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Lab DSE-5078

Designing a Configuration Aware Reporting Solution for Product Line Engineering

February 2015



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Overview

This lab demonstrates how the IBM solutions for Reporting and Analytics can help customers applying DevOps and Continuous Engineering using the Collaborative Lifecycle Management and Systems and Software Engineering solutions.

In this lab you will get hands on experience with

- IBM Rational solutions for Reporting and Analytics
- IBM Rational Quality Manager
- IBM Rational DOORS Next Generation
- IBM Rational Configuration Management

You will also deepen your understanding in

- Configuration Management concepts
- Lifecycle artifacts and traceability
- Self-serve query and report creation
- Dashboards and report widgets
- Configuration aware reporting

Over the course of this lab, you will explore how the IBM Jazz Reporting Service supports Configuration Management to:

- Provide self service capability for Team members, Team leads and Administrators to create shared or private reports that support the product development lifecycle
- Access and display information about lifecycle artifacts and traceability links across the product development lifecycle
- Scope reports to the configurations used by the product development team
- Design personal or project dashboards with widgets that show reports

Lab Setup

This lab will use a Jazz server running various services for Configuration Management, Requirements Management, Quality Manager and Reporting within a VMware image. The Jazz server hosted on this image will be accessed through a web client to access needed applications and data, within the lab activities. Combining the server and the clients is not a normal configuration but is required to get all the resources needed for this lab into an easily portable image.

The VMWare image with the Jazz server should already been started by the lab staff. As a first step in this lab you may optionally validate that the Jazz server is running on your machine. You may also proceed directly to next main section in the lab.

Validating that the Jazz server is running

- 1. Log into the Windows server
 - a. Press Ctrl-Alt-Del
 - b. Log in as
 - i. User: Administrator
 - ii. Password: Rati0nal
- 2. Check if the Tomcat server is running
 - a. In the Windows Taskbar, look for a Java program icon and a Tomcat server process.



b. Click on the Java program icon to open the Tomcat server process.

🛃 Tomcat	_ 🗆 🗙
INFO: Patch service started Dec 12, 2014 4:21:28 AM com.ibm.team.osgi.patch.PatchConfigurator addHooks INFO: Looking for patch directory in "G:\IBM\JazzTeanServer\server\patch" Dec 12, 2014 4:21:28 AM com.ibm.team.osgi.patch.PatchConfigurator addHooks INFO: No patches found	
DNEW: NO PACENES FOUND SER43: Class path contains multiple SLF4J bindings. SEF4J: Found binding in [bundleresource://461.fvk10700022599/org/slf4j/impl/S cLogggerBinder.class]	tati
SLF4J: Found binding in [bundleresource://461.fwk1070022599:1/org/slf4j/impl ticLoggerBinder.class] SLF4J: Found binding in [bundleresource://461.fwk1070022599:2/org/slf4j/impl	
ticLoggerBinder.class] SLF4J: Found binding in [bundleresource://461.fwk1070022599:3/org/slf4j/impl	
ticLoggerBinder.class] SLF4J: Found binding in [bundleresource://461.fvk1070022599:4/org/slf4j/impl ticLoggerBinder.class]	
SLF4J: See http://www.slf4j.org/codes.html#multiple_bindings for an explanat Dec 12, 2014 4:22:00 AM org.apache.catalina.startup.HostConfig deployWAR	ion.
INFO: Deployment of web application archive C:\IBM\JazzTeamServer\server\tom webapps\ccm.war has finished in 33,618 ms	cat∖
Dec 12, 2014 4:22:00 AM org.apache.catalina.startup.HostConfig deployWAR INFO: Deploying web application archive C:\IBM\JazzTeamServer\server\tomcat\ pps\climhelp.war	weba
	-

c. Confirm that the server is running.

If the Tomcat server process is running, proceed to next main section in the lab. If no Tomcat server process is running, proceed to the step below to 'Starting the server' 3. Starting the server

ONLY PERFORM THIS STEP IF THE JAZZ SERVER IS NOT STARTED

a. On the desktop, double click on the Start the Jazz Team Server icon



A command window titled **Tomcat** will open.
 In 3-5 minutes you'll see the output, as shown above, with the "Server startup in ..." message.

Note: Be patient. Starting the servers is an operation that a real user never does. Users normally run continuously on a dedicated server environment managed by an administration team.

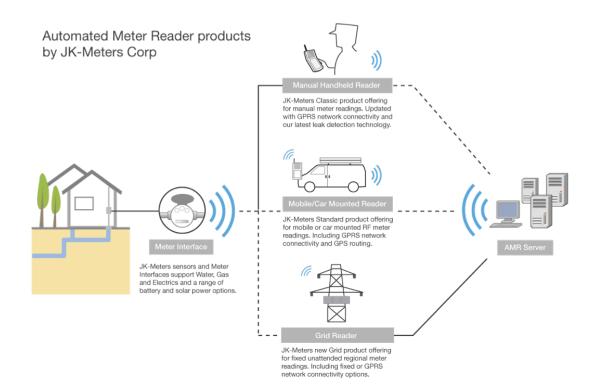
If in doubt on the state of the server, check with the lab staff before proceeding.

c. Minimize the Tomcat server process window (DON'T click X!).

Introduction to Automated Meter Reader

This lab uses artifacts from the Automated Meter Reader sample data for reporting. The Automated Meter Reader sample uses a fictitious company JK Meters Corp, aspiring leaders of Smarter Flow Products for Utilities.

