A Q72A	Q72A QTYW	LPG GPA 8217 & CPL DENSITY	<u>15 °C, MQCI</u> 8	0.50	0.10	0.10	0.50				



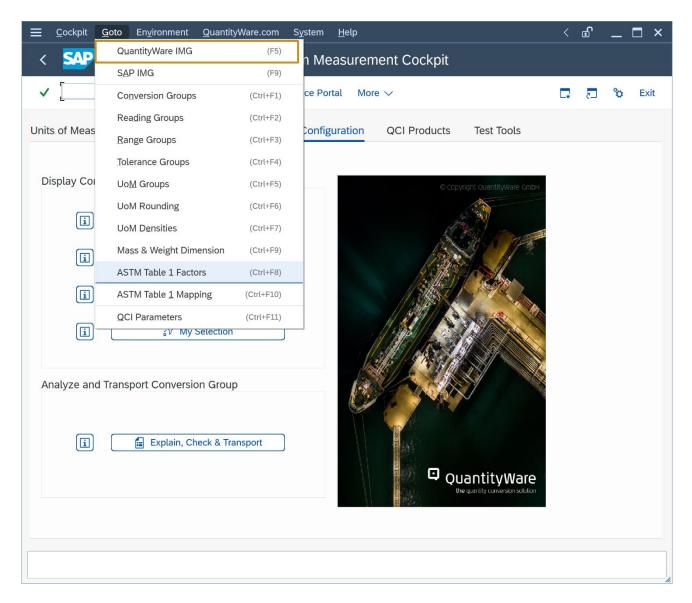
Two template conversion groups are available which fulfill your selection criteria. By double-clicking on the description text a detailed description of the conversion group is displayed, in this case informing you that conversion group Q72A is configured for dynamic CPL (pressure correction) calculations too, which is not required. Thus, template conversion group Q721 looks like a good candidate. Let's perform a trial conversion using conversion group Q721. In the PMC, select push button "Oil & Gas Test Calculator" (More ->) to use the calculator in conversion group mode:

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VCF observed to base	е			0.98159		100	00.000L20 🗌	^ > ~				

Enter conversion group Q721 and test UoM group QTA and a transaction quantity of e.g. 100,000 L. The quantity values for all UoM defined in UoM group QTA are readily calculated. Note that this conversion group is an MQCI conversion group, for which masses (here, UoM KG) and weights (here, UoM KGA) may be calculated in parallel. Additionally, the VCF and "base density in air" are displayed for each calculation as well.

Part 2: Now let's copy template conversion group Q721 in the template client to the customer name range - Z721. You have two options. Either navigate to the QuantityWare IMG via menu path: Goto -> QuantityWare IMG



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		🙆 🕒 Define mapping between SAP UoM and ASTM UoM	
		🙆 🕒 Maintain physical property data for natural gas, LNG & LPG components	
		🙆 🕒 Maintain additional physical property data settings	
		🙆 🕒 Maintain ISO 6578 constants for LPG density calculation	
		🗟 🕒 Define basic natural gas, LNG & LPG physical constants & values	
		🙆 🕒 Define conversion group constants for DIN 51757 Y method	
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and select the relevant customizing nodes, or directly access the three relevant nodes via the direct menu path access: Goto -> Conversion Groups / Reading Groups / Range Groups The second option is faster, so here goes 🐵:

Goto -> Conversion Groups:

In "Change" mode, select conversion group Q721 and select "Copy As ... (F6):

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In the details screen, enter Z721 as target name and select "copy all" after you press "Return".

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Save your actions and select an appropriate customizing transport.

Goto -> Reading Groups:

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Repeat the copy procedure as described above for reading group Q721:

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 Number of copied entries (ind 	cluding translations): 1						

Save your copy actions and select an appropriate customizing transport.

Finally, go back to the conversion group configuration via PMC menu path: Goto -> Conversion Groups and select "Link reading group to conversion group" for your new conversion group Z721:

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Change the assignment from Q721 to Z721. Save your actions and select an appropriate customizing transport.



Finally, you need to copy the range data from template conversion group Q721 to Z721:

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Goto -> Range Groups:

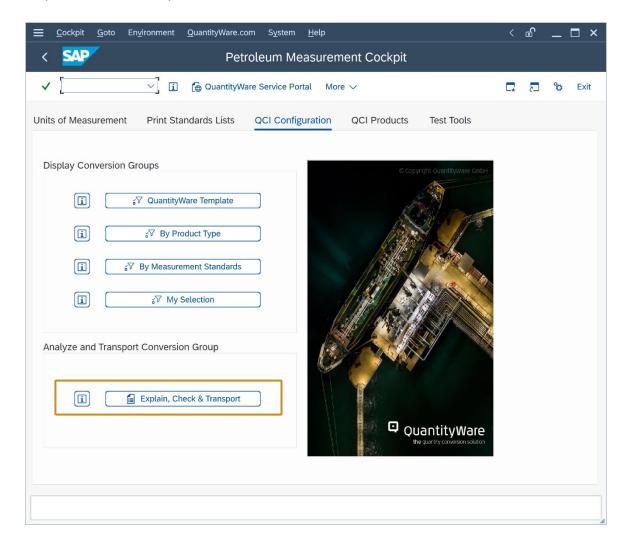
Now you have finished copying template conversion group Q721 to Z721. A test calculation (via the PMC push button "Oil & Gas Test Calculator") should produce identical results when compared with the test calculation for conversion group Q721:

