

# DEP-09 What? You can do that now?

## A survey of what's new in the IBM Continuous Engineering Solution

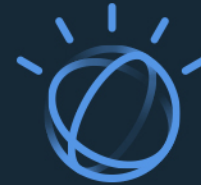
**Watson IoT™**

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*May 2018*

**IBM**

Fasten your seat belts! In this single session you can get caught up on the significant new capabilities in the IBM solution delivered over the last year and in interim milestones since then (and planned for general availability this summer). We will look at what's new for requirements management, systems engineering, agile/lean development, quality management, software development, reporting, and the digital twin.



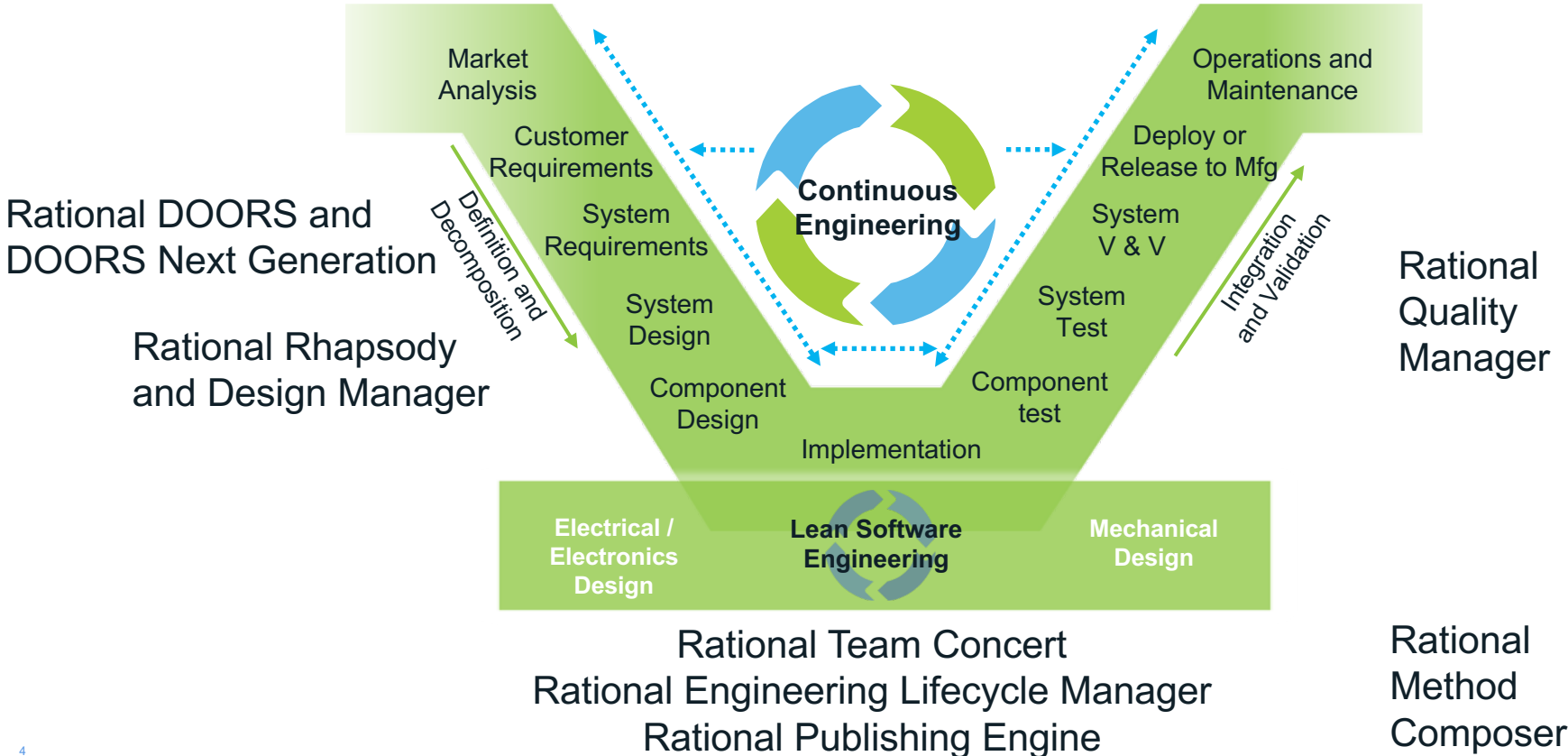
# Agenda

- Business-driven development
  - Agile / SAFe / Lean / Kanban for teams of teams
  - Reporting
- Configuration Management
- Model-based engineering
- Compliance
- Digital thread
- Performance, scale, system monitoring
- Usability and other product enhancements
  
- Bonus
  - API additions
  - Support news you should know



Purple items == 6.0.5  
Black items == 6.0.6

# IBM IoT Continuous Engineering Solution



## Products

- IBM Rational Team Concert
- IBM Rational DOORS Next Generation
- IBM Rational Quality Manager
- Rhapsody Model Manager
- IBM Rational Engineering Lifecycle Manager
- IBM Rational Publishing Engine

## Solutions

- IBM IoT continuous engineering solution
- [Collaborative Lifecycle Management](#)
- IBM IoT CE and CLM on Cloud

[Show all](#)

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### Collaborative Lifecycle Management 6.0.6 M5 Milestone

[Early Access Milestone](#) | April 17, 2018

[Important notes about using this build](#)

[Getting Started](#)

**[New & Noteworthy](#)**

[Release Notes](#)

[Upgrading](#)

[Optional Programs](#)

[All Downloads](#)

### Collaborative Lifecycle Management 6.0.6 M5 New & Noteworthy

For new and noteworthy information about the Rational solution for Collaborative Lifecycle Management applications, see these pages:

- [Jazz Foundation \(Jazz Team Server\) and Global Configuration Management 6.0.6 M5](#)
- [Change and Configuration Management 6.0.6 M5](#)
- [Quality Management 6.0.6 M5](#)
- [Requirements Management 6.0.6 M5](#)
- [Jazz Reporting Service 6.0.6 M5](#)
- [Rational Engineering Lifecycle Manager 6.0.6 M5](#)
- [Design Management 6.0.6 M5](#)
- [Rhapsody Model Manager 6.0.6 M5](#)

# Business-driven development

# All new RTC Quick Planner

## Flexible Tag Based Boards

- Customize boards
  - tag based, process based, or both
- Change names, add lanes (no XML)

## RTC < 6.0.5:

- 100% process-based swim lanes

## RTC >= 6.0.5 ... can be:

- 100% process-based
- 100% tag-based (like Trello or GitHub Issues)
- Or Combine the two – even within a single swim lane!

- Simple setup
- Tag-based
- Very flexible
- With “just enough” RTC process constraints
- Very responsive UI

**Create a board**

Board Name  
Start by giving your board a name. You can change it later using the board settings.

Work board

Board Type  
Choose a board type. Boards in Quick Planner are a view of the work items in your project.

**Work Board**  
A customizable work board you can use to see how work progresses across a set of lanes that can be associated with a state or simple tags.

**Plan Board**  
A customizable planning board for those working with iterations or sprints. Use it to see and control incoming work or your current backlogs (sprint, iteration, release) and to move work between your backlogs.

Use preconfigured lanes.  
The selected iteration will be added as global board filter in a work board and will determine the iteration lanes in a plan board.  
→ Sprint 2

→ Open 22

+ Create a work item...

345: Implement - Donor Dividend Allocation Criteria  
Last updated by ADMIN a few seconds ago

333: Credit Increase request is registered against the wrong account  
Last updated by ADMIN 5 minutes ago

331: Organization selection list is empty  
Last updated by ADMIN 5 minutes ago

324: Multipplatform change due to invalid customer model loans  
Last updated by ADMIN a few seconds ago

321: Allocate Dividends to Nearby Charities  
Last updated by ADMIN a few seconds ago

316: Detail Design - Allocate Dividends with Web Service  
Last updated by ADMIN a few seconds ago

315: Design - Allocate Dividends with Web Service  
Last updated by ADMIN a few seconds ago

Open mustfix defects Done

Lane content

State group: Open

States: Defect Workflow: New, Defect Workflow: Reopened

Tags: mustfix

Hint: The simplest lane is associated with a tag. You can also create lanes that show items from all state groups, or any combination of states from one state group, or even items with multiple tags. If you don't override the label, it's based on the state group.

Presentation

Group by: No grouping

Open mustfix defects

+ Create a work item...

333: Credit Increase request is registered against the wrong account  
Last updated by ADMIN 11 minutes ago

331: Organization selection list is empty  
Last updated by ADMIN 11 minutes ago

298: Login not working anymore  
Last updated by ADMIN 11 minutes ago

271: Allow a user to create a dashboard of information  
Last updated by ADMIN 11 minutes ago

385: Login not working anymore  
Last updated by ADMIN 11 minutes ago

360: Allow a user to create a dashboard of information  
Last updated by ADMIN 11 minutes ago

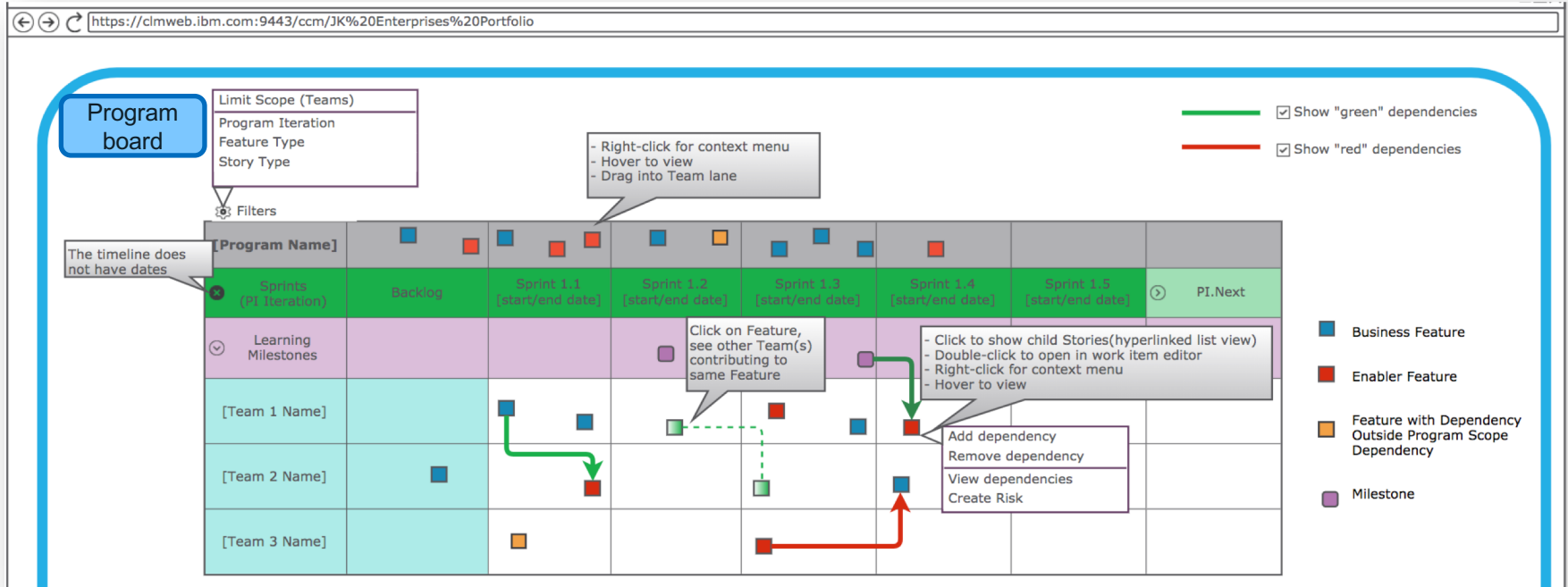
422: Credit Increase request is registered against the wrong account  
Last updated by ADMIN 11 minutes ago