The Metering Division at JK Meters Corp has a range of Automated Meter Reader products in its product line. The most successful product is the Automated Meter Reader for Water Flow (see figure below). The product consists of meter interface units mounted on water pipes. The meter interface unit measures flow and delivers data to handheld or car mounted meter readers. The registered meter readings are uploaded from the handheld devices to the AMR server data management system manually. Uploading of data is performed continuously by the mobile meter readers using a mobile network connection, or manually when returning to the office at the end of the day when using the manual meter reader product. The Metering Division is currently investing in improved features in the product lines and new AMR products. An innovative new AMR Grid product reduces the operational cost of utility services by providing fixed grid meter readers that continuously reads a wireless grid of residential or industrial meter interface units and uploads data over a fixed network connection.



The Automated Meter Reader products are configured from reusable components. These component subsystems are developed and delivered by the Meter Reader, Meter Interface and AMR Sever platform teams. The platform teams deliver the component subsystems with feature variability for the product line. For example, the Meter Interface team delivers wired and wireless variants of the component for the Manual and Mobile products. The Meter Reader team delivers variant components for Manual, Mobile and Grid products.

AMR Manual	Meter Interface	Manual Handheld Reader	AMR Server
AMR Mobile Market variability for US, EU and UK	Meter Interface	Mobile/Car Mounted Reader	AMR Server
AMR Grid	Meter Interface	Grid Reader	AMR Servor

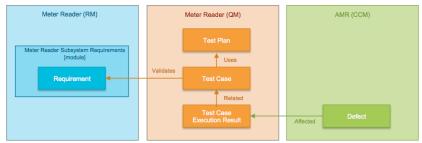
The Automated Meter Reader products have been delivered to utility customers in US. JK Meters Corp is growing its market share by developing variants for other regional markets. The variants are configured with regional requirements on power voltage, dimensions on pipe mounting, regional units of flow and volume, language configuration for the handheld meter readers and regional city maps for GPS routing.

In this lab you will explore how Pete, the Project Manager for the AMR Mobile products, is using the IBM Jazz Reporting Service to build queries that report on the test coverage and latest test results for the Mobile US and Mobile EU products under development. Pete will also share the reports with his team on the project team dashboard.

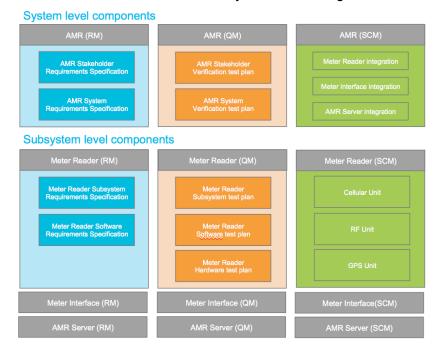
Introduction to Configuration Management Concepts

In this initial part of the lab we will introduce key concepts in configuration management, like *artifacts, components, streams* and *global configurations.*

The Automated Meter Reader (AMR) development teams are using the Systems and Software Engineering solution from IBM to manage the *system engineering artifacts* like requirements, tests, designs and source code. The artifacts are linked using traceability relationships. Examples of such links are shown in the figure below.



In blue we indicate requirements for the 'Meter Reader (RM)' component specified in a 'Meter Reader Subsystem Requirements' module. Each requirement may be linked to a Test Case in the 'Meter Reader (QM)' component. Related requirements and test cases are linked using *validates* links. Test Cases are linked to *using* Test Plans and the results of run tests are linked to *related* Test Case Execution Results. In case a test run fails a Defect may be linked using an *affected* link.

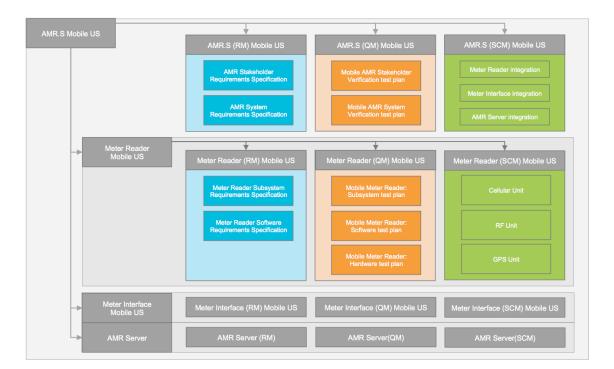


As indicated in the figure above, a *component* is a unit of organization consisting of a reusable set of artifacts. A *configuration* is a set of specific artifacts versions of a component. A modifiable (mutable)

configuration of a component is called a *stream*. An un-editable (immutable) configuration of a component is called a *baseline*. A baseline is used to record the state artifact versions in a release. Hence creating two separate configurations for EU and US will greatly help in managing variability of artifacts like requirements and tests across the two markets.

The Automated Meter Reader (AMR) teams are using components to organize the lifecycle artifacts under development. The teams have defined components for the system / product level and at each subsystem level, figure below. Separate components are used, at each level, to manage requirements, tests, designs and source code.

Stream and baselines can be added as *contributions* into *global configurations*. The Automated Meter Reader (AMR) teams are using such global configurations to assemble configurations of system and subsystem components containing requirements, tests, designs and source code into product definitions for the AMR product line. An example of the 'AMR.S Mobile US' global configuration is shown in the figure below. Note that global configurations can be hierarchical to support component reuse. The 'Meter Reader Mobile US' subsystem global configuration is a contribution to the 'AMR.S Mobile US' configuration.



This lab will not explore the detailed concepts of configuration management. You will focus on building reports and use predefined global configurations for reporting. If you do want to further deepen your understanding of configuration management use the appendix section of this lab handbook to use the Rational Configuration Management application to explore the global configurations and Rational DOORS NG and Rational Quality Manager to work with requirement, test cases and traceability links in a configuration context.

Build a new report from scratch

In this part of the lab you will act as Pete, the Project Manager, and you want to build a new report to be used on the QM dashboard. In building the new report you will create and preview a new lifecycle query.