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✓ 🔄 Material 🔺 (Re)use Defaults Cancel	🗔 🗔 🗞 Exit	✓ 🛛 ✓ 🕼 Material ★ (Re)use Defaults Cancel	🗔 🔁 🗞 Exit
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Transactin. qty. 100000 L Base density Therm. expan. coeff.		Transactin, qty. 100000 L Base density Therm. expan. coeff.	
Result		Result	
Parameter C Value U Ø AddLqty U Observed temperature 20.00 CEL C 46134.730KG 1		Parameter C Value U \land AddLqty U M Image: Mail and	
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Test temperature 15.00 CEL 100000.000L		Test temperature 15.00 CEL 100000.000L	
Hydrometer corr. indicator 97121.740L12		Hydrometer corr. Indicator 97121.740L12	
Base density(vac.) 470.00 KGV 98159.000L15		Base density(vac.) 470.00 KGV 98159.000L15	
VCF observed to base 0.98159 VCF 108000.000L20		VCF observed to base 0.98159 VCF 100000.000L20	

2.3. Test Case 03 – Build Transport for LPG Conversion Group - Template

Estimated test case execution time: 10 minutes

The PMC contains the "Explain, Check and Transport" Tool, which simplifies the collection of all relevant template configuration data for a conversion group. This is useful as a conversion group is a complex configuration object which may require additional data from many different tables - not only the ones you touched during test case 02 execution. Select the PMC "QCI Configuration" tab strip and select "Explain Check & Transport".



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 Transport SOIK902718 has been creating 	eated/updated with all required objects for Z721	< >

Enter your new Z721 conversion group and select "Include conv. group i. transp.". Select an empty/new customizing transport. **Follow your in-house procedures to have this transport imported into your development client.**

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With the "Check, Explain and Transport" tool, you may also include all required UoM data for a conversion group into a single customizing transport. Since your development client typically conatins previously configured UoM data, it is strongly recommended to **only copy UoM data for UoM that are NOT already present** into your development client from client 045 . Otherwise, you may overwrite your existing and (hopefully) validated UoM data in that client with the QuantityWare template UoM configuration, which is validated using <u>NIST SP 811</u>.



In the following test cases, your material and plant data definitions as well as available UoM groups/definitions may differ from those used in the screen shots



2.4. Test Case 04 – Test LPG Conversion Group - Development

Estimated test case execution time: 15 minutes

After your Z721 conversion group has been successfully transported to your development client, log on to that client and start the Petroleum Measurement Cockpit (PMC) using transaction /N/QTYW/COCKPIT. Note that in this client, the PMC will show less options than in client 045 (where the QuantityWare template is available). For example, the installation & implementation test is not available in this client, since it requires the complete QuantityWare BCP template.

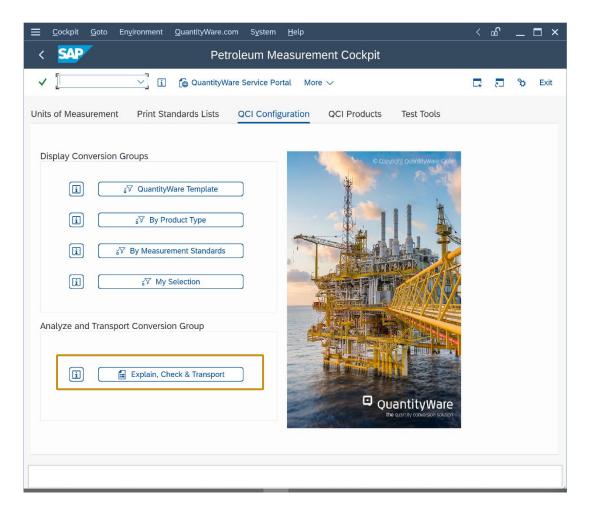
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UoM Tests		
	3 UoM Compliance Analysis	

Part 1: Go to the "Oil & Gas Test Calculator" and check if conversion group Z721 has been transported correctly to your development client, i.e. perform several trial calculations:

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UoM Group ZTM BCP TE	ST MANUAL DEVELOPMENT		
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Result			
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Observed temperature	20.00 CEL 🗘 4613.473KG 🗌 🗘 🕤		
Test density(vac.)	470.00 KGV 4602.676KGA		
Test temperature	15.00 CEL 9815.900L15		
Hydrometer corr. indicator	✓ 10000.000L20 □		
Base density(vac.)	470.00 KGV 10171LB		
VCF observed to base	0.98159 VCF 2598.257UG6		
			٦

Note that we did not transport test UoM group QTA and are using a new UoM group ZTM instead. The decimal display settings for some UoM may differ in this client.