420: Organization selection list is empty

# Program Board is aware of dependencies

Tech preview

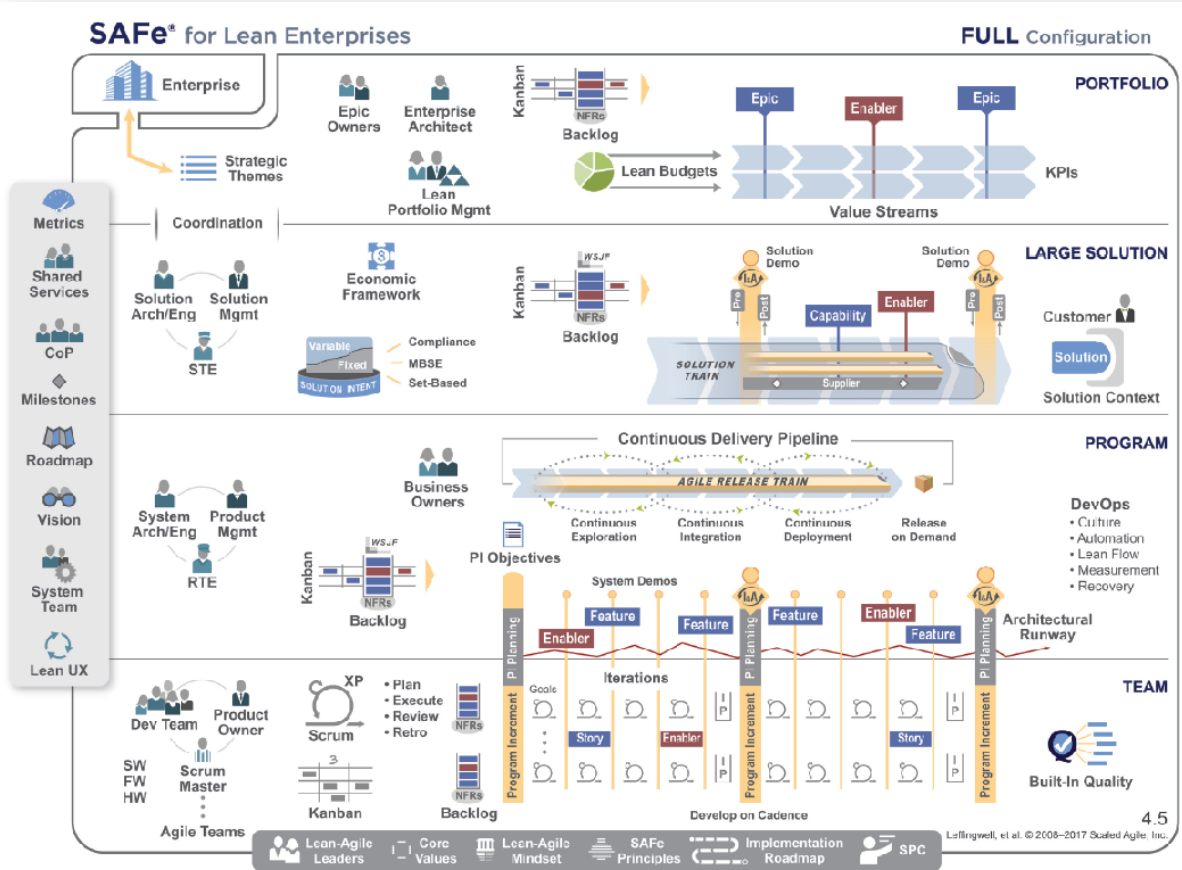
- **Mixed Methodology Support:** Consistent dependency management regardless of methodology
- **Visualization:** See “red” and “green” dependencies across nodes
- **Actionability:** Mitigate risks: set/change target iteration, create/remove dependencies
- **Visibility:** View details via rich hover without leaving the board, click to open work item editor



# Scaled Agile Framework SAFe® 4.5

Download additional report templates from [jazz.net/safe](http://jazz.net/safe)

Get your SAFe environment up and running in an hour!



- ✓ Reports
- ✓ Tooling configuration, including support for all 4 configurations out of the box
- ✓ Artifacts and attributes
- ✓ Key concepts: Economic ranking, lean thinking, value-based delivery
- ✓ Plans to support key activities: Roadmap, Kanban, WSJF Ranked List
- ✓ Agile Team-based Planning
- ✓ Built-in process guidance



# Jazz Reporting Service Report Builder

Report on more data

- RQM build records and definitions, category details
- Start and end date of a work item

Schedule reports to run

Organize reports in folders

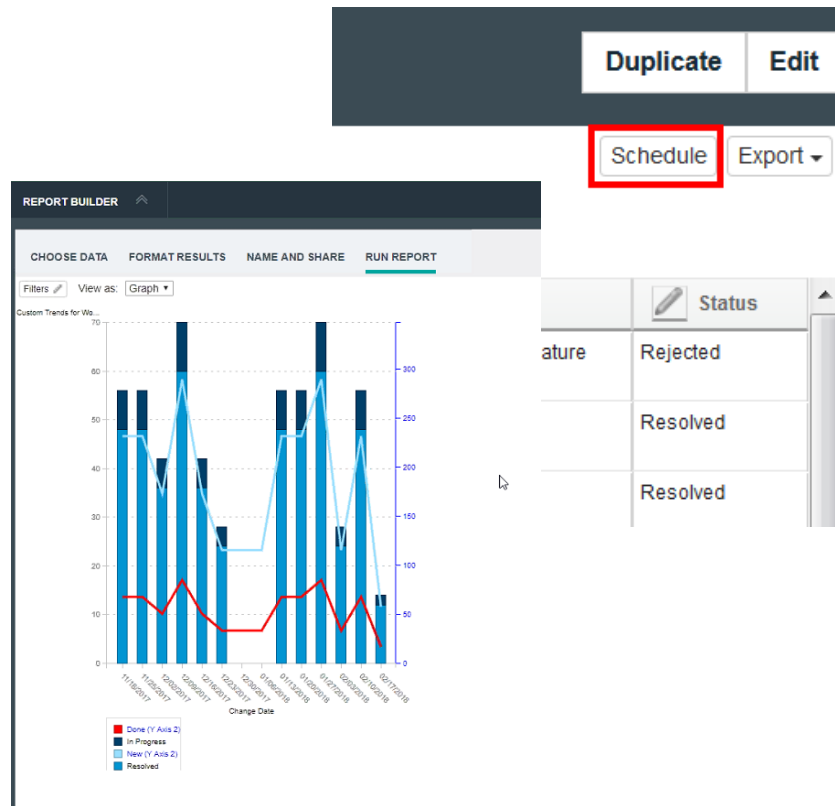
Set default orientation (Landscape / Portrait) and font size

Multiple Y axes within a chart

New LQE count metric: Total by Identifier.

- Counts requirements by ID instead of by URL, so that you can count distinct requirements regardless of the modules that contain them.

Improved quality and availability when using LQE as a data source



# Rational Publishing Engine

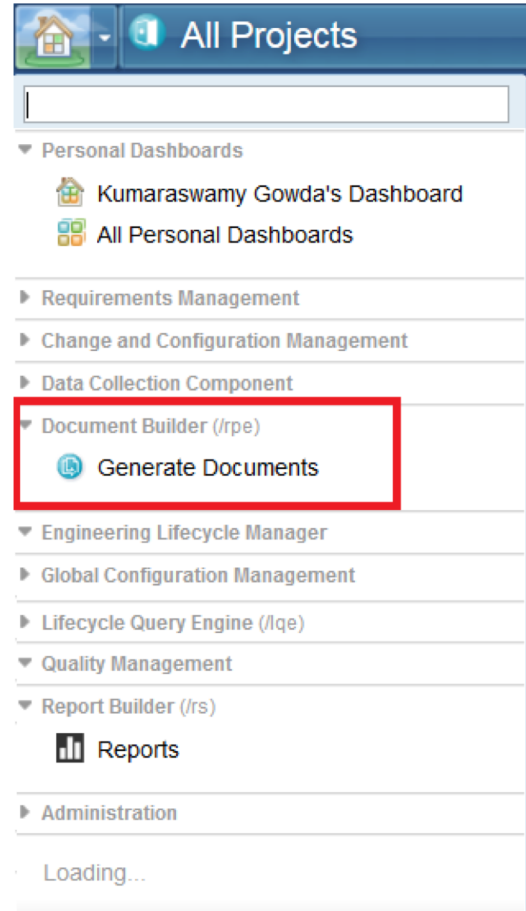
The RPE Document Builder is now easy to find, right under the Jazz home menu for Collaborative Lifecycle Management (CLM).

See live preview of output in Document Studio as you build the template

- Verify formatting, conditions, content
- Correct it then and there

New reportable REST API in RMM

- Use RPE to run reports against RMM data
- Report from CE/CLM applications (RQM, DNG, RTC) with links to RMM elements
- Focus: traceability reporting



## Other RPE enhancements

### Improve Usability

- Generate directly to Excel

### Extend the Reach

- HP ALM as a data source, using JSON schema type

### Improve security / identity management

- JTS server rename in support of using Jazz Team Server authentication
- Document Builder can now authenticate with CLM applications that using certificates (Document Studio support added in V6.0.5)
- Document Studio user can now authenticate with Kerberos-SPNEGO

# Rational Method Composer V7.5.3

Integrated development practice guidance  
Optionally customized for your enterprise

- Improved navigation and modern design
- Optimized desktop and mobile interfaces
- Server-side search
- Now uses a consistent Eclipse platform with RTC V6.0.x and Eclipse V4.2.2.
- The IBM Rational Jazz source control integration (embedded RTC client) supports V6.0.2 or later
- Install to WebSphere Liberty
- Updated browser and Windows 10 support

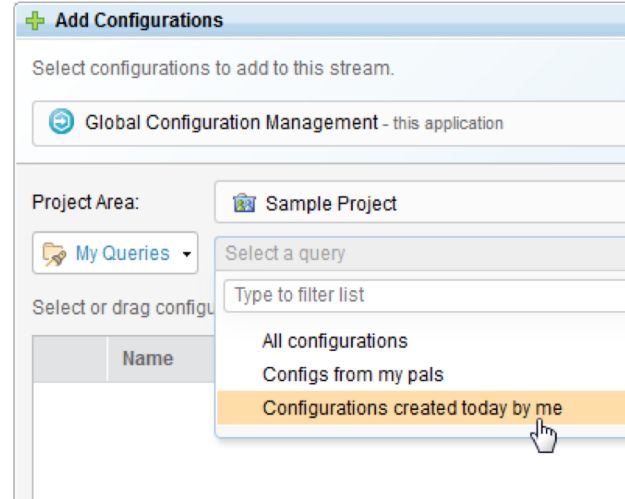
The screenshot shows the top navigation bar of the Rational Method Composer interface. The main title is "ISO 26262". Below it, there are several menu items: "Welcome", "Processes", "Roles", "Tasks", "Work Products", and "Practices". The "Work Products" menu is currently expanded, showing a list of sub-items: "Overall Safety Management", "Concept Phase", "Product Development Systems", "Product Development Hardware", "Product Development Software", "Product Development Systems Integration and Test", "Production and Operation", and "Supporting Processes". Below the navigation bar, the breadcrumb "Work Products / Overall Safety Management" is visible, followed by the heading "Overall Safety Management". A list of links is displayed below, including "Employee documented experience", "Employee Qualification Certification", "Evidence of effective Electrical, Electronic quality man...", "Evidence of suitably qualified workforce to carry out sa...", "In-house functional safety guidelines", "In-house process documentation", and "Safety manager task offer".