Logging in to the Jazz applications

- 1. Open the Jazz applications in the Browser
 - a. Click on the Firefox icon on the Windows taskbar.



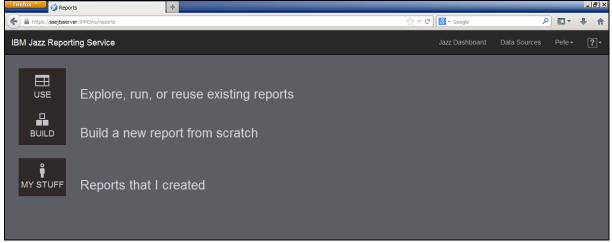
- b. Choose the **cm** bookmark to open the Rational Configuration Management application Alternatively enter the URL **https://ssejtsserver:9443/vvc/web**
- c. Log in as user: pete with password: pete

•	
122	
TEAM SERVER	
TEAM SERVER	
The Jazz Team Server at ssejtsser	ver in Jazz requires a user ID and password:
208	User ID; pete Password:
	Password.
	Remember my User ID
	Log In
Licensed Material - Property of IBM Corp. © Copyright logo, Jazz, and Rational are trademarks of IBM Corpora Eclipse is a trademark of Eclipse Foundation, Inc. Java trademarks of Oracle and/or its affiliates in the United	IBM Corp. and its licensors 2008, 2014. All Rights Reserved. IBM, the IBM ation, in the United States, other countries and regions, or both. Built on a nd all Java-based Hademarks and logos are trademarks or registered States, other countries and regions, or both.
IBM.	Rational. software

Start building a new report

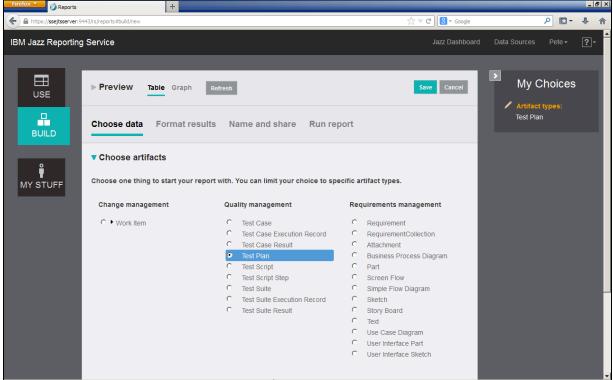
- 1. Choose the **jrs** bookmark to open the IBM Jazz Reporting Service. Alternatively enter the URL https://ssejtsserver:9443/rs/reports
- 2. Wait for the Jazz Reporting Service application to load.

Note: Be patient. It takes a minute for the reporting services to start and the application to load.

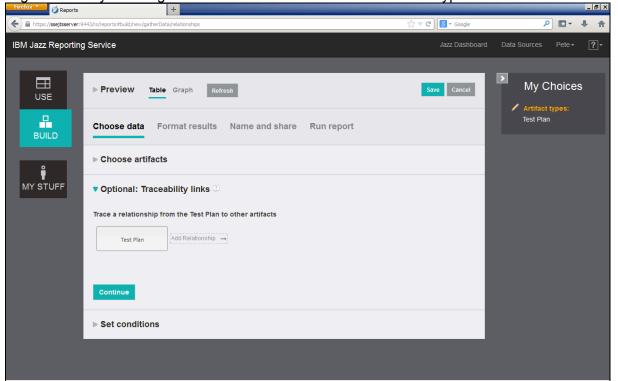


3. In the IBM Jazz Reporting Service home page, click on **BUILD** to create a new report from scratch.

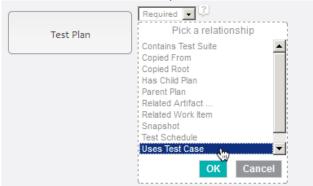
- 4. The Report Builder starts with the first page to Choose data.
 - Select the Test Plan artifact type in the Quality management section.



- 5. Scroll down on the page and click the **Continue** button, or alternatively, choose the **Optional: Traceability links** section.
- 6. The Traceability links sections opens and visualize the selected reporting artifacts using a diagram. Initially this diagram shows the selected Test Plan artifact type.



7. In the diagram, click on **Add Relationship...** area to the right of the Test Plan artifact. A list of artifact relationships to a Test Plan is shown.



8. Choose the **Uses Test Case** relationship and click **OK**.

The Uses Test Case traceability link to a Test Case is added to the diagram Note: You can remove traceability links by clicking the **X** icon on a relationship or an artifact or you can click the **Back** button to edit the last relationship in the diagram.

Test Plan	Required Uses Test Case	X Test Case	Add Relationship →
		←Back	

9. Using the Path Type you can specify what conditions to apply for a traceability link. For example, choose Required if you only want to report on Test Plans that have linked Test Cases, or Not Exists if you want to report on Test Plans that have no linked Test Cases. For this lab we will use the default **Required** path type.

Optional: Traceability links	Path Type	
Test Plan	Required: Only show results that include this relationship Optional: Show results even if they don't include this relationship Not Exists: Show only results that don't have this relationship	l Relationship →

Add a **Related** relationship from the Test Case to a Test Case Result. Confirm by clicking **OK**.
 Note: Your choices are updated on the right side of the application window. Click on the > icon to slide the My Choices to the side.