Part 2: Once you have manually validated that conversion group Z721 is running in your development client, perform the automated validation test. Select the PMC "QCI Configuration" tab strip and select "Explain Check & Transport". Enter Z721 as conversion group, select "Check conversion group" and then "Execute" (F8):



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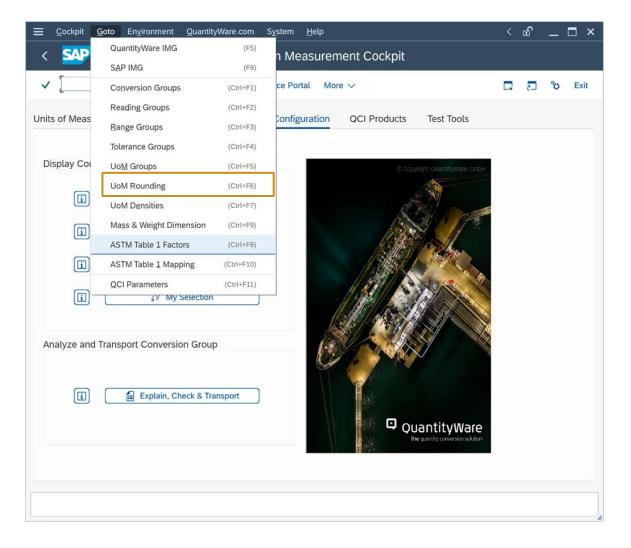
Ensure that no error or warning messages are present. This test should produce identical results when compared with the results for Z721 in client 045.



2.5. Test Case 05 – Define UoM Rounding - Development

Estimated test case execution time: 10 minutes

In your development client, define the appropriate UoM rounding for your UoM group. From the PMC menu, select: Goto -> UoM Rounding and enter the UoM KG, KGA, L15 and L20 with 0 (Space) decimal places rounding:



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Check that the rounding settings are working by performing another trial calculation (via PMC push button "Oil & Gas Test Calculator"):

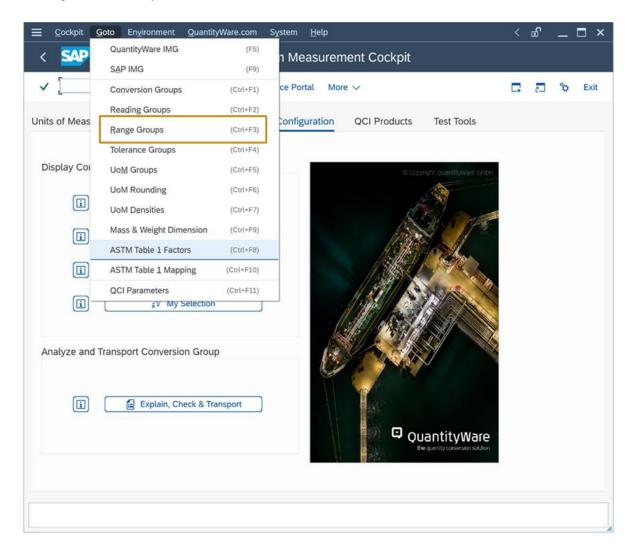
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Test temperature				15.00	CEL		98159.	.000L15						
Hydrometer corr. i	ndicator		\checkmark				100000.	.000L20		сĿ.				
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NOTE: Via transaction CUNI, you may now also change the display decimal settings for all UoM, e.g. so that <u>trailing zeros</u> are no longer displayed.

2.6. Test Case 06 – Define Ranges for LPG Conversion Group -Development

Estimated test case execution time: 15 minutes

In your development client, define the appropriate range limits for your input parameters. From the PMC menu, select: Goto -> Range Groups and define range limits for the observed temperature, test density and test temperature:



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Once you have maintained the ranges and saved your work, perform trial conversions and test that the range limits are working:

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Test temperature	21.00	CEL	0.000L15	
Hydrometer corr. indicator			0.000L20	
Base density(vac.)	470.00	KGV	OLB	
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Good range data is vital to ensure good data quality e.g. for measurement values being passed from the field to the ERP system, as well as to prevent fraudulent via "open door (unrealistic) calculations".