The screenshot shows the main interface of the Rational Method Composer. The title bar reads "Rational Method Composer". The interface is divided into several sections. On the left, there is a "IBM Practices" tree view with a search bar. The main content area is titled "Welcome" and contains a "Main Description" section with "Learning" and "Resources" sub-sections. The "Learning" section lists "Basic Process Concepts" and "Practice". The "Resources" section lists "Practice-based enablement", "Additional Practice Plugins", "IBM Rational Method Composer", and "General IBM resources". The "About this configuration" section is also visible. On the right side, there is a "Practices" section with a large graphic of three interlocking puzzle pieces labeled "Enterprise Practices", "Systems Engineering Practices", and "Software Development Practices".

# Configuration Management

# Global Configuration Management

- Finding GCs when there are a lot of them
  - **Queries:** shared, personal, in pickers
  - Queryable Small String and Medium String attributes
  - Custom attribute in GC picker
- “Create stream” optimizations (e.g., stream from stream)
- Multiple CLM instances (each with own Jazz Team Servers) into one GC hierarchy
- Bulk edit tags and attributes
- Import/export/automate type system updates
  - for REST API details see <https://hostname:port/gc/doc/scenarios>



# GCs with contributions from RTC SCM

Set a global configuration context in RTC for file link traversal

GCM now shows composite configurations for RTC and RMM (the components of streams and snapshots)

Deep component skew now detected for RTC and RMM composite configurations.

*Limited use license for IBM IoT MessageSight included, which provides MQTT implementation needed for both features*

The screenshot displays the IBM RTC Global Configuration Management (GCM) interface. The main view shows a configuration hierarchy for 'Misc Initial Development'. A warning message indicates 'This hierarchy contains component skew (3 components in skew)'. Below this, a list of configurations is shown, including 'UI Stream (20180511-1407)', '4: Sprint 1 (Release 1.0) (Java UI)', '4: Sprint 1 (Release 1.0) (C# UI)', '4: Iteration 1 (Web UI)', and 'JKE Banking Integration Stream'. The right-hand panel shows a detailed view of 'Component Skew - Misc Initial Development', listing configurations for 'Web UI', 'C# UI', and 'Java UI' components, including their creation dates and where they are used.

Global Configuration Management (/gc)

Sample Project

Global Configurations

Welcome > Browse Components > Misc > Misc Initial Development >

### Component Skew - Misc Initial Development

Several configurations of the Web UI component from CCM were found:

Order	Configuration	Created On	Where Used
1	4: Iteration 1 (Web UI)	May 7, 2018	
2	Web UI	-	

Several configurations of the C# UI component from CCM were found:

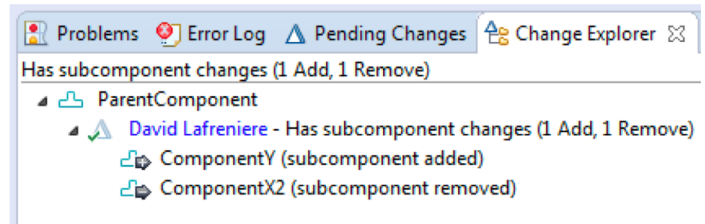
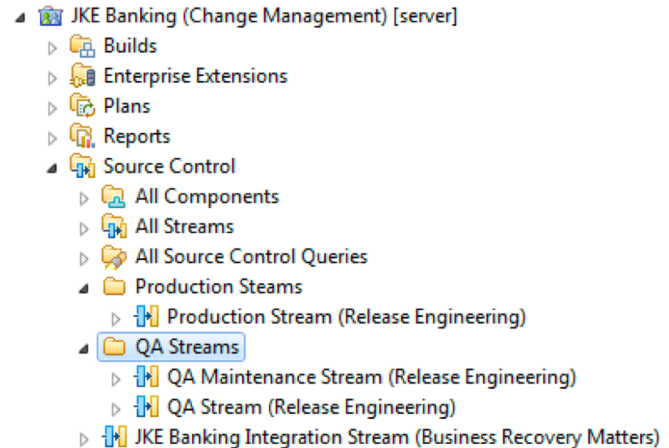
Order	Configuration	Created On	Where Used
1	4: Sprint 1 (Release 1.0) (C# UI)	May 7, 2018	
2	C# UI	-	

Several configurations of the Java UI component from CCM were found:

Order	Configuration	Created On	Where Used
1	4: Sprint 1 (Release 1.0) (Java UI)	May 7, 2018	
2	Java UI	-	

# RTC SCM for Complex Development / Reuse

- Manage SCM streams and workspaces in **folders**
- Make subcomponent changes visible in the Change Explorer views
- Query Streams and Workspaces: Consumers of component X. Use to populate “locate change sets”
- Search / filter option for baseline names in “replace component baselines” in Stream or Workspace Wizard
- Add baseline filter to workspace search dialog and query editor
- Ensure uniqueness of baseline names for one component





# RTC SCM Web UI

## Workspace editor and stream editor

- Update name, visibility, description, auto-lock file patterns
- Add, remove, and update components and flow targets

## Create and edit build engines

## Usability improvements

- Associate change sets to work items
- View a component's properties
- Component picker for the component work item attributes
- Multi-select lock, download, and upload operations on files
- Display the last modified date / time of a file
- Side-by-side views in the change set diff view

Source Control > Streams >

The screenshot displays the configuration page for a stream named 'CLI-402M2-Stream'. The page is divided into several sections:

- Overview**: Includes tabs for Overview, Snapshots, Operation History, and File Links.
- Details**: Shows 'Owned by: CLI Project Area' and 'Visibility: Project Scoped'. There is a description field.
- Components**: A list of components with their names and counts:
  - CLI-Client-Modified-Name (\*7: testBaseline)
  - CLI-Core (\*4: CLI-Project-Stream)
  - CLI-Docs (2: CLI-402M2-Workspace)
  - CLI-Test (3: CLI-Project-Stream)
- Flow Targets**: A table with columns for Name and Flow Direction. The entry 'CLI-Project-Stream' has a dropdown menu set to 'incoming, outgoing'.
- Auto-lock files**: A section for entering file name patterns.

An inset window titled 'JUnit Project' is overlaid on the bottom right, showing a 'Builds' menu with options like 'Welcome to Builds', 'Browse build definitions', 'Browse build queue', and 'Browse build engines'. A 'Create Build Engine' button is highlighted with a red box.

# Other RTC SCM enhancements

## SCM

- Keyword Expansion in SCM CLI and Jazz Build Engine

## Windows Shell and Visual Studio IDE

- New integrated web-based work item query editor in VS
- Ability to select change sets when accepting changes from Windows Shell and client for Microsoft Visual Studio IDE
- Ability to transfer locks to a different contributor
- Work Item History includes subfolders in Windows Shell and the client for Microsoft Visual Studio IDE

The screenshot shows the 'Edit Query' dialog box in Visual Studio. The dialog has a title bar 'Open for Current Iteration\*' and buttons for 'Cancel', 'Run', 'Save', 'Save Copy', and 'Close'. The 'Name' field contains 'Open for Current Iteration'. There are three tabs: 'Conditions', 'Details', and 'Column Display'. The 'Conditions' tab is active, showing a query editor with two conditions: 'Status is -' and 'Planned For is -'. The 'Status is -' condition has a dropdown menu with options like 'Unresolved', 'Resolved', 'Abandoned (Build Tracking Workflow)', 'Approved (Adoption Item Workflow)', 'Completed (Adoption Item Workflow)', 'Deferred (Epic Workflow)', 'Deferred (User Story Workflow)', and 'Done (User Story Workflow)'. The 'Planned For is -' condition has a dropdown menu with options like 'Current iteration', 'Unassigned development', 'Product Backlog', 'Release 1.0', 'Sprint 1', 'Sprint 2', 'Sprint 3', and 'stabilization'. Below the conditions, there is a table of work items. The table has columns for 'Type', 'Id', 'Summary', 'Owned By', 'Status', 'Priority', 'Severit', and 'Modified Date'. The table contains three rows of work items.

Type	Id	Summary	Owned By	Status	Priority	Severit	Modified Date
	398	Make provision for configurable service charges	Deb	New			3/12/2018 5:26 I
	375	Provide an admin portal for modifying service charges	Deb	New			3/12/2018 5:27 I
	269	Allocate Dividends with Web Service	Unassigned	New			9/3/2015 10:01 I

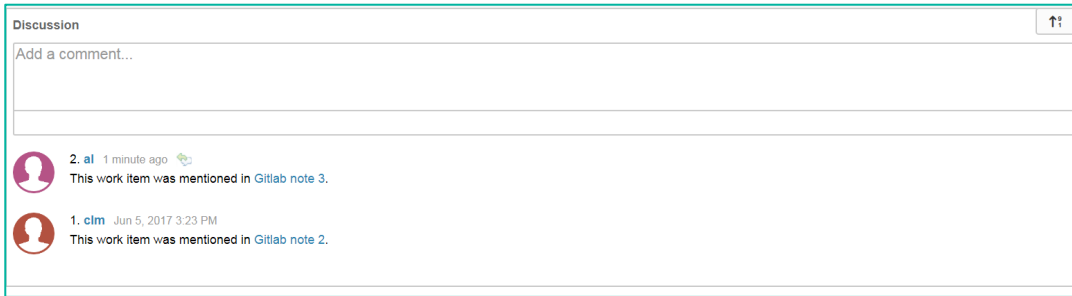
# RTC GitLab, GitHub integration

## Support for Rational Team Concert web-hooks to GitLab

- GitLab web-hooks support Push events and Comments triggers
- Mention a work item in a commit and it gets added to RTC work item discussion
- On Push events all work items mentioned in a commit have a comment added to them in the work items

## GitHub now adds commit comments and issue comments to RTC work items

- When a work item is mentioned in an issue or commit comment, a comment is added to the RTC work item



List and search for Git repositories across the repository

# Configuration Management: DOORS NG

Many improvements when using change sets: compare, merge, deliver, understand

- Compare proposed changes to the source version of an artifact
- Conflict resolution in side-by-side comparisons
- Navigate between changes when you compare or merge modules
- Understanding which conflicts are resolved
- Sort change sets in selection picker

The screenshot displays the 'Compare Configurations' window in DOORS NG. The window title is 'Compare Configurations' and it includes navigation buttons for '< Back', 'Next >', and 'Close'. The main area is divided into two panes: 'Some changes' on the left and 'Banking Initial Stream' on the right. Both panes show the same requirement text: '<<Identify all the related features and requirements associated with this requirement>>'. Below the requirement text, there is an 'Additional Information' section. In the 'Some changes' pane, this section contains a list of three items: '1. Any additional information required to clarify/elaborate this requirement.', '2. Sketches, storyboards, screenflows, high level process flow and examples', and '3. Any thing else you fancy.'. In the 'Banking Initial Stream' pane, the 'Additional Information' section contains a single paragraph: '<<Include, or provide references to any additional information required to clarify/elaborate this requirement, this could include sketches, storyboards, screenflows, high level process flow and examples or any thing else you fancy.>>'. The interface also shows a 'Legend >>' button and a 'Synchronized scrolling' checkbox.