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IBM Jazz Reporting	y Service	Jazz Dashboard	Data Sources Pete ▼ ? ▼
	▶ Preview Table Graph Refresh Choose data Format results Name and share Run report	Save Cancel	My Choices Artifact types: Test Plan
BUILD	Choose artifacts	_	 ▼Traceability links: <test plan=""></test> → Uses Test Case → <test case=""></test>
MY STUFF	▼ Optional: Traceability links ⑦ Trace a relationship from the Test Plan to other artifacts		Columns: 1. Test Plan Id 2. Test Plan 3. Test Plan URL
	Test Plan	n Record	

11. Finally, add an Affected By relationship to a Work Item. Confirm by clicking OK.

Optional: Traceability links	3			
Optional: Traceability links Trace a relationship from the Test Pla		Related Test Case Result	Test Case Result	Pick a relationship Affected By Work Item Executed on Build Executed on Deployment Executes Test Suite Result Produced By Test Case Execution Record Related Work Item Reports on Test Case Reports on Test Plan Test Schedule OK Cancel
				OK Cancel

Traceability links identifying the artifacts to be reported on are now complete. The report will contain Test Plans and Test Cases that have failed when running and have a linked Defect.

We now want to format the report and add more information from the artifacts. For example, we are interested in seeing test case Verdict in the report. We also want to report on the State of the Defect to track if work on a fix has been started by the development.

Formatting the new report

 Switch to the Format results tab in the Report Builder. The default columns for the artifacts in the reports are shown.

irefox 🔪 💋 Reports	+					_	_ 8
https://ssejtsserver:	9443/rs/reports#build/new/createTableDa	ita		☆ マ C 8 - Goo	ogle	۹ 🔊	• 🕂 1
BM Jazz Reportin	g Service			Jazz Dasi	hboard Data So	ources Pete -	?-
	▶ Preview Table C	Sraph Refresh		_	_	Save Cancel	
BUILD	Choose data Form	nat results Name and	d share Run report				I
0	Columns						
MY STUFF	Format the layout of your	report.					
	Column Label	Attribute	Artifact Type	Sort Type	Sort Order	Actions	
	Test Plan Id	ld	Test Plan	•		θ×	
	Test Plan	Title	Test Plan	•		� ↓ ×	
	Test Plan URL	URL	Test Plan	•		☆ ↓ ×	
	Test Case Id	ld	Test Case	•		☆ ↓ ×	
	Test Case	Title	Test Case			� ↓ ×	
		URL	Test Case	•		☆ ⊕ ×	

Note: Each artifact is by default reported with its Id, Title and URL.

2. To preview the report, expand the Preview section at the top to the screen. This generates a view showing a small subset of the currently selected artifacts, traceability links and report columns so that you can see how your results will be formatted.

▼ Previe	Table Graph	Refresh					Save Cancel
) Test Plan Id Test	t Plan (linked with URL)	Test Case Id	Test Case (linked with URL)	Test Case Result Id	Test Case Result (linked with URL)	Work Item Id	Work Item (linked with URL)
3 Mete	r Reader: Subsystem test plan	139	The Meter Reader shall have the ability to request and receive Leak diagnostic data from the MU.	110	The Meter Reader shall have the ability to request and receive Leak diagnostic data from the MIU_AMR Server Windows, Meter Reader Mobile US_Meter Interface Mobile US	133	Failing Test Case ăquot, The Meter Reader shal have the ability to request and receive Leak diagnostic data from Execution Record ăquot, The Meter Reader shal have the ability to request and receive Leak diagnostic data from the MIU_AUR Server Windows_liter Wadows_liter Mobile USSauct

3. In the **Format results > Columns** section, locate the **Test Plan URL** and click on the **X** to remove the column.

Test Plan URL	URL	Test Plan	-	û ⊕ _∰
Test Case Id	ld	Test Case	•	Remove from the report

Note: Removing the URL column on an artifact will disable the clickable hyperlink and rich hovers. After removing the URL, preview the report and note that the hyperlink on the Test Plans has been removed.

Test Plan Id	Test Plan	Test Case Id	Test Case (linked with URL)	Test Case Result Id	Test Case Result (linked with URL)	Work Item Id	Work Item (linked with URL)
3	Meter Reader: Subsystem test plan	139	The Meter Reader shall have the ability to request and receive Leak diagnostic data from the MIU.	110	The Meter Reader shall have the ability to request and receive Leak diagnostic data from the MUAMR Server Windows_Meter Reader Mobile US_Meter Interface Mobile US	133	Failing Test Case "The Meter Reader shall have the ability to request and receive Leak

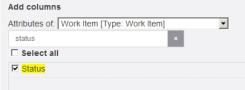
Scroll down on the page and locate the Add columns section.
 From the Attributes of: list, choose the Test Case Result artifact type.

Add columns		
Attributes of: Te	est Case Result [Type: Test Case Result] 💌	
Select all Te	est Case Result [Type: Test Case Result] est Case [Type: Test Case] est Plan [Type: Test Plan]	
Category V	/ork Item [Type: Work Item]	
Channel		

5. In the **Attributes of:** search field, type verdict. Select the **Verdict** attribute and click **Add columns**.

Add columns
Attributes of: Test Case Result [Type: Test Case Result]
vel
C Select all
Points Inconclusive
Verdict
Add columns

6. Select the Work Item artifact type, the Status attribute and click Add columns



7. In the list of selected columns, locate the Test Case Result Verdict attribute (at the end of the list). Click the Arrow to move the column up in the list. Move it to just below the Test Case Result Id column.