2.7. Test Case 07 – Define Test Scenarios for LPG Conversion Group -Development

Estimated test case execution time: 60 minutes

Test scenarios are your insurance against manipulation and proof that that your quantity conversion configuration is running as designed and tested, in production. For this test case we assume that you have validated the calculations of conversion group Z721 (e.g. independent calculations in a spread sheet, typically done by certified BCP consultants). Let's take the following test calculation - PMC push button "Oil & Gas Test Calculator" - and transfer it into our first test scenario:

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	lure		470.00 15.00	KGV CEL		_					
Test density(vac.)		V	15.00		9815	7.000KGA 🗌					
Test density(vac.) Test temperature		V	15.00		98159	7.000KGA [] 9.000L15 []					



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Units of Measurement Print Standards Lists QCI Configuration QCI Products	Test Tools
Installation Tests	
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I Run Scenarios	
S Maintain Scenarios S Maintain Scenario Logs	
UoM Tests	
UoM Compliance Analysis	

From the PMC tab strip "Test Tools" select "Maintain Scenarios", then "Create scenarios":

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< SAP Measurement Cockpit: Maintain My Scenarios		
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Select scenario activity Activity: Usptay scenarios Create scenarios Copy scenarios Delete scenarios Delete scenarios Analyze scenarios		

Enter the scenario ID (e.g. Z70A), a description, the conversion group Z721 and UoM group EU1 and press "Enter":

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Scenario header		
Scenario ID:	Z70A My first BCP Scenario Description	
Application:	BCP	
Conversion group:	Z721	
Unit of measure group:	ZTM	
Test mode		
Run red on error	$ \bullet $	
Run green on error	0	
Expected results		
Expected results		
Select expected results cla	55'	
Check quantities & para		
 Check quantities only 		
 Check parameters only 		
$\langle \rangle$		

In the details screen, the reading group values are defaulted as input parameters. Now enter the transaction quantity of 100,000.000 L and check that the "expected result class" radio button is set to "Check quantities and parameters"). Then select push button "Calculate expected results", confirm the calculated values and then save your scenario, confirming all messages:

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Scenario header					¢
Scenario ID: Z70A My first BCP Scenario	Description				
Application: BCP Bulk Calculations / Compliance & Trans	parency - Petroleum				- 1
Conversion group: Z721 LPG GPA 8217 DENSITY 15 °C, MQCI	Z721 Reading group				- 1
Unit of measure group: ZTM BCP TEST MANUAL DEVELOPMENT Test mode					
Run red on errorImage: Constraint of the second					
Input parameters and quantity Parameter (Reading Group)					
Observed temperature 20.000000 CE	degree Celsius				
Test density(vac.) 470.000000 KG	V kilogram per cubic meter				
Test temperature 15.000000 CE	degree Celsius				
Hydrometer corr. indicator					
Transaction quantity					
Quantity	liter (NOV)				
Expected results					<>> ²

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Т	ansaction quantity								¢
	Quantity		100,000.0000	L	liter (NOV)				
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S	elect expected results class:								
	Check quantities & parameters								
	O Check quantities only								
	○ Check parameters only								
Ρ	arameters								
	Base density(vac.)		470.000000	KGV	kilogram per cubic meter				- 1
	VCF observed to base		0.981590	VCF	Volume corr. factor - oil				- 1
	Base density (air)		468.900000	KGV	kilogram per cubic meter				- 1
Q	uantities								
	net mass NSM		46,135.0000	KG	kilogram (NSM)				- 1
	net mass NSM		101,709.6690	LB	pound (avoirdupois) (NSM)				- 1
	net volume NOV/NSV		98,159.0000	L15	liter - 15 °C (NSV)				
	net volume NOV/NSV		100,000.0000	L20	liter - 20 °C (NSV)				
\bigcirc	net volume NOV/NSV		25.982.5700	UG6	gallon (U.S.) 60 °F				

NOTE: go to "More -> Save Scenario" to save your scenario.

For the second scenario, we want to ensure that the range check is always executed correctly (extremely important for production environments) - Thus we define the following scenario:

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K SAP	Measurement Cockpit: Create My Scenarios				
/ ~	🖫 i 🖩 Calculate expected results 🛛 More 🗸	L.	2	ò	Exit
enario header					0
Scenario ID:	Z70B My second BCP scenario Description				
Application:	BCP Bulk Calculations / Compliance & Transparency - Petroleum				- 1
Conversion group:	Z721 LPG GPA 8217 DENSITY 15 °C, MQCI Z721 Reading group				_
Unit of measure group:	ZTM BCP TEST MANUAL DEVELOPMENT				_
Test mode					_
Run red on error	0				_
Run green on error	•				
Application area	/QTYW/BCC Message number 043				
					ľ
Parameter (Reading Group)					
Parameter (Reading Group) Observed temperature	20.000000 CEL degree Celsius				
Parameter (Reading Group) Observed temperature Test density(vac.)	20.000000 CEL degree Celsius 601.000000 KGV kilogram per cubic meter				
Test density(vac.) Test temperature	20.000000 CEL degree Celsius 601.000000 KGV kilogram per cubic meter 15.000000 CEL degree Celsius				
Parameter (Reading Group) Observed temperature Test density(vac.) Test temperature Hydrometer corr. indicator	20.000000 CEL degree Celsius 601.000000 KGV kilogram per cubic meter 15.000000 CEL degree Celsius				
Parameter (Reading Group) Observed temperature Test density(vac.) Test temperature Hydrometer corr. indicator Transaction quantity	20.000000 CEL degree Celsius 601.000000 KGV kilogram per cubic meter 15.000000 CEL degree Celsius				
Parameter (Reading Group) Observed temperature Test density(vac.) Test temperature Hydrometer corr. indicator Transaction quantity	20.000000 CEL degree Celsius 601.000000 KGV kilogram per cubic meter 15.000000 CEL degree Celsius				