# Other cross-application Configuration Management items

## RTC

- Custom link types now available when linking to file versions in SCM container objects (streams, snapshots, and baselines)
- Create "References" links from any file stored in Jazz source control to RQM test cases using RTC Eclipse client.



## Rhapsody

- User workflows simplified: automatically check in and deliver to RTC SCM
- Enhanced CM workflow with RTC
  - Check in, deliver, and associate WI
  - Enhanced Lock/Unlock workflow
  - Manage controlled files

# Link storage and direction

- DNG: Visualize the direction of the link everywhere a link label is displayed
- Add provisions so that the link is always stored in the configuration of the source artifact
  - For cross component links or if planning to refactor into components
  - Changing link direction will change the storage of that link
  - Fixup utility provided for pre-v6.0.4 links

Visualize link direction in RQM, Rhapsody and RMM

The screenshot shows the RQM interface with a 'Links (4)' dropdown menu open. The menu lists sorting and grouping options: 'Sort by Artifact Name', 'Sort by Artifact Type', 'Sort by Artifact ID', 'Sort by Date Last Modified', 'Group by Relationship', 'Group by Component or P', 'Group by Date Last Modifi', and 'Group by Link Direction' (highlighted). Below the menu, the 'Actor: MeterReader' card is visible, showing a 'Links' section with 'Derives From (1)', 'Elaborates (1)', and 'Validated By' links. To the right, a 'Related Sites' sidebar lists various artifacts, with red circles highlighting the direction arrows on 'Validates Requirements', '376: Business Recovery Matters Vision', 'Tests Development Items', and '96: Offer more services related to loans'.

RDNG

The screenshot shows the RMM interface with the 'Actor: MeterReader' card. The 'Links' section is expanded, showing 'Derives From (1)', 'Elaborates (1)', and 'Validated By' links. A red box highlights the 'Add Link' dropdown menu, which lists 'Derives From', 'Refines', 'Satisfies', 'Trace', 'Elaborates', 'Validated By', and 'External' with direction arrows.

RMM

RQM

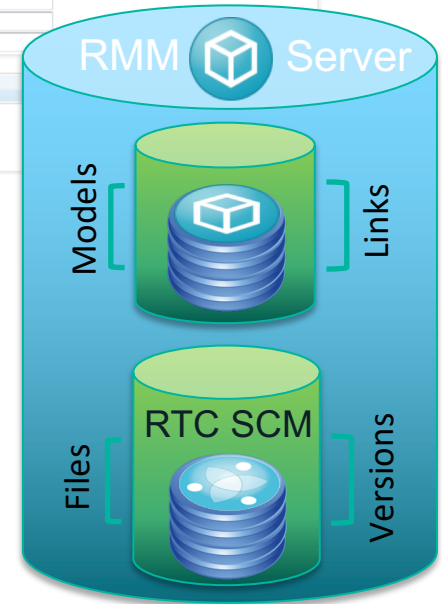
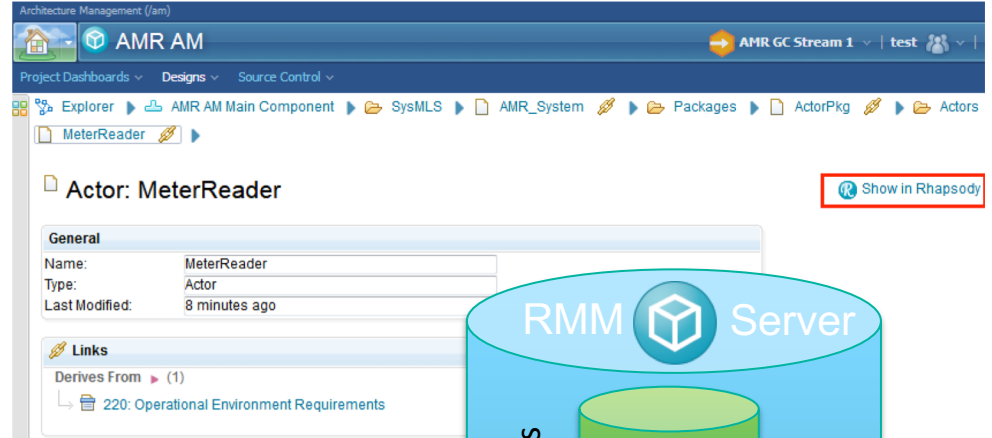
# Model-based engineering

# Introducing Rhapsody Model Manager (RMM) an evolution of web-based model management

First release (V6.0.5) included ...

- Enterprise-class configuration management built on proven Rational Team Concert SCM
- Requirements-and-model traceability with web view for creating and navigating OSLC traceability
- Global configurations, fine-grained components, access control, server rename

... while delivering significantly better enterprise scale and resilience compared to RDM





# Rhapsody Model Manager

## V6.0.6 highlights

### Linking

- Links from **Test Case** and **Work Items**
- Visual indicators of link direction/storage for practitioners
- Create OSLC links with RDNG and DOORS without needing RMM license

### Tech Preview of **Diagrams** in RMM Web

### **Reporting** on external traceability with RPE

### Usability

- Navigation from Web and other tools to Rhapsody client
- RMM in Lifecycle Project Administration (LPA)
- Deploy Sample Project in Web

Data scrub: permanently delete information after data spill

**Migrate** Rhapsody models and OSLC links from RDM to RMM

Config Mgmt enablement (opt-in/opt-out mode in RMM)

### Actor: MeterReader

#### General

Name: MeterReader  
Type: Actor  
Last Modified: 4 minutes ago

#### Links

##### Derives From ▶ (1)

↳ 220: Operational Environment Requirements

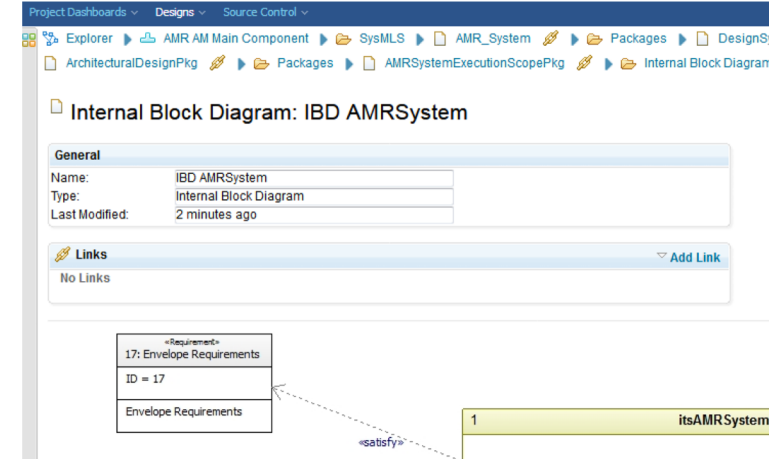
##### Elaborates ◀ (1)

↳ 5: Define phases

##### Validated By ◀ (2)

↳ 5: Validate Driver functionality

↳ 3: Validate Reader speed



# Rhapsody 8.3.1

Diagram usability: **graphical bridges**

Diagram View: single-source for different views

**Remote** QM and CMM artifacts

Create OSLC links by Drag & Drop

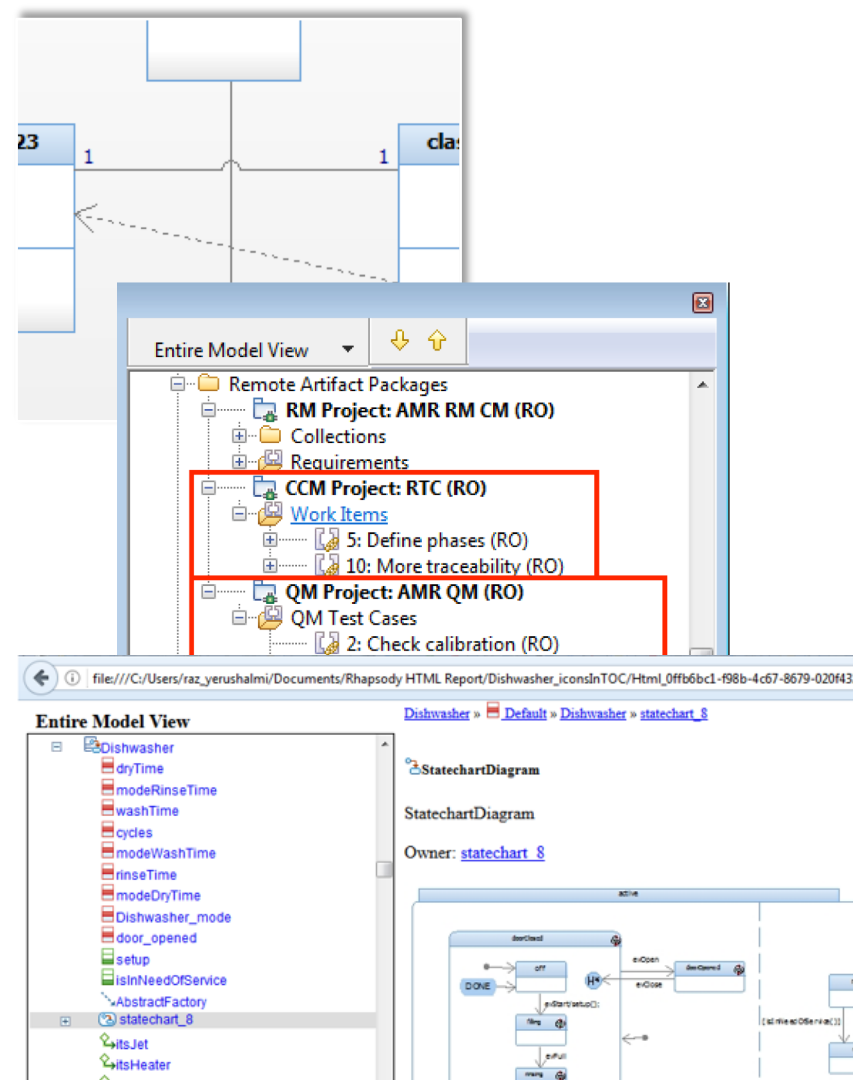
**Document Generation:** Hyper-linked HTML report on model through RPE (tech preview)

Install RDM and RMM extensions in the same Rhapsody installation

Enhanced Config Mgmt workflows with RTC

- Check in, deliver, and associate WI
- Enhanced Lock/Unlock workflow
- Manage controlled files

Enhanced Microsoft COM integration



# Compliance

# Electronic signatures in DOORS NG and RTC (already in RQM)

For FDA-compliant development process (21 CFR Part 11)

## DOORS NG

Active Project Areas > Automated Meter Reader \*

Requirements - Electronic Signature ?

You can use electronic signatures to sign baselines.