Test Case Result Id	ld	Test Case Result	•	û 4 x
Test Case Result Verdict	Verdict	Test Case Result	•	€ ×
Test Case Result	Title	Test Case Result	•	Move up (Click or Press <enter> key to invoke)</enter>
Test Case Result URL	URL	Test Case Result	•	û 🗘 🗙

8. Scroll up on the page and preview the changes to the report.

▼ Pre	eview	Table	Graph Refresh					Save	Cancel
Test Plan Id		Test Case Id	Test Case (linked with URL)		Case Result Verdict	Test Case Result (linked with URL)	Work Item Id	Work Item (linked with URL)	Work Item Status
3	Meter: Reader: Subsystem test plan	139	The Meter Reader shall have the ability to request and receive Leak diagnostic data from the MIU.	110	Blocked	The Meter Reader shall have the ability to request and receive Leak diagnostic data from the MIU_AMR Server Vindows_INeter Reader Mobile US_Meter Interface Mobile US	133	Failing Test Case ",The Meter Reader shall have the ability to request and receive Leak diagnostic data from the MUL ", when executing Test Execution Record ",The Meter Reader shall have the ability to request and receive Leak diagnostic data from the MIU_AAIR Server Windows_Meter Reader Mobie US_Meter Interface Mobile US"	New

Note: Verdict has been placed to the right of the Test Result ID and the Status of the Defect has been added to the report.

The editing of the reports is complete and we will proceed and save our work as a reusable report.

Saving the new report

 Switch to the Name and share tab in the Report Builder. In the Details section, enter a Report name and choose Public from the Privacy and Sharing options

Firefox		+			_		_	_ 8 ×
https://ssejtsserver:94	143/rs/reports#build/new/createRe	port/name-description		☆ ▼ C	8 - Google		• 🖾	↓ ∧
IBM Jazz Reporting	Service				Jazz Dashboard	Data Sources	Pete -	?-
	▶ Preview Tabl	Graph Refresh				Save	Cancel	
BUILD	Choose data F	ormat results Name and share	Run report					u
BUILD	Details							
Ĥ	Report Name:*	Test case results with defects						
MY STUFF	Description:							u
	Tags:			<u> </u>				
	Privacy and Sharing:	Private (visible only to me)						
	Save	Public (publish to catalog) Private (visible only to me) Privacy and Sharin	g					
	Continue							

- Click Save to publish your report.
 You get a visual confirmation that the report was saved.
- 3. To view your report, and reports shared by others, click on USE.

Firefox *	🥖 Reports			+		_	_	
🗲 🔒 htt	ps:// ssejtsserver :9	9443/rs/re	eports#use			∰ ⊽ C 8 -	Google	▶ ₽ •
IBM Ja	zz Reporting	g Ser\	/ice			Jazz Dashboard	Admin Data Sources	Rational - ?-
	JSE	Fin	d a Report	t	× 3. 凸	Group by Tag 🔽	Filter: Report -	Type to Filter
			Actions	Туре	Report Name	Description	Sharing	Owner
	JILD		•	Set Arms Online Best Best	Test case results with defects		Public	Rational
	STUFF							

Note: You can quickly find report by typing in a portion of the name in the **Type to Filter** field.

4. Click on the **Report Name** to run the report.

Your report needs information on what configuration context to use when running the report query. In the **Choose a Configuration** search box, type "Meter Reader (QM) Mobile US". <u>Select the **Meter Reader (QM) Mobile US (Stream)** configuration from the search result.</u>

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+ ttps://ssejtsserv	er:9443/rs/reports≢view=5	r ⊂ C Soogle	₽ ₽ ♠
IBM Jazz Report	ing Service	Jazz Dashboard Admin Data Sources	s Rational - ? -
	Test case results with defects	6	Duplicate Edit <
USE	Filters -		Export
	Edit		×
BUILD	Choose a Configuration *		ŝ.
56.25	meter reader (qm) mobile ×		
•	Meter Reader (QM) Mobile US (Stream)		
Ĥ	C Meter Reader (QM) Mobile 2.0 US.GA (Baseline)		
MY STUFF	C Meter Reader (QM) Mobile 3.0 EU.GA (Baseline) C Meter Reader (QM) Mobile 3.0 US.GA (Baseline)		
	C Meter Reader (QM) Mobile EU (Stream)		•
	None		
			Preview Run

5. Click Run to generate the report.

Firefox V 🖉 🧭 Reports			+				_		_		8 ×
Https://ssejtsserver:	9443/rs/reports#view=5&fil	terValue	s={"version"%3A"2.0"%2C"values"%3A{"oslc_config.	context"%3	3A["https%3	A%2F%2Fssejtsserver% ☆ マ C	2	م	•	+	^
IBM Jazz Reportin	g Service					Jazz Dashboard Adm		ata Sources Rati		?-	Ê
USE BUILD MY STUFF	Test case re Filters - 20 Test Plan Id Test Plan Id Test Plan 3 Meter Reader: Subsystem test plan	e Test Case Id	s with defects Test Case The Meter Reader shall have the ability to request and receive Leak diagnostic data from the MD.		Test Case	1-2 of 2 items Next M Test Case Result The Meter Reader shall have the ability to request and nective Leak diagnostic data from the NU_ANR Server Vindows, Meter Reader Mobile US_Meter Interface Mobile US	Work Item Id 133	Uuplicate Work Item Faling Test Case Aquot.The Ideire Reader shal have the ability to request and receive Leak diagnostic data from the MIU.8quot, when execution Test Execution Record Squot.The Ideire Reader shall have the ability to request and receive	Edit Export+ Item Status New	-	<
	-	142	The Meter Reader equipments, which include Handheid Meter Readers, are used to communicate with the Meter Interface and the AMR Server to commission and extract metering information.	111	Biocked	The Meter Reader equipment's, which include Handheid Meter Readers, are used to communicate with the Meter Interface and the AINE Server to commission and extract metering informationAINE Server Windows_Meter Reader Mobile US_Meter Interface Mobile U	132	Leak diagnostic data from the MU_AMR Server Windows_Meter Reader Mobile US_Meter Interface Mobile US" Faling Test Case & quot;The Meter Reader equipments, which Include Handheid Meter Readers, are used to communicate with the Meter Interface and the AMR Server to commission and extract metering information." when executing Test	New		