Now we go back to the PMC tab strip "Test Tools" and select "Run Scenarios". Then, select "Run all scenarios w/o snapshot" and "Write snapshot and log":

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< SAP Petroleum Measurement Cockpit	
✓ ✓ 😧 🔂 QuantityWare Service Portal More ∨	📮 🗗 💝 Exit
Units of Measurement Print Standards Lists QCI Configuration QCI Products	Test Tools
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UoM Tests	
T UoM Compliance Analysis	J

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< SAP Measurement	Cockpit: Run My Scenarios				
✓ ✓ 🖾 🤤 Cancel		} 📮	2	°o	Exit
Select run mode					
 Run all available scenarios Run selected scenarios Run all scenarios w/o snapshot 					
Select range of scenarios for run					
Select scenario ID	to 📑				
or scenarios for conv. group Z721					
Select log and snapshot indicator					
	and no new snapshot stored				
○ Write log, no snapshot Logs wil	ll be stored for all scenarios, no new snapshots stored				
Write snapshot and log Logs an	d new snapshots (for green scenarios) stored				
		_			< > //

If you have maintained the two scenarios correctly, the following result will be displayed:

< SAP Measurement Cockpit: Run My Scenarios
✓ ✓ 🖾 Information Cancel 🏠 🚺 🔂 🖓 🗛 🔍 🗘 🛱 🗖 🛱 🗗
Test Scenario Results System/client:SOI/045 Date time: 10.02.2023 12:48:01 My scenarios No errors detected
Description Value Logs Snapshots
Number of scenarios 0002
Successfully executed 0002 Logs written Snapshots written

The system has performed a quantity conversion automatically and compares the actual results with the expected results defined in the scenarios.

In order to test this tool, let's go back to the range data for conversion group Z721 (see test case 06) and change the test density "high" error limit to 620 kg/m³:

Ξ <u>T</u> able View <u>E</u> dit <u>G</u> oto	<u>S</u> election <u>U</u> tilities	System <u>H</u> elp	< 🖆 🗕 🗖 ×
< SAP (hange View <u>"Re</u>	ading Group: Parameter Ranges": Details	
✓	🔚 🍪 New Entri	es 🗐 🗇 ₅ € 🗗 🔂 More ∨ 🦷	🖥 🗖 🔁 🗞 Exit
Dialog Structure	Parameter name	Z721 OBSTSTDENS ameter Ranges Test density(vac.) KGV 620 .0000000 Non zero range limit	
Otata was saved View detail	Warning: low Indicator Error:low Indicator Param. (const.) Comp. operator	460.000000 Non zero range limit 450.000000 Non zero range limit	\$



If we now run the scenarios for conversion group Z721 again, one scenarios fails:

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< SAP		Measurement	Cockpit: Rı	un My Scenarios	5					
✓	∨ i Infor	mation Cancel (G	Q	⊄ हि	□ .	5	🏠 Exit	
Test Scenal System/client:SOI/C Date time: 10.02.20	045									7
ERRORS detected	Value Logo	Spanshata	••••							
	Value Logs 0002	Snapshots								
Number of scenarios		n No snapshots written								
		No snapshots written								
		· ·								
										7

The expected range error is not raised during the internal test run, which is displayed in the detail view for the scenario:

<u> </u>	<u>S</u> ettings	Syste	m <u>H</u> elp									<	£	_	
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✓	~ i	Inforr	nation Cancel	<u>í</u>	[]	1	€¥		Q	Q+	ŧ	□.	5	ô	Exit
Results															^
Scenario ID: Z70B - My QuantityWare: Bulk Cal Con.Grp.: Z721 - LPG C Read.Grp.: Z721 - LPG UoM Group: ZTM - BCF Last changed: SENGM Test mode: Run green A different error occure Appl. area, message nu Appl. area; /QTYW/BCC	culations - P GPA 8217 DE DENSITY 15 PTEST MANN - 10.02.2023 on error d ==> red umber expe	etrol NSIT °C, I UAL I 12:4	eum 'Y 15 °C, MQCI MQCI DEVELOPMENT 15:59												
Appl. area: /QTYW/BCC Message: QCI: Differences in calc	C Mess. ทเ														~
Description	Value	Unit	Measurement ur	nit text	Pa	ramete	r descript.								
Input parameters:															^
Observed temperature	20.000000	CEL	degree Celsius		Ob	served	l temperature								11
Test density(vac.)	601.000000	KGV	kilogram per cub	oic meter	Tes	st dens	sity(vac.)								
Test temperature	15.000000	CEL	degree Celsius		Tes	st temp	perature								- 21
Hydrometer corr. indicator	Х				Hy	drome	ter corr. indicate	tor							
Transaction quantity:															
Transaction quantity	100,000.000	L	liter (NOV)		Tra	ansacti	on quantity								
Expected parameters:															
Expected parameter	0.000000	KGV	kilogram per cub	pic meter	Ba	se den	sity(vac.)								0