To display information about the signature, such as its reason or importance, enter the text to display:  
Need to gain FDA approved signature for this baseline

Require a comment  
 Require the user to select a reason for signing

Reasons for signing

Value

Approved

Conditional Approval

Reject

**Electronic Signature**

Need to gain FDA approved signature for this baseline

User ID: \*  
Richard

Password: \*  
\*\*\*\*\*

Comments: \*  
I'm good

Reason for signing: \*  
Approved

OK Cancel

**Baselines**

Items per page: 10 ▾

Actions	Name	Created by	Created	Description
	My baseline to sign	Richard	Nov 1, 2017	Need to get everybody to sign this one

## RTC

**E-Signature Required**

What: This action, for which you are acknowledging responsibility, requires your signature. This electronic signature is legally binding.

Actions:

1. "Approved" the change to "Sprint\_1\_1\_0\_Approval" approval request.
2. Allow the workflow transition using action "Resolve".

User Id: \*  
jazz

Password: \*  
\*\*\*\*

Select Additional Information: \*  
Predefined comment 1

Comment: \*  
Comment

OK Cancel

## Other items related to compliance

### SCM

- Code review now supports issue tags and tag-based filtering

### RQM

- Command Line Adapter passwords are now prompted and encrypted
- Optionally prevent originator or owner of a test artifact to be the reviewer or approver

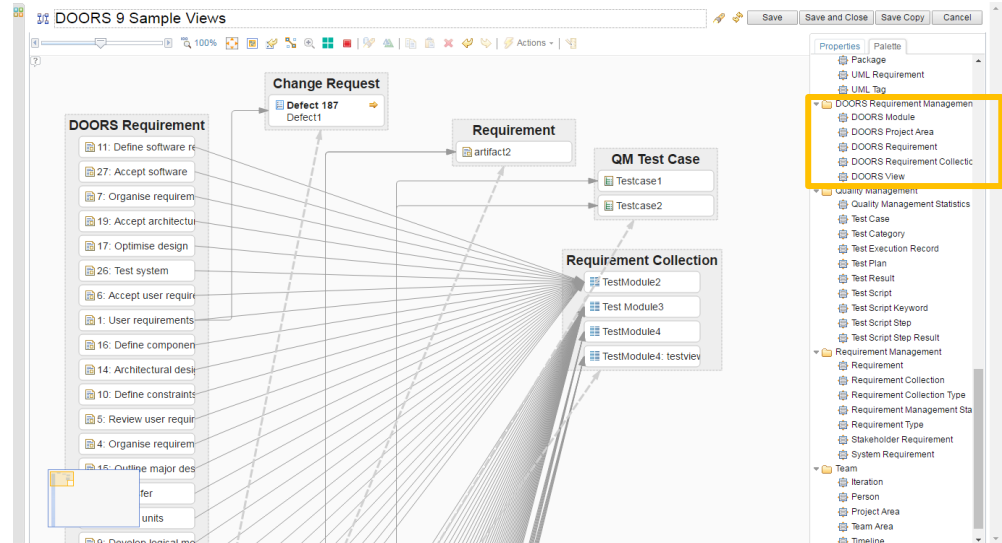
### All:

- Reduced/removed stack traces from error messages in web UIs

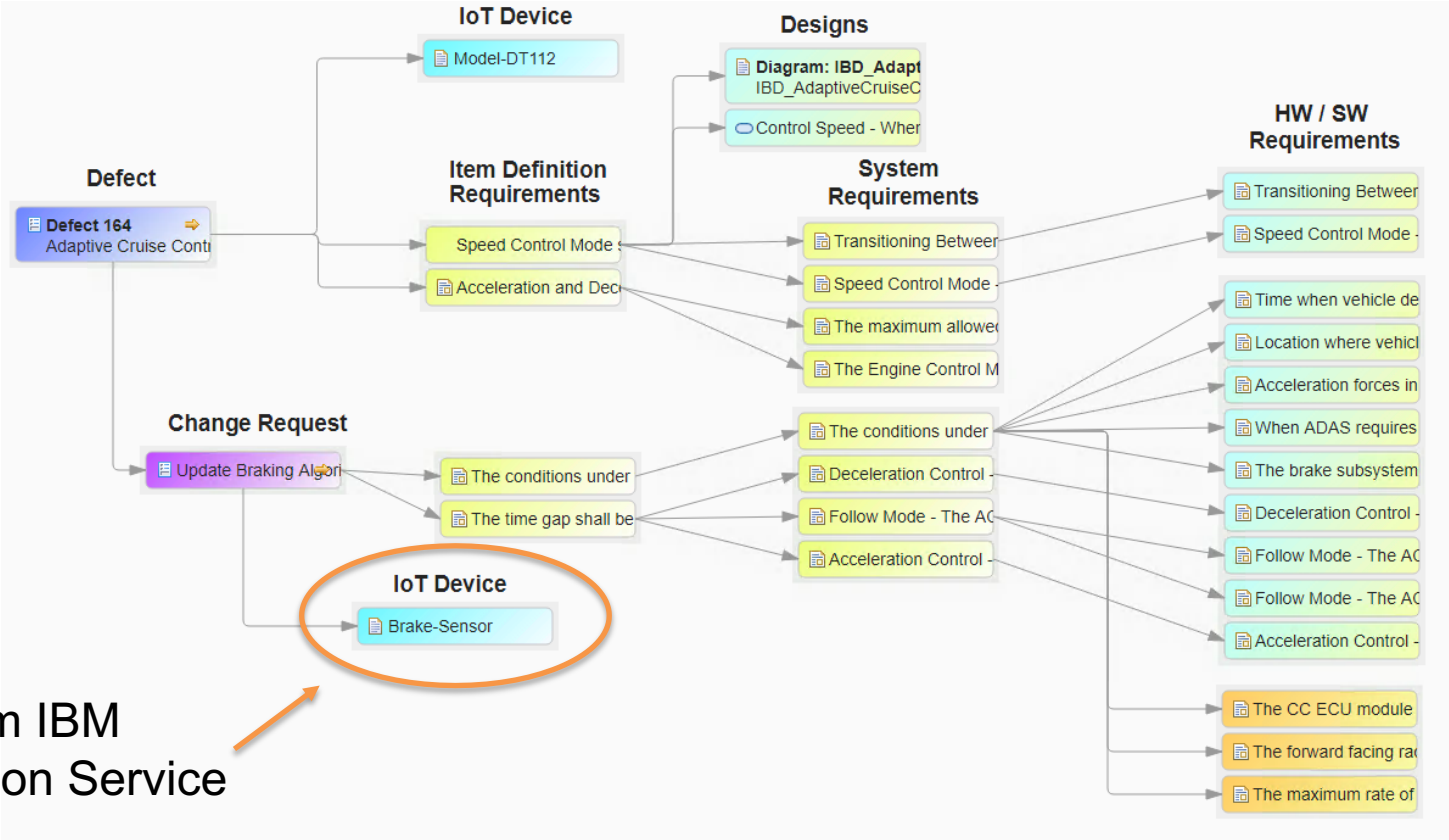
# Digital thread

# RELM: easier to edit, use and reuse views

- Show DOORS 9 data in views
- Lifecycle artifact analysis
- Navigate from detailed overview to full traceability view
- Count number of artifacts in one or more containers
- Add artifacts into single container
- Improvements in working with views, importing views
- Create links between containers
- Sort artifacts by attribute
- Import views with custom artifact elements
- When importing, specify data source



# RELM: Impact change analysis with CE4IoT Connector



Data from IBM Connection Service



# From Operations to Engineering: RTC alerts based on device runtime data

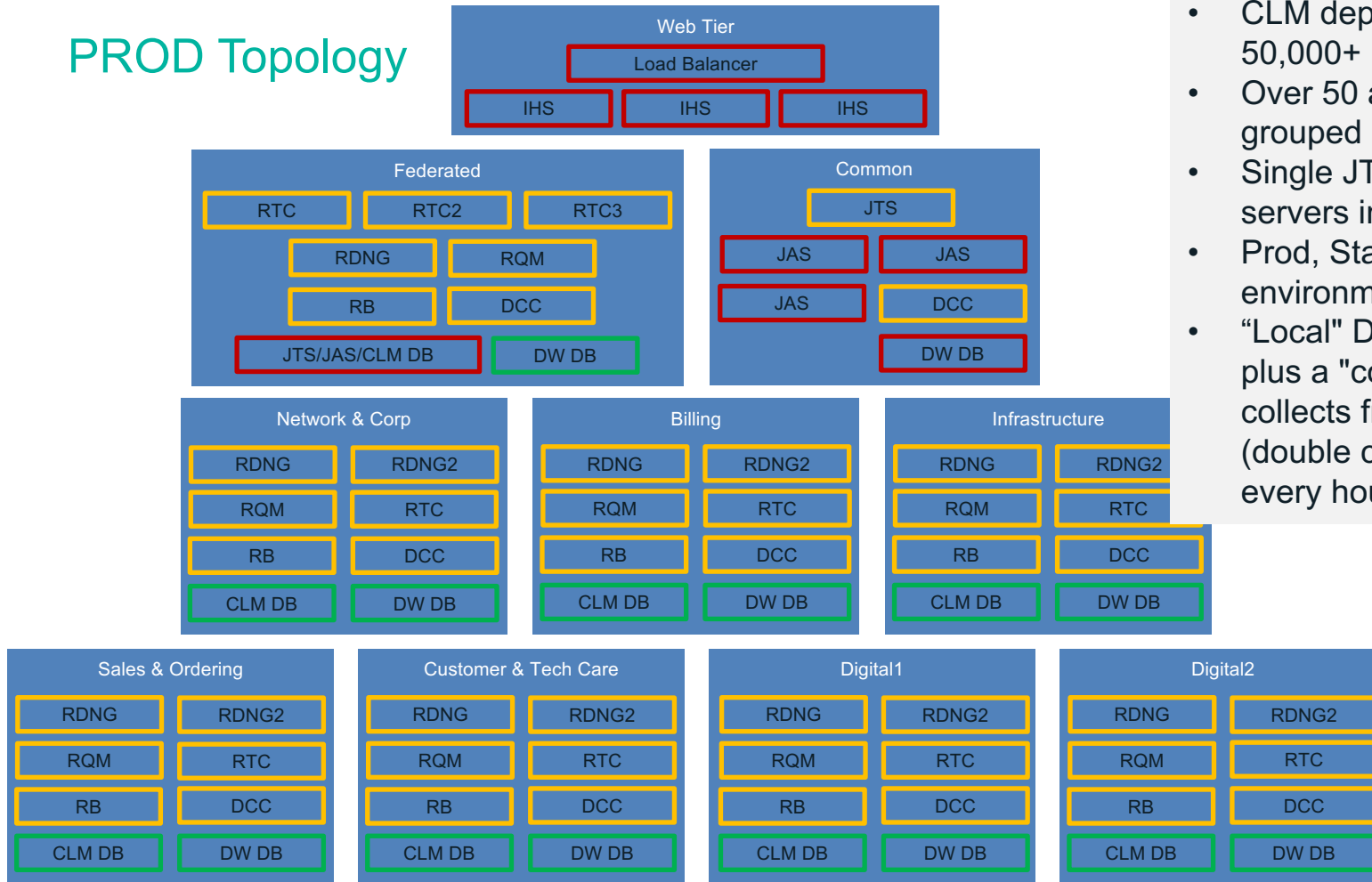


The screenshot shows the Node-RED web interface. On the left, a sidebar lists various nodes including 'range', 'split', 'join', 'sort', 'batch', 'csv', 'html', 'json', 'xml', 'yaml', 'alert node', and 'rbe'. The main workspace, titled 'Flow 1', contains a flow with the following nodes: 'Temp Input' (inlet), 'Temp test' (function), 'create Alert' (function), 'No Alert' (output), and 'Alert' (output). The 'create Alert' node is highlighted with an orange border. On the right, the 'Edit alert-node node' dialog is open, displaying the following configuration:

- Name: create Alert
- RTC Server: https://ce4iot.rtp.raleigh.ibm.com:9443/ccm
- Project area: JKE Banking (Change Management)
- User ID: devonce
- Password: .....
- Title: The temperature has exceeded the maximum
- Description: Someone needs to look at this. This is suppose to b

Performance, scale, system monitoring

# PROD Topology



- CLM deployment, supporting 50,000+ users
- Over 50 app servers, grouped into 8 areas
- Single JTS with 3 JAS servers in production
- Prod, Stage, Test. and Dev environments
- "Local" DCCs for each area plus a "common " DCC that collects from all app servers (double collection), running every hour

# Performance & Scale

## RTC

- Work item editor now loads faster: better caching / fewer network requests
- Also [Configuring WebSphere DynaCache for Rational Team Concert server](#)
- Very large files transparently stored elsewhere

## RQM

- Clustering tech preview / jazz.net experience

## RDNG

- Faster saves when editing attributes of multiple artifacts

## GCM

- Multiple GCM apps on separate Jazz Team Servers contributing to a GC

## RDNG multi-server deployments

- Custom and system link types
- Drag-and drop across server (and component)

## Rhapsody Model Manager

- Hosting models at scale with enterprise qualities of service

# Clustering

Scale the number of your concurrent users

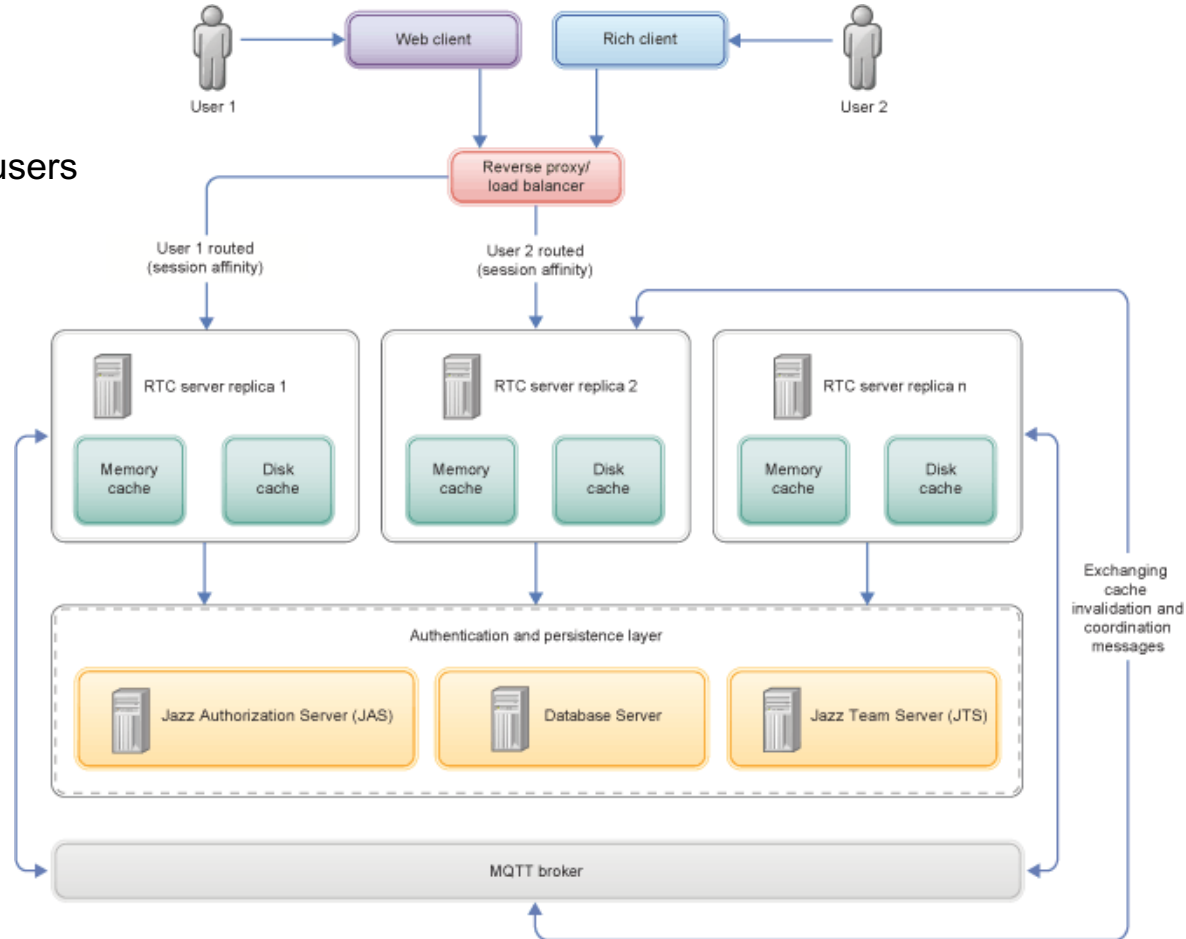
Higher availability

Transparent to practitioners

Includes all of RTC capabilities  
(Work items, SCM, Build)

RQM tech preview

Uses IBM IoT MessageSight  
(license included with CLM)



## Monitoring with CE/CLM MBeans starting in V6.0.4 (some examples)

### Serviceability Component

**com.ibm.team.repository.service.internal.serviceability.ClusterMetricsTask**

Property	Current Value
Delay between invocations	900

Enable Distributed Cache Metrics MBean

Enable Distributed Maps and Sizes Metrics MBean

Enable Distributed Persistence Metrics MBean

Enable MQTT Service Metrics MBean

**com.ibm.team.repository.service.internal.serviceability.CommonMetricsCollectorTask**

Property	Current Value
Delay between invocations	900
Enable Cluster Metrics MBean	false
Enable Contributor Metrics MBean	false
Enable Item Count Metrics MBean	false
Enable Project Metrics MBean	false
Enable Projects Metrics MBean	false
Enable Work Item Metrics MBean	false

- JMX Management Beans (MBeans)
- Find hot spots with expensive scenario correlation / logging
- Configure to limit some of them (in admin pages)
- See jazz.net deployment wiki for more information

## More MBeans added in 6.0.5 and 6.0.6 for operational management and root cause analysis (some examples)

### Log Events

[417417: As an administrator, I want to monitor the critical log info like errors and warnings, so that I can be alerted when system produces these errors](#)

License counters: concurrent, token, denials

### Active Services Summary

[426008: Provide an MBean that aggregates information about active services](#)

Web Services Summary (averages and transaction rates)

[441375: Need to add mbean data to Elastic Search about web services](#)

### SQL Activity Summary

[427164: Provide an MBean that reports on overall SQL activity](#)

### LQE

[Implement MBean support for key LQE events](#)

### SCM Large File Support

[\[CCM\] Better support for large file storage \(including binaries\)](#)

### Compatible Client Logins

[431948: Add MBean for "compatible client logins"](#)

### MQTT (for clustered servers)

[436263: Add MqttService Client Stats counters as Mbeans in the cluster metrics task](#)

### Distributed Cache Counters (for clustered servers)

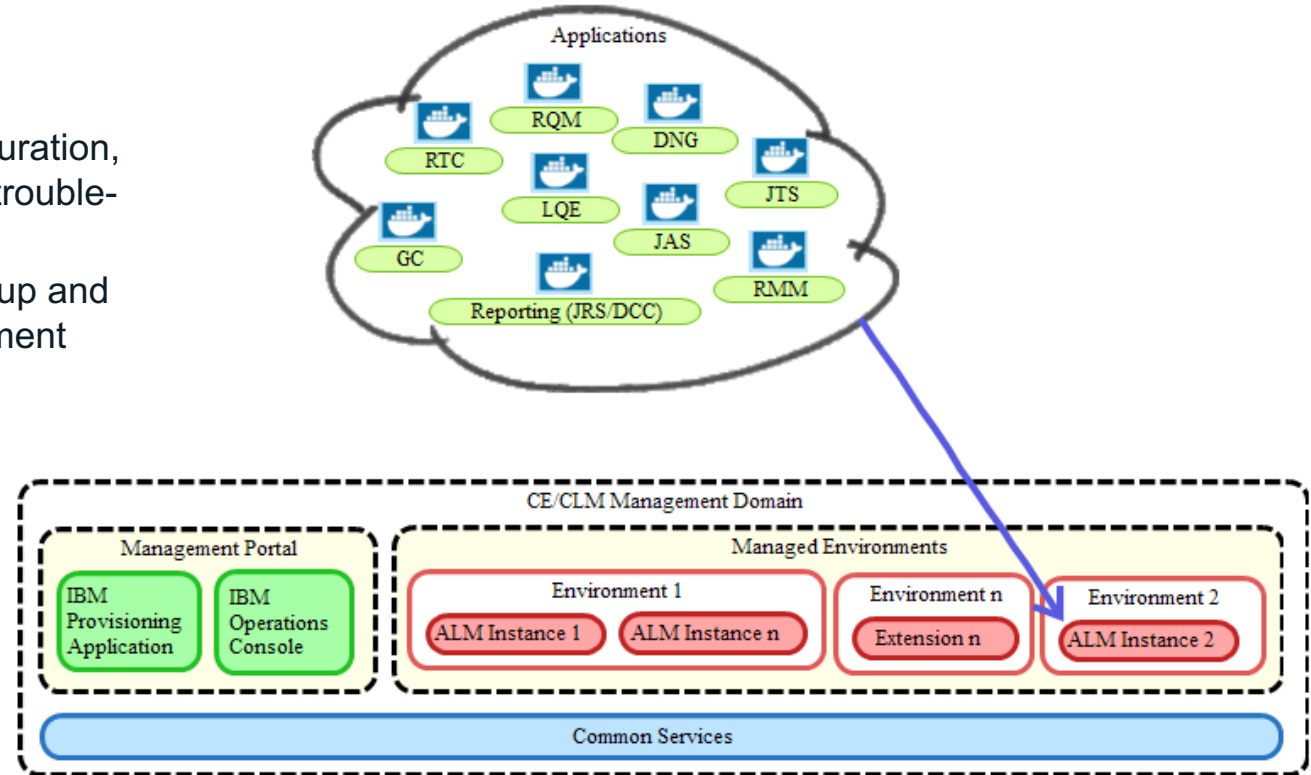
[436262: Add distributed cache counters as mbeans within cluster metrics task](#)

# CE/CLM Management Domain using containers and new automation

Tech preview

## Goals

- Simplify installation, configuration, operational management, troubleshooting, and upgrading
- Reduce skill needed to setup and maintain CE/CLM environment
- Improve time to value