6. The report provides both links and rich hovers to the artifacts.

8 × 💋 Reports + - 🖾 + A ()@ 8 //ssejts IBM Jazz Reporting Service Test case results with defects The Meter Reader shall have the ability to request and receive Leak diagnostic data from the MIU_AMR Server Windows_Meter Reader Mobile US_Meter Interface Mobile US Export-4 1-2 of 2 items Next M Overview P Blocked Result State: 🖉 Draft Work Item Id Work Item Status Environment AMR Server Windows_Meter Reader Mobile US_Meter Interface Mobile US Test Case Result Work Item Test Case: The Meter Reader shall have the ability to request and receive Leak diagnostic data from the MIU. The Meter Reader shall have the ability to request and receive Leak diaphostic data from the 133 Failing Test Case "The Meter Reader New Details MIU. AMR Server Windows Meter Reader Mobile shall have the ability to request and receive Type: Modified: Test Case Result Start Time: Dec 17, 2014 3:33:00 AM US Meter Interface Mobile US Dec 17, 2014 3:37:33 AM End Time: Dec 17, 2014 3:33:00 AM Leak diagn tic data Host Name: Total Run Time: 0 sec cuting Test xecution Rec Test Plan Meter Reader: Subsystem test Iteration: AMR 4 0 - M1 plan e the ability to Owner: Unassigned Originator: Rational Test Script: Project Area: Meter Reader (QM) he MIU._AI 100 Team Area: Weight •

Place the cursor over a Test Case Result. Wait a few seconds for the rich hover to open.

7. Optionally, click on a link to open one of the test cases in IBM Rational Quality Manager or a defect in IBM Rational Team Concert.

Note: You can hold down the ctrl-key when clicking to open the test case or defect in a new browser tab.

Using reports on Dashboards

In this part of the lab you will continue to act as Pete, the Project Manager, and add your new report on the QM dashboard.

Add a report to the QM Dashboard

- 1. Choose the **qm** bookmark to open the IBM Rational Quality Manager application. Alternatively enter the URL **https://ssejtsserver:9443/qm/web**
- 2. In the All Projects list, click Explore Dashboard in the 'Meter Reader (QM)' section.



3. On the **Meter Reader (QM) Project Dashboard**, click the **+** icon to add a new tab. Enter "Meter Reader Mobile US" as title of the new tab.

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4. Drop down the context menu on the new tab and choose Layout > 1 Column.

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	Layout • 1 Column (m) 2 Columns 3 Columns		

5. Click on **Add Widget** to add a new widget to the dashboard from the service catalog. Select the **Jazz Reporting Service** from the **Service Catalog** list

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General	Jazz Reporting Service (Jazz Reporting Service)	AppScan Enterprise Training	
Help	Lifecycle Query Engine (LQE)	Overview	
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Quality Managem	👩 Rational Jazz Team Server (ssejtsserver:9443/jts)	An overview of the Web Application Security and AppScan Tester Edition	
Rational Test Lab	Requirements Management (/rm)	Web-based training	

6. Locate the report you created and saved in the previous section of the lab. Select the widget and click **+ Add Widget**.

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Add External Widgets	Fuel injection mod parts Rafiq 51 76 Engine piston regulator Harry 41 67 Pump themometer Jinia 27 61 Air tog safety monitor Julia 10 88 Air tog safety monitor Julia 10 88	C7 Dec		

Note: The widget may require you to log in. Enter pete as user id and password.

7. To run the report you need to provide a configuration context.

Repeat the steps in the previous section to configure with the 'Meter Reader (QM) Mobile US' stream configuration.

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Click **Save** to persist the configuration context for this widget.

8. The generated report is displayed in the widget.

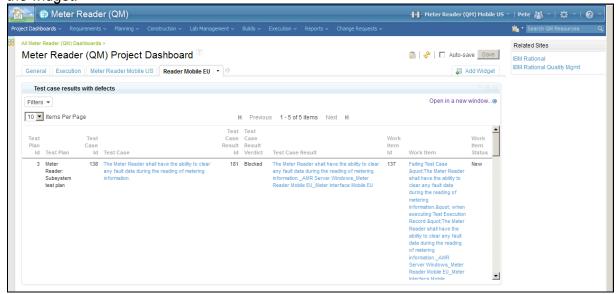
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	Meter Reader: Subsystem test plan	139	The Meter Reader shall have the ability to request and receive Leak diagnostic data from the MIU.	110	Blocked	The Meter Reader shall have the ability to request and receive Leak diagnostic data from the MIUAMR Server Windows, Meter Reader Hobie US_Meter Interface Mobie US	133	Failing Test Case "The likeler Reader shall have the ability to request and receive Leak diagnostic data from the MIJ. ", when executing Test Execution Record "The likeler Reader shall have the ability to request and receive Leak diagnostic data from the MIJ_AMR Server	New		

Add report on multiple configurations

- 1. Repeat the steps in the previous section to add a second tab to the dashboard.
 - a. Name the tab Meter Reader Mobile EU.
 - b. Set the tab layout to one column
 - c. Add the report widget to the tab
- 2. When choosing the configuration context for the query, choose the 'Meter Reader (QM) Mobile EU' stream configuration.

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Meter Reader (QM) Mobile EU (Stream)	_	
C Meter Reader (QM) Mobile EU.FP1 (Stream) None	<u> </u>	
	Preview Save	

 The report runs on artifacts in the 'Meter Reader (QM) Mobile EU' configuration and displays in the widget.



4. Compare the two reports with Mobile US and Mobile EU defects.

Design your own Dashboard

In this part of the lab is optional and you will explore your design ideas on your reports and dashboards.