Go back to the PMC tab strip "Test Tools" and select "Maintain my test". Now select the "Analyze scenarios" option, where we can compare the snapshot data with the current configuration data:

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✓ ✓ 🖫 🤤 🖬 Cancel	ē	□.	2	°	Exit
Select scenario activity					
Activity: Analyze scenarios					
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Enter the scenario ID Z702 and select "Execute (F8) to display the snapshot header data:

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< SAP Measurement Cockpit: Analyze My Scenarios				
V 🔚 i Cancel	L*	5	°	Exit
Enter scenario ID (initial = select all)				
Scenario ID: Z708 Q to				
OR analyze scenarios for conversion group				
Conversion group:				
				< >

≡ List Edit Goto Settings System Help	<	Ê	_ 🗆 ×						
< SAP Measurement Cockpit: Analyze My Scenarios									
✓ information Cancel fr fi fi fi fi q q q ⁺	ē 📮	5	🗞 Exit						
Test Scenario List for Analysis Snapshot database Number of snapshots: 1 Scenario -> Compare scenario (DB/Snapshot) Appl., Run date, Run time -> Analyze Scenario Config.			1						
Scenario Appl. Run date Run time Run by CvG UoMG Mod. by Mod. date Time Z70B BCP 10.02.2023 12:47:58 SENGM Z721 ZTM SENGM 10.02.2023 12:45:59									
L									

If you click the Scenario ID, the comparison of the snapshot data for the scenario and the actual scenario (running in the system) is displayed:

<u>L</u> ist <u>E</u> dit <u>G</u> oto	<u>S</u> ettings	Syste	ım <u>H</u> elp					<	d	—	
< SAP Measurement Cockpit:Analyze My Scenarios - Compare Definition											
✓	~ <u>i</u>	Inform	nation Cancel f	a a a	Q	Q+	ē	□.	2	°o	Exit
Test Scenario Database da Scenario ID - Descriptio Z70B - My second BCP Z70B - My second BCP Application - Descriptio BCP - QuantityWare: B	on: scenario scenario n:		omparison Sna	oshot versus							~
BCP - QuantityWare: B Conversion group - Des Z721 - LPG GPA 8217 Z721 - LPG GPA 8217 Reading group - Descri Z721 - LPG DENSITY 1 Z721 - LPG DENSITY 1	scription: DENSITY 15 DENSITY 15 ption: 5 °C, MQCI	ons - °C, N	Petroleum /IQCI								
BCP - QuantityWare: B Conversion group - Dee Z721 - LPG GPA 8217 Z721 - LPG GPA 8217 Reading group - Descri Z721 - LPG DENSITY 1	scription: DENSITY 15 DENSITY 15 ption: 5 °C, MQCI 5 °C, MQCI	°C, N °C, N	Petroleum /IQCI	 Description	Value	Unit	Measu	remen	t unit 1	ext	
BCP - QuantitýWare: B Conversion group - Des Z721 - LPG GPA 8217 Z721 - LPG GPA 8217 Reading group - Descri Z721 - LPG DENSITY 1 Z721 - LPG DENSITY 1 Description	scription: DENSITY 15 DENSITY 15 ption: 5 °C, MQCI 5 °C, MQCI	°C, N °C, N	Petroleum /IQCI /IQCI	Description Input parameters:	Value	Unit	Measu	remen	t unit f	:ext	
BCP - QuantityWare: B Conversion group - Des Z721 - LPG GPA 8217 Z721 - LPG GPA 8217 Reading group - Descri Z721 - LPG DENSITY 1 Z721 - LPG DENSITY 1 Description	scription: DENSITY 15 DENSITY 15 ption: 5 °C, MQCI 5 °C, MQCI Value	ons - °C, N °C, N Unit	Petroleum /IQCI /IQCI		Value 20.000000					iext	
BCP - QuantityWare: B Conversion group - Des Z721 - LPG GPA 8217 Z721 - LPG GPA 8217 Reading group - Descri Z721 - LPG DENSITY 1 Z721 - LPG DENSITY 1 Description nput parameters: Deserved temperature	scription: DENSITY 15 DENSITY 15 ption: 5 °C, MQCI 5 °C, MQCI Value 20.000000	Ons - °C, N °C, N Unit	Petroleum AQCI AQCI Measurement unit text	Input parameters:		CEL	degree	Celsi	us		r
BCP - QuantityWare: B Conversion group - Desc Z721 - LPG GPA 8217 Reading group - Descri Z721 - LPG DENSITY 1 Description nput parameters: Deserved temperature Test density(vac.)	scription: DENSITY 15 DENSITY 15 ption: 5 °C, MQCI 5 °C, MQCI Value 20.000000 601.000000	°C, N °C, N °C, N Unit CEL KGV	Petroleum /QCI /QCI Measurement unit text degree Celsius	Input parameters: Observed temperature	20.000000	CEL KGV	degree kilograi	Celsi n per	us cubic		r
BCP - QuantitýWare: B Conversion group - Descri Z721 - LPG GPA 8217 Reading group - Descri Z721 - LPG DENSITY 1 Description nput parameters: Deserved temperature Test density(vac.) Test temperature	scription: DENSITY 15 DENSITY 15 DENSITY 15 5 °C, MQCI 5 °C, MQCI Value 20.000000 601.000000 15.000000	°C, N °C, N °C, N Unit CEL KGV	Petroleum /QCI /QCI Measurement unit text degree Celsius kilogram per cubic meter	Input parameters: Observed temperature Test density(vac.)	20.000000 601.000000 15.000000	CEL KGV CEL	degree kilograi	Celsi n per	us cubic		r
BCP - QuantityWare: B Conversion group - Desc Z721 - LPG GPA 8217 Z721 - LPG GPA 8217 Reading group - Descri Z721 - LPG DENSITY 1 Z721 - LPG DENSITY 1 Description nput parameters: Deserved temperature fest density(vac.) fest temperature dydrometer corr. indicator	scription: DENSITY 15 DENSITY 15 DENSITY 15 5 °C, MQCI 5 °C, MQCI Value 20.000000 601.000000 15.000000	°C, N °C, N °C, N Unit CEL KGV	Petroleum /QCI /QCI Measurement unit text degree Celsius kilogram per cubic meter	Input parameters: Observed temperature Test density(vac.) Test temperature	20.000000 601.000000 15.000000	CEL KGV CEL	degree kilograi	Celsi n per	us cubic		r
BCP - QuantitýWare: B Conversion group - Des Z721 - LPG GPA 8217 Reading group - Descri Z721 - LPG DENSITY 1 Z721 - LPG DENSITY 1 Description nput parameters: Dbserved temperature Test density(vac.) Test temperature Hydrometer corr. indicator Transaction quantity:	scription: DENSITY 15 DENSITY 15 DENSITY 15 5 °C, MQCI 5 °C, MQCI Value 20.000000 601.000000 15.000000	ons - °C, N °C, N Unit CEL KGV CEL	Petroleum /QCI /QCI Measurement unit text degree Celsius kilogram per cubic meter	Input parameters: Observed temperature Test density(vac.) Test temperature Hydrometer corr. indicator	20.000000 601.000000 15.000000	CEL KGV CEL	degree kilograi	Celsin n per Celsin	us cubic		r
BCP - QuantityWare: B Conversion group - Des Z721 - LPG GPA 8217 Z721 - LPG GPA 8217 Reading group - Descri Z721 - LPG DENSITY 1 Z721 - LPG DENSITY 1	scription: DENSITY 15 DENSITY 15 5 °C, MQCI 5 °C, MQCI 20.000000 601.000000 15.000000 X	ons - °C, N °C, N Unit CEL KGV CEL	Petroleum AQCI AQCI Measurement unit text degree Celsius kilogram per cubic meter degree Celsius	Input parameters: Observed temperature Test density(vac.) Test temperature Hydrometer corr. indicator Transaction quantity:	20.000000 601.000000 15.000000 X	CEL KGV CEL	degree kilograi degree	Celsin n per Celsin	us cubic		r

Apparently, there are no differences, thus the scenario has not been changed (which could also be the cause of the error).

If you click the application (BCP), the configuration data is displayed and compared with the current system data:

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< SAP Measurement Cockpit: A	nalyze My Scena	rio - (Configura	ation Ta	ables		
✓ ✓ ✓ 🚺 Information Cancel	. (\$ (<u>)</u> (<u>)</u>			2. Q ⁺	a .		°ca Exit
			Ň	4 4	ter Lø	, c_	
Analyze Scenario							~
Scenario Z70B - My second BCP scenario Application - QuantityWare: Bulk Calculations - Petroleur	n						
Con.Grp.: Z721 -LPG GPA 8217 DENSITY 15 °C, MQCI Status:							
Number of tables: 29 Tables with differences: 1							~
n Description	 Table Name	Status	Equal Differ	ent Snap	shot DB or	lv	
Quantity Conversion Settings		oluluo	Equal Direct				^
Maintain reading group data							
Definition of Reading Groups	OIB RDGRDEF	:-)	<u>1</u>				
Description of Reading Group Definition	OIB RDGRDEFT	:-)	<u>1</u>				
Reading group : Define parameters for a conversion group	OIB READINGGROUP	:-)	<u>7</u>				
Description of reading group parameter	OIB RDGGROUPT	:-)	<u>7</u>				
Define ranges for reading group data							
Definition of range group for input parameters of r. group	/QTYW/RDGRD CHCk		<u>1</u>				
Description of range group	/QTYW/RDGRT CHCK		<u>1</u>				
Range group data - Input parameters of reading group	/QTYW/READINGCCK	:-(<u>3</u>	<u>1</u>			
Description of range group parameters	/QTYW/READINGCKT	:-)	<u>4</u>				
Conversion group maintenance (liquid & solid products, LPG/I	N						
Definition of Conversion Groups	<u>OIB01</u>	:-)	<u>1</u>				^

As expected, the change of the range data is marked in red and by clicking the "1" in the "Different" column, the change of the reading group range is displayed.