# LQE architecture for greater horizontal scale-out, high availability, fault tolerance, cloud ready

Tech preview

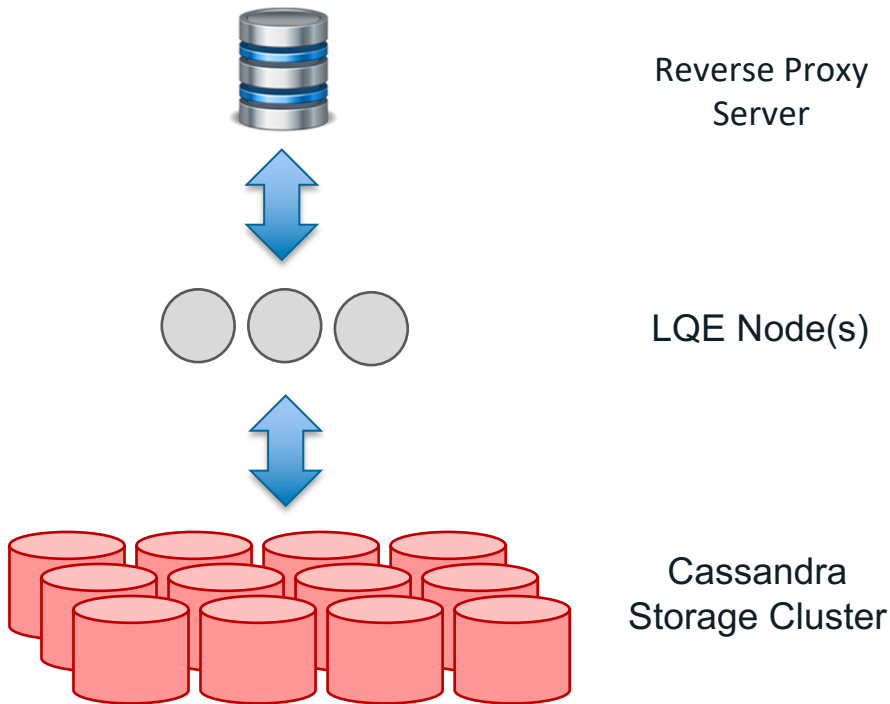
With property graph (JanusGraph)



Connect to data sources

The following data sources were created:  
LQE Property Graph - Preview

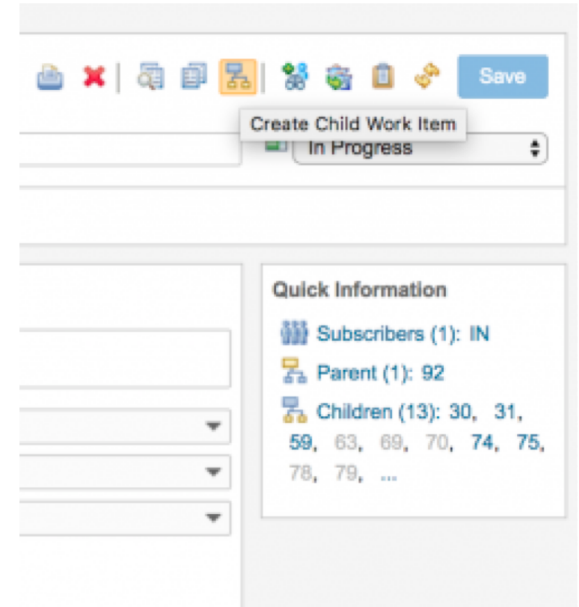
To manage them, go to [Data Sources](#)



Simplicity and user experience for  
practitioners and administrators  
(and other product enhancements)

# RTC Track and Plan Usability

- One button “child work item” create for custom parent-child links
  - Set default child for each type; inherit parent’s planned for and found in
- Query for empty tags
- Sort plans based on small string attribute, e.g., “Status”
- CSV export files now includes the ID and summary for links
- Restrict who can perform work item import



# DNG Usability

Requirements repurposing during requirements decomposition: Copy & Link to create artefact

- With preferred type
- Optionally across components

40+ additional usability improvements. Examples:

- Artifact picker now supports rich hover. Makes artifact identification much easier
- “Paste as link” added to trace columns if you prefer not to use drag and drop. Reduces the need to browse using the link picker dialog
- Filter summary displayed in a filtered module
- Show count of review comments in the review dialog
- Set location of folder for base artifacts (if mainly using modules)

## Artifact Types

By default artifact types, attributes and data types must have a matching type (by URI or name) in both the source and target. Attribute and data types that are not matched will be ignored.

[Hide Artifact Types](#)

Only allow preferred module content.

If the artifact type in the source is		Paste into the target as
Heading	=	Heading
Process Guidance	→	Information

**Create Link**

Kind of link to create: Link type: **Link To** From artifact: 72: Give Back

Where to link to:  Project: **Agile Requirements Sample**  The web

What to look in:  Folders  Modules: Select all modules, a single module, or search by a name or ID

Folder: **Business Rules** Type to filter by text or by ID

Select artifact: Displaying 1-9 of 9 matches

- 168: Falsified information will lead to denied status
- 163: Request will be closed if no response from organization
- 162: **Organization or customer response required**
- 98: Org...
- 84: Do...
- 70: Ch...
- 68: Do...
- 19: Res...
- 14: Do...

**162: Organization or customer response required**

Organization and customer must respond to any requests for additional information or application will receive a "no response" status.

Related Requirements

19: Res...

14: Do...

Customers may nom...

Location

- Agile Requirements Sample
- Business Rules
- Extended Functionality, Org App, Release 1

Attributes

Type:	Business Rule	Format:	Text
Description:		Priority:	
Status:	Approved	Team Ownership:	Agile Re...

# Supply chain collaboration with DNG: ReqIF round trip data updates

Selectively import data into DNG

Attribute level locking added to ReqIF definition

- Now you can exchange data with DOORS 9 user, confident that only the allowed attributes can be updated.
- DNG → DOORS → DNG with DNG as the source database

Requirements Management (Jm)

Demo Project 1 | Active Component A

Project Dashboard Artifacts Reviews Reports

tribute Data Types Link Types Link Constraints Link Validity Module Options Ter

## ReqIF ?

Create and manage ReqIF definitions, which are used to create and export ReqIF files.

### ReqIF Definitions + New Definition...

Name	
Supplier ReqIF - Locks	
Supplier ReqIF - No Locks	

Name: \*

Description:

#### Add Attribute Locks for DOORS 9 to the ReqIF Definition

Available Attributes

- ReqIF.ChapterName
- ReqIF.ForeignCreatedThru
- ReqIF.ForeignDeleted
- ReqIF.Name
- ReqIF.Prefix
- Supplier Comments

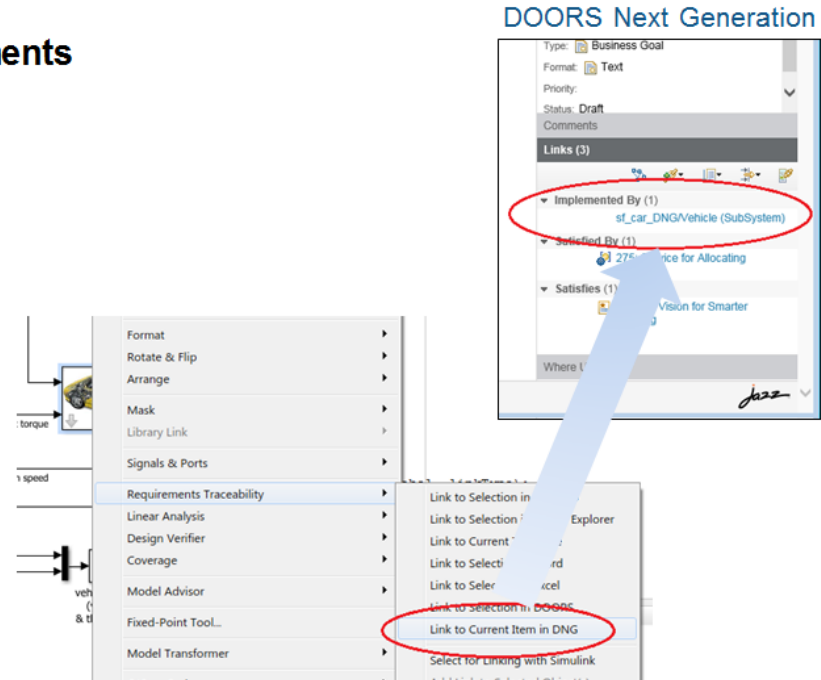
→

←

# Mathworks Simulink – IBM DOORS Next Generation

## Link and trace model elements to requirements in DOORS Next Generation (DNG)

- Navigate to Simulink block with link in DNG
- Simulink Widget in DNG shows the current requirement selected for linking



# RQM Tests Builder

## Create and edit test cases faster and easier

Tech preview

Quality Management (jgm)  
JKE Banking (Quality Management) qmadmin

Project Dashboards Requirements Architecture Elements Planning Construction Lab Management Builds Execution Reports Change Requests Search QM Resources

### 2: System Verification

Tests Builder - lets you quickly create and edit test cases in a test plan

+ Enter a name to create new, or enter '@' to search existing test cases to add

Test cases 14 Columns 8

ID	Priority	Name	State	Weight	Pre-Condition	Owner	Estimate
7	📄	Allocate dividends by amount and frequency	Draft	20	<ul style="list-style-type: none"><li>Sample data loaded into Application Under Test per design spec.</li><li>Sample user "jbrown" configured in AUT.</li><li>"jbrown" has dividend bearing account with <b>positive</b> account balance.</li></ul>	Deb	1 d 7 h
8	📄	Organizations may apply with an initial request	Approved	100		Tanuj	
9	📄	Donors Can Choose to Support an Organization	Under Review	50	<ul style="list-style-type: none"><li>Sample data loaded into Application Under Test per design spec.</li><li>At least <b>three</b> different organizations have been configured</li></ul>	Tammy	1 d 4 h
10	📄	Customers can Nominate an Organization	Approved	100		Tanuj	
11	📄	Donors Choose an Organization	Under Review	30	<ul style="list-style-type: none"><li>Sample data loaded into Application Under Test per design spec.</li><li>Sample user "jbrown" configured in AUT.</li><li>At least <b>four</b> different organizations have been configured</li></ul>	Bob	6 h
12	📄	Organization must provide justification for why funds are needed	Under Review	100	<ul style="list-style-type: none"><li>Sample data loaded into Application Under Test per design spec.</li><li>Several organizations have been configured and at least <b>one</b> should have a justification and one should not have it</li></ul>		
13	📄	Donation amount limits	Draft	40	<ul style="list-style-type: none"><li>Sample data loaded into Application Under Test per design spec.</li><li>Sample user "jbrown" configured in AUT.</li><li>"jbrown" has dividend bearing account with <b>positive</b> account balance.</li></ul>		
14	📄	Donors will receive confirmation and receipt	Approved	100			
15	📄	Organizations can Apply	Approved	100			
16	📄	Donor dividend allocation conforms to stated criteria	Draft	50	<ul style="list-style-type: none"><li>Sample data loaded into Application Under Test per design spec.</li><li>Sample user "jbrown" configured in AUT.</li><li>"jbrown" has dividend bearing account with <b>positive</b> account balance.</li></ul>		
17	📄	JKE Charity Coordinator responds to online request	Draft	100	<ul style="list-style-type: none"><li>Sample data loaded into Application Under Test per design spec.</li><li>Several organizations have been configured</li></ul>		
18	📄	Dividend Allocation by Percentage	Draft	20	<ul style="list-style-type: none"><li>Sample data loaded into Application Under Test per design spec.</li><li>Sample user "jbrown" configured in AUT.</li><li>"jbrown" has dividend bearing account with <b>positive</b> account balance.</li></ul>	Marco	3 h
19	📄	Allocate Dividends to a Single Cause	Draft	125	<ul style="list-style-type: none"><li>Sample data loaded into Application Under Test per design spec.</li><li>Sample user "jbrown" configured in AUT.</li><li>At least <b>four</b> different organizations have been configured</li></ul>	Tanuj	2 d 2 h
25	📄	(QM Tutorial) Allocate Dividends to Multiple Causes	Approved	125	<ul style="list-style-type: none"><li>Sample data loaded into Application Under Test per design spec.</li><li>Sample user "jbrown" configured in AUT.</li></ul>	Tanuj	

IBM. jazz

- Edit the test cases of a test plan
- Add and create new test cases
- Navigate and edit like with any other spreadsheet editor

# Other RQM Enhancements

## Productivity boosters when **editing and using manual tests**

- [More views of script step information](#)
- [View the test script step count for test cases, test scripts, and execution results](#)
- [Add, update, and delete steps during manual test script execution and merge those changes back to the test script after execution](#)
- New column named Step Merge Status to indicate if manual test script steps updated during execution have been merged or not

Insert images into rich-text editor using drag and drop or pasting from the clipboard

## Test execution

- [New built-in execution variables](#)
- Select and run multiple test case execution records from a table view. The selected records are placed in an execution queue, and you can access them in the execution console.