You now have basic skills to create reports and dashboards. Return to your design sketches and notes form the initial design ideation session. Use the Jazz Reporting Service to explore your design ideas.

- 1. Pick one or more of the reports you earlier designed
- 2. Create reports using the Jazz Reporting Service report editor
- 3. Preview and save the reports
- 4. Add the reports to a new tab in the QM dashboard

Summary of this Lab

You have in this lab explored the IBM solutions for Configuration Management, Reporting and Analytics

- Exploring Configuration Management concepts
- · Used the global configuration context to navigate and edit artifacts and links
- Built a new query using the query builder
- Configured the query for configuration aware reporting
- Added queries to run as viewlets on a project dashboards

Visit IBM.com for more information on the Configuration Management, Reporting and Analytics capabilities in the Systems and Software Engineering solution.

Appendix – Configuration Management Concepts

You will in this appendix explore the 'AMR.S Mobile US' global configurations used by the Automated Meter Reader (AMR).

Explore global configurations

1. Choose Welcome to Global Configurations from the Global Configurations tool menu



2. In the Quick Search field, type AMR.S

Welcome - Global Configurations	+			
Configuration Management (/vvc)			c	One of the Client Access Licenses expires in 13 days 📥
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		syste	🔒 AMR.S Grid US	
Create a global configurati	on and a second s	• You (AMR.S Manual EU	
To create a global configuration, c	lick the link.	each	application stores its artifacts in oth	herwise unrelated configurations.

Note: The list shows the product configurations defined by the AMR development team. The product line covers the Manual, Mobile and Grid version of the AMR products and configurations for the US and EU markets.

3. From the Quick Search list, select the 'AMR.S Mobile US' global configuration. The global configuration opens in the editor.

https://ssejtsserver:	9443/vvc/gc/web#action=editGlobalConfiguration&configurationUri=https%3A%2F%2Fssejtsserv	ver%3A9443%2Fvvc%	2FglobalConfig	guratior	∰ ▼ C	8 - Google	۹ 🖬 ج
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Meter Reader Mobile US	Default component for Meter Reader Mobile US	Meter Reader stream	Stream	\$	×		
AMR.S (DM) Mobile US	AMR (DM)		Stream	\$	×		
AMR Server US	Default component for AMR Server US	AMR Server stream	Stream	٩	×		

Note: The editor shows the project area configurations that are contributing to the 'AMR.S Mobile US' global configuration. (You may compare this list with the figure in the introduction to this part where we discussed the structure of the AMR global configuration and its contributions.) The contributions in the list cover requirement, test, model and implementation artifacts in IBM Rational DOORS Next Generation, IBM Rational Quality Manager, IBM Rational Rhapsody Design Manager and IBM Rational Team Concert applications.

Optionally, click on the 'Meter Reader Mobile US' global configuration to explore the subsystem configuration.

Working in a Configuration Context

You will now use the traceability links established between the artifacts and navigate in the context of the 'AMR.S Mobile US' global configuration. You will use Rational DOORS NG and Rational Quality Manager to explore requirement and test cases.

- 1. Choose the **rm** bookmark to open the Rational DOORS NG application. Alternatively enter the URL https://ssejtsserver:9443/rm/web.
- 2. The requirement management application loads and opens the All Projects page.

3. Locate the **AMR (RM)** project area in the list and choose the **Show Modules** option.

Firefox * ③ Project Dashboard - Requirements Managem +		
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4. The list of requirements modules in the project area opens.

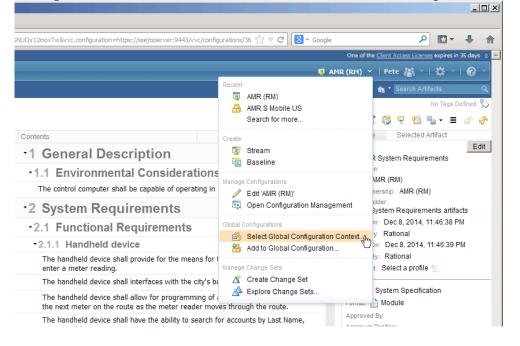
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= 🗁 AMR (RM)			413	AMR Stakeholder Requirements	Stakeholder Specification	Rational	Dec 8, 2014, 11:44:39 PM			
➢ 00 Admin			503	AMR System Requirements	System Specification	Rational	Dec 8, 2014, 11:46:38 PM			
≥ 02 Reference			575	AMR Hazards_Risks	Hazard and Risk Register	Rational	Dec 8, 2014, 11:48:46 PM			
📧 🗁 Module Template										

5. In the list of modules, click on the AMR System Requirements module.

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Views			504	•1 General Description	-	503: AMR Syste	em Requirements	Ed	
Search Views			505	-1.1 Environmental Considerations		Description: Project: AMR (F	244)		
			506	The control computer shall be capable of operating in a normal office environment.		Team Ownership			
Downstream Coverage Requirement Traceability			507	2 System Requirements		Content Folder: AMR System Requirements ar			
Test Coverage			508	-2.1 Functional Requirements			c 8, 2014, 11:46:38 PM		
Jpstream Coverage			509	2.1.1 Handheld device		Created By: Rational Modified On: Dec 8, 2014, 11:46:39 PN Modified By: Rational Is Suspect: Select a profile %			
			510	The handheld device shall provide for the means for the meter reader to manually enter a meter reading.					
			511	The handheld device shall interfaces with the city's backoffice software.		T	Type: 📄 System Specification		
			512	The handheld device shall allow for programming of a defined route, advancing to the next meter on the route as the meter reader moves through the route.		Format: 👔 Mod			
			513	The handheld device shall have the ability to search for accounts by Last Name, Service Address, Meter Number, and Unread Meters.		Approved By: Approver Position	n:		
	514 The handheld device shall have a screen capable of displaying the num accounts that have been read and unread. Display information shall in number of accounts in collection route, number of read accounts, reader account. For completed (read) the display information shall include: the date and time of the last reader accounts.		The handheld device shall have a screen capable of displaying the number of accounts that have been read and unread. Display information shall include: total number of accounts in collection route, number of read accounts, number of unread accounts, the address of each account. For completed (read) accounts, the display information shall include: the date and time of the last reading, summary of usage data, and the id of handheld reading device.						
			515	The handheld device shall allow the meter reader to enter information about meters relocated on a particular route.					
			516	Info captured via the handheld device shall be downloadable via either cable		Module Comm	ents		
Filter by Tag				hookup or wireless signal.	-	Module Links	11		
Filter by Attribute		Showing 71 of	71 Artifac	ts		Where Module	Used		