<u> </u>	ettings S <u>y</u> stem <u>H</u> elp	< 🗗	_ 🗆 ×					
< SAP Measurement Cockpit: Analyze My Scenario - Configuration Tables								
✓	✓ il Information Cancel 1 (1) (1) (1) (1) Q Q Q T	□ 1	🏠 Exit					
Comparison tab	ole: /QTYW/READINGCCK							
Rdg. group Parameter name Z721 STSTDENS Z721 OBSTSTDENS	Error:low E low W:low lev. W low Error: high E h. W:high W h. Unit Par. char.	comp. D or H	HV Compone					
			\bigcirc					

Practically seen from an application agents' perspective, this makes complex, laborious debugging of such issues a thing of the past! From a business management perspective, we have "raised the bar" in the areas of data integrity, security and process transparence as we have an easy-to-use automated "audit" check for the most important values in our ERP system – the quantity values.

2.8. Test Case 08 – Assign LPG Conversion Group to Material -Development

Estimated test case execution time: 30 minutes

Now that we have a well-defined conversion group Z721 available, including automated test scenarios (QuantityWare recommends to defined **at least** 4 scenarios per conversion group), we assign the conversion group to a material in the material master at plant level (Oil specific data view).

In our example development client, we utilize transaction MM02 (Change Material) and a commercial propane / butane, for which no UoM group and conversion group assignment had been done before (We can always change the conversion group):

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< SAP Change Material PROPANE_BUTANE (Finished products))			
✓ \square \square \square \square Additional Data \square Org. Levels More \vee	□	23	°	Exit
K Basic data 2 Oil-specific data Plant data / stor. 1 Plant data / stor. 2 Accounti	~ ~			
Parallel inventory management and excise duty processing				
Base Unit of Measure KG				
UoM Group ZTM Q BCP TRAINING UOM GROUP				
Conv. Group Z721 LPG GPA 8217 DENSITY 15 °C, MQCI				
Air Buoy. Fact.				
Fix. density Conv.coeff				
Excise Duty Group Oil content % Cust.tariff nr				
Plant-to-plant transfer				
Transfer sign				
Localization - Brazil				
Material tax group				

Let's go back to the Petroleum Measurement Cockpit, tab strip "QCI Products" and select "Conversion Group for Materials":

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< SAP Petroleum Measurement Cockpit				
✓ 🔁 🖓 😧 🖓 QuantityWare Service Portal More ∨	□.	5	°	Exit
Units of Measurement Print Standards Lists QCI Configuration QCI Products Test Tools				
Monitor Bulk Material Assignment				
Change Legacy Conversion Groups				
C QuantityWare the quartity corries sion solution				

We enter e.g. the material code and plant and select "Execute" (F8):

<u> </u>	Help			£	_	□ ×
< SAP Meas	surement Cockpit: Display Conversion Group for Materials					
✓ @ ©	Cancel	ē	□ ,	5	°	Exit
Select material numbers						
Material						
Plant	PROPANE_BUTANE Q Image: Constraint of the second s					
Material Type						
Materials w/o. deletion flagShow missing conversion groups						

From this central list, you can monitor the quantity conversion status for all materials in production, e.g. execute manual test scenario runs if errors have occurred, analyze the test scenario log status (typically the test scenarios should be executed via a periodic job in background) or perform a snapshot analysis:

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3. Summary

The BCP Test Manual provides overview guidance for testing the QuantityWare BCP solution and obtaining a detailed overview on the BCP capabilities.

The eight (8) test cases described in this document provide a quick and goal-oriented way to define an LPG conversion group for production usage. In addition, the importance of automated test scenarios is emphasized which is, with respect to time, typically the major effort in an implementation project (see BCP PAIG documentation for further details). Test scenarios can and should be transported through your system landscape together with your conversion group configuration, once defined in your development client. If your organization attributes value to auditing and auditable processes, test scenarios must be created, distributed and used.

As noted in test case 02, one of the most challenging tasks is the correct assignment of a BCP template conversion group to your bulk materials. In addition, the test cases described in this document assume that no further configuration adjustments to a template conversion group is required, which is not always the case. E.g. many template conversion groups are equipped with configuration options for specific requirements - trained experts have to decide whether changes are required before moving a Z*** copy to production.

Thus, if you decide to purchase and implement QuantityWare BCP, careful inspection, validation and implementation of BCP <u>by certified BCP consultants</u> or staff is strongly recommended - to save time and effort, but also to ensure that the configuration of such a fundamental system area has been performed accurately and correctly.

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