Compare and Merge highlights the differences in the Summary section

[New Manage Artifact Attachments properties page to delete artifacts](#)



# DOORS 9

## ReqIF

- ReqIF supports more symbol fonts with UTF-8

## Usability

- Improve module scroll velocity
- JRS reports that work over multiple projects and modules
- Filtering is now possible on DXL attributes in DWA

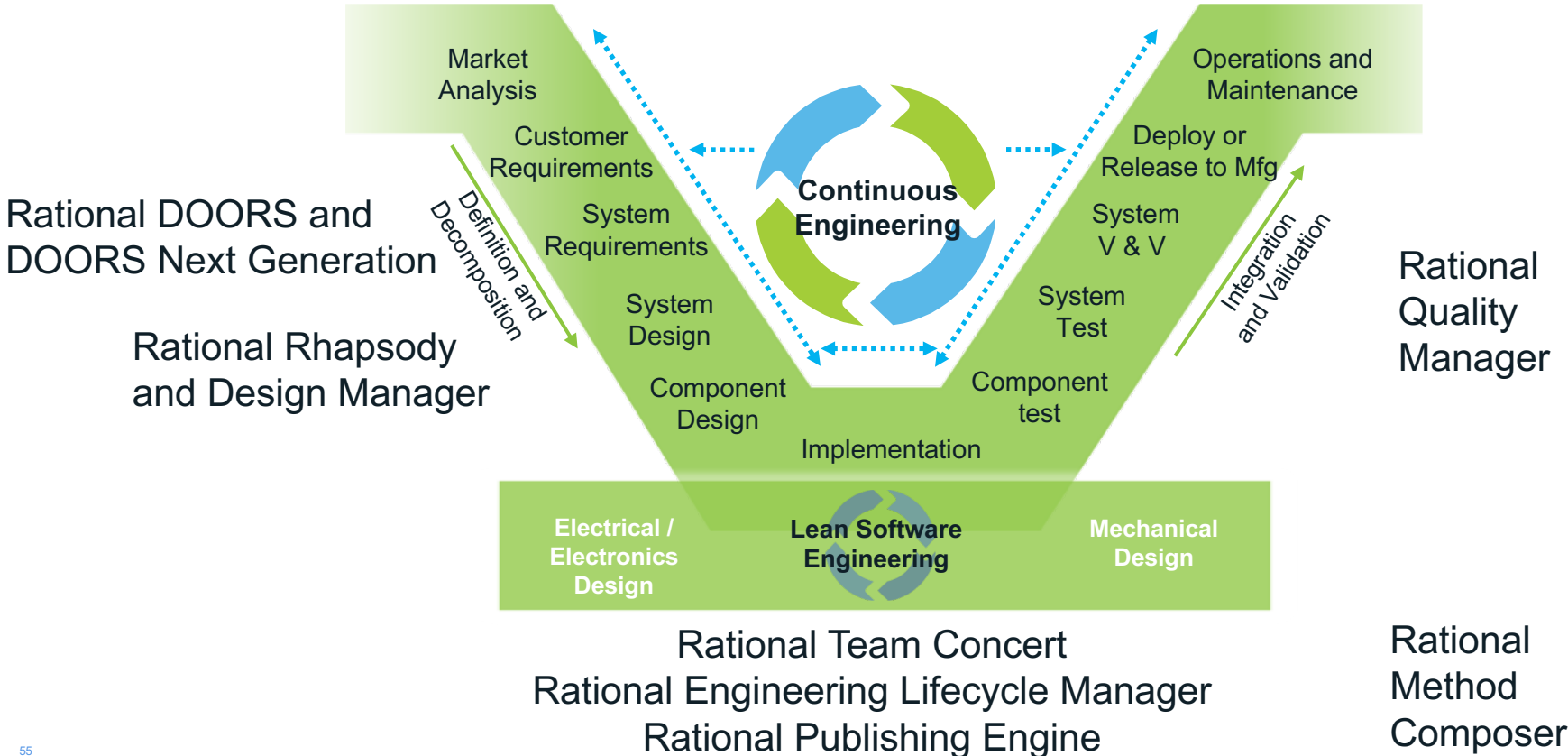
## Administration

- Windows 10 LTSC – client
- Windows 2016 – server
- SUSE 12 – server
- RDS – support for TDS (now SDS)
- Office 2016
- RHEL 7
- Firefox 60

## Integrations

- OSLC improvements for larger DOORS database sizes
- Quality Center 12 including migration support to switch QC/DOORS servers

# IBM IoT Continuous Engineering Solution



**IBM**

# New APIs for automation

## GCM API

- **Type system export/import/automation:** To simplify keeping GC project area definitions consistent
  - for REST API details see <https://hostname:port/gc/doc/scenarios>

## RM API

- **Module structure:** retrieve and manipulate module structure (add, delete, promote/demote)  
**Client JavaScript API:** get current artifact URI and configuration
- **OSLC operations show titles for RM internal links:** If an external resource has a link title assigned, the title will be displayed in an OSLC GET operation. The label is displayed on a description block in the RDF structure.

## RQM

- **REST API:** retrieve and filter by category type
- Reportable REST API supports CRUD and query requests for custom attributes

## Rhapsody

- MS COM integration enhanced: API stability across Rhapsody releases

**CE/CLM support news 2Q2018**

**Some things you should know**

News:

## Windows 10 Semi-Annual Channel

### **Beginning with the V6.0.6 release we plan for CLM and RPE to support the Microsoft Windows 10 Semi-Annual Channel**

The Semi-Annual Channel (formerly known as Current Business Branch) is a twice-per-year feature update release targeting around March and September, with 18-month servicing timelines for each release. Since these Windows 10 releases will not always align exactly with each CLM release timing, our approach will be to fix issues that may arise in our iFix release model as well as the current latest release. Customers may need to upgrade to a newer release to obtain fixes for Windows 10 SAC releases.

## News: Some recommendations

The Continuous Engineering (CE) / Collaborative Lifecycle Management (CLM) tools support a variety of web application servers, operating systems and databases. For maximum flexibility to adopt new advanced features and to simplify a potential move in the future to or from the IBM CE/CLM on Cloud SaaS offerings, we recommend the following:

1. In all cases we strongly recommend deploying new environments using WebSphere Liberty. If you currently use WebSphere Application Server, we recommend migrating to WebSphere Liberty when you next upgrade your CE/CLM servers.
2. If your enterprise has the ability to support RedHat Enterprise Linux, then we recommend using that. Some advanced capabilities require IBM IoT MessageSight, which requires at least one server running RedHat Enterprise Linux x86-64.
3. If your organization has the ability to support IBM Db2, then we recommend using it for new environments.

### Notes:

- The CLM solution includes limited use licenses for IBM WebSphere Application Server (including Liberty), IBM Db2 and IBM IoT MessageSight.
- See [Migrating from Traditional WebSphere to WebSphere Liberty](#) and [IBM WebSphere Application Server Migration Toolkit](#)
- These recommendations do not reflect a change in our level of commitment to support other hardware, operating systems or databases.

## News:

### New iFix policy in effect

Interim fixes (iFixes) are periodic rolled-up patches for a release stream available from <http://ibm.com/support/fixcentral/>

When we fix a defect found by a client, we typically deliver the fix in ...

1. The release under development
2. The release in which a client finds a defect
3. All later EMRs
4. The current release R
5. The penultimate release R-1

For more information see the jazz.net blog post [Improvement to the CLM Maintenance Model](#)



News:

EMR

### **We plan to make the V6.0.6 release an EMR**

An Extended Maintenance Releases (EMR) provides all fixes from prior releases (including security fixes) for the life of the release stream. Prior EMRs:

- CLM 6.0.2
- CLM 5.0.2

## News:

### CLM V5 EOS April 2019

### Java 6 SDK out of support

End of support April 30, 2019  
(publicly announced April 2018)

IBM highly recommends moving to V6.0.5+ of the IBM Watson IoT Continuous Engineering / Collaborative Lifecycle Management suite of products, due to potential security risks in V5.0.2 and earlier releases of these products. The V5.x releases use IBM SDK, Java Technology Edition v6, which is no longer supported on distributed platforms. As a result there will be no further security fixes made available for it. Support for IBM Java SDK v6 on the System z platform ends in September 2018. V6.0.5 is the first release of the Continuous Engineering suite to use the IBM Java SDK v8, and earlier V6.0 to 6.0.4 releases use the IBM Java SDK v7, both of which are still supported. See this link for more detail: <https://developer.ibm.com/javasdk/support/lifecycle/> .

## News:

### Other EOS April 2019

End of support April 30, 2019  
(publicly announced April 2018)

RELM V5.0.2

RDM V5.02

RPE 1.3.x

Rhapsody Design Manager releases tied to  
Rhapsody 8.1.x support cycle (V6.0, 6.0.1, 6.0.2)

News:

Tomcat

**CLM V6.0.6 is the last release to support Apache Tomcat®**

We intend to remove Tomcat support in the next release. CLM has been bundling WebSphere Liberty instead of Tomcat for many releases now, and the CLM V6.0.6 release will be the last release to support Tomcat.

Customers using Tomcat are advised to move to migrate to WebSphere Liberty when they next upgrade CLM; this will be mandatory for releases for CLM releases starting after V6.0.6.

News:

RTC deprecating  
integrations

**A future release will remove the RTC Eclipse/SVN integration**

There is a basic SVN integration available in RTC's Eclipse UI today, and we plan to remove support in a future release. This is being done to enable more focus on integrating with more popular version control tools.

**A future release will remove the RTC Social Connector / Lotus Connections integration**

We plan to remove support in a future release for the RTC integration with the Lotus Connections solution installed on premise. This is being done to make room for future integrations with other collaboration tools.

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