Note: A global configuration context has not yet been selected and the module is opened in the default 'AMR (RM)' configuration.

6. From the configuration management menu on the banner, choose the **Select a Global Configuration Context...** command. The Select a Global Configuration dialog opens



7. In the Select a Global Configuration dialog, type AMR.S in the search field and select the 'AMR.S Mobile US' global configuration. Click **OK**.

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8. The configuration context is updated to the 'AMR.S Mobile US' on the banner.

🖶 AMR.S Mobile US 🗠

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		506	The control computer shall be capable of operating in a normal office environment.
Downstream Coverage Requirement Traceability		507	2 System Requirements
est Coverage		508	2.1 Functional Requirements
Jpstream Coverage		509	-2.1.1 Handheld device
		510	The handheld device shall provide for the means for the meter reader to manually enter a meter reading.
		511	The handheld device shall interfaces with the city's backoffice software.
		512	The handheld device shall allow for programming of a defined route, advancing to the next meter on the route as the meter reader moves through the route.
		513	The handheld device shall have the ability to search for accounts by Last Name, Service Address, Meter Number, and Unread Meters.
		514	The handheld device shall have a screen capable of displaying the number of accounts that have been read and unread. Display information shall include: total number of accounts in collection route, number of read accounts, number of unread accounts, the address of each account. For completed (read) accounts, the display information shall include: the date and time of the last reading, summary of usage data, and the id of handheld reading device.
		515	The handheld device shall allow the meter reader to enter information about meters relocated on a particular route.
		516	Info captured via the handheld device shall be downloadable via either cable hookup or wireless signal.
		517	The handheld device shall be able to recharge using solar power.
		518	The handheld device shall include a leak indicator.
Filter by Tag	2	519	The handheld device shall include an audible alarm upon leak detection.
Filter by Attribute	2 Showing 7	1 of 71 Artifa	- cts

Note: Only the artifacts in the selected configuration context are shown.

Updating, adding or removing artifacts in the configuration will not impact other configurations, for example requirements in the Manual or Grid products.

9. From the list of Views (on the left side) click on the **Test Coverage** view. The view is applied to the module and adds information about system validation test cases that are linked to system requirements in the module.

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Views	512	The handheld device shall allow for programming of a defined route, advancing to the next meter on the route as the meter reader moves through the route.	22. The handheid device shall allow for programming the next meter on the route as the meter reader moves		to
Downstream Coverage Requirement Traceability	□ 513	The handheld device shall have the ability to search for accounts by Last Name, Service Address, Meter Number, and Unread Meters.	2: The handheld device shall have the ability to search Service Address, Meter Number, and Unread Meters.	for accounts by Last Name,	
fest Coverage 🧳 - Jpstream Coverage	☐ 514	The handheld device shall have a screen capable of displaying the number of accounts that have been read and unread. Display information shall include: total number of accounts in collection route, number of read accounts, number of unread accounts, the address of each account. For completed (read) accounts, the display information shall include: the date and time of the last reading, summary of usage data, and the id of handheld reading device.	Implementation of the state	ormation shall include: total	1
	515	The handheld device shall allow the meter reade to enter information about meters relocated on a particular route.		to enter information about	
	□ 516	Info captured via the handheld device shall be downloadable via either cable hookup or wireless signal.	12: Info captured via the handheld device shall be dow hookup or wireless signal.	nloadable via either cable	
	517	The handheld device shall be able to recharge using solar power.	Y: The handheld device shall be able to recharge usin	g solar power.	
Filter by Tag	518	The handheld device shall include a leak indicator.	27: The handheld device shall include a leak indicator		
Filter by Attribute	519	The handheld device shall include an audible alarm upon leak detection.	S: The handheld device shall include an audible alarn	upon leak detection.	
Information	Showing 55 of 71 Art	ifacts			-

Note: The traceability links are also under configuration management in IBM Rational DOORS Next Generation. Updating, adding or removing artifact links in the configuration will not impact other configurations.

The views in IBM Rational DOORS Next Generation provide a summary of requirements and their traceability links. The Jazz Reporting Service provides additional flexibility in reporting on artifacts and their traceability relations.

10. Click on one of the test cases in the **Validated By** column.

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Test Cases >					Parent Test Plan(s)	
😑 *22: The handheld device shall allow for programming of a defined					AMR System Verification test	
route, advancing to the next meter on the route as the meter					Related Test Suite(s)	
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Note: The configuration context in IBM Rational Quality Manager is set to 'AMR.S Mobile US'. Navigation across artifacts and links are made in context of the selected global configuration.

We have completed our short exploration of product configurations, artifacts and traceability links in

- IBM Rational Configuration Manager
- IBM Rational Quality Manager
- IBM Rational DOORS Next Generation

Teams using product configurations need to report on artifacts and traceability links in context of such product configurations.