

DEP-09 What? You can do that now? A survey of what's new in the IBM Continuous Engineering Solution

Watson IoT™

Daniel Moul
Senior Offering Manager
IBM Watson IoT

May 2018

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.



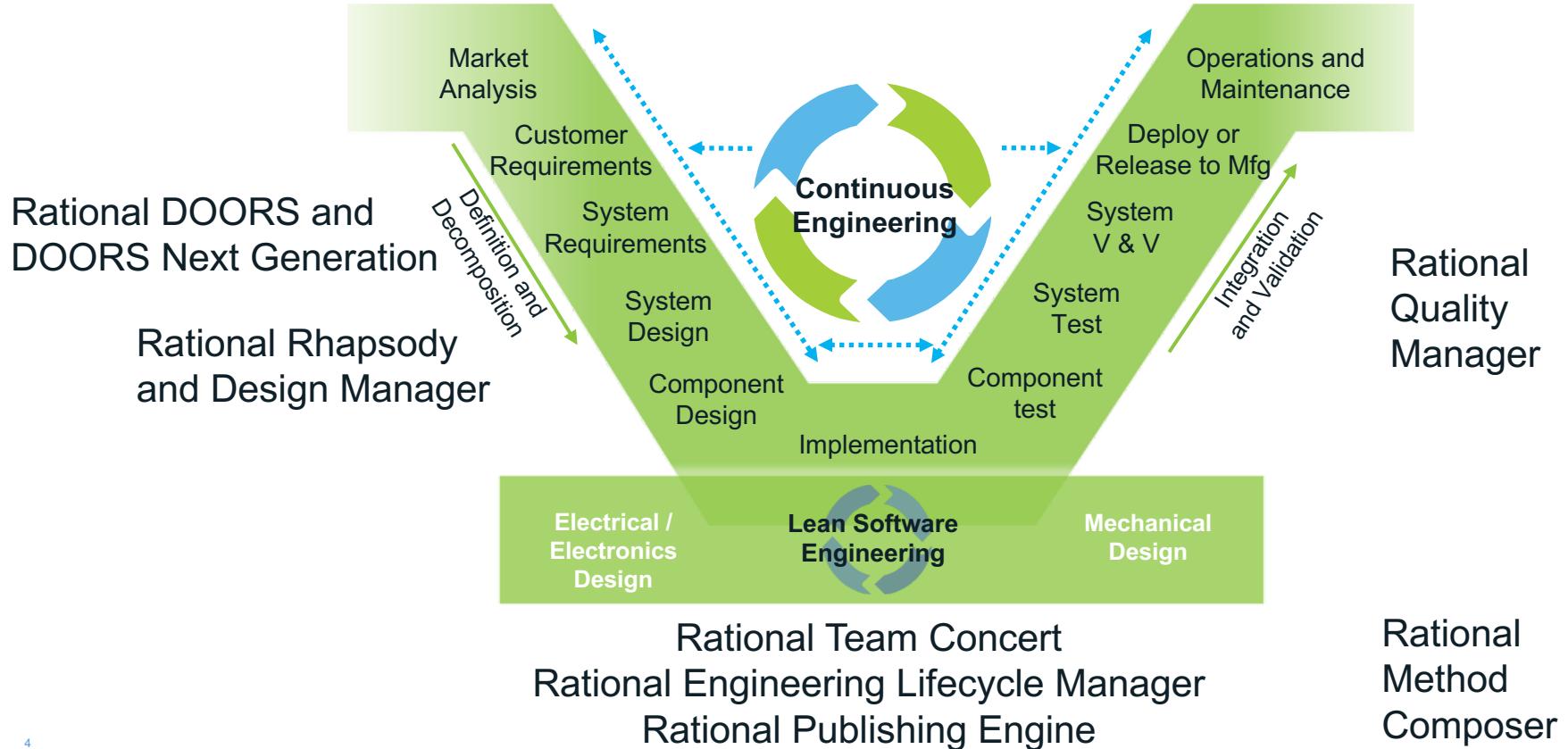
Agenda

- 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](#)[Download](#)

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!

The screenshot illustrates the RTC Quick Planner interface. At the top, a "Create a board" dialog box is open, showing fields for "Board Name" (set to "Work board") and "Board Type" (set to "Work Board"). Below this, two cards are shown: "Work Board" and "Plan Board". The "Work Board" card describes it as a customizable work board for progress across lanes. The "Plan Board" card describes it as a customizable planning board for iterations or sprints. A checkbox "Use preconfigured lanes" is checked, with a note explaining it adds a global filter and determines iteration lanes in a plan board, currently set to "Sprint 2".

Below the dialog, the main workspace shows a list of work items on the left and a detailed view of a selected item on the right. The selected item is "Open mustfix defects", which has a "Lane content" section. This section includes a "State group" dropdown set to "Open", a "States" section showing "Defect Workflow: New" and "Defect Workflow: Recopened", and a "Tags" section showing "mustfix". A "Presentation" section below lists "Severity", "Priority", "Owned By", and "No grouping". To the right of the workspace, a vertical list of many other work items is visible, each with a small preview icon and some text.

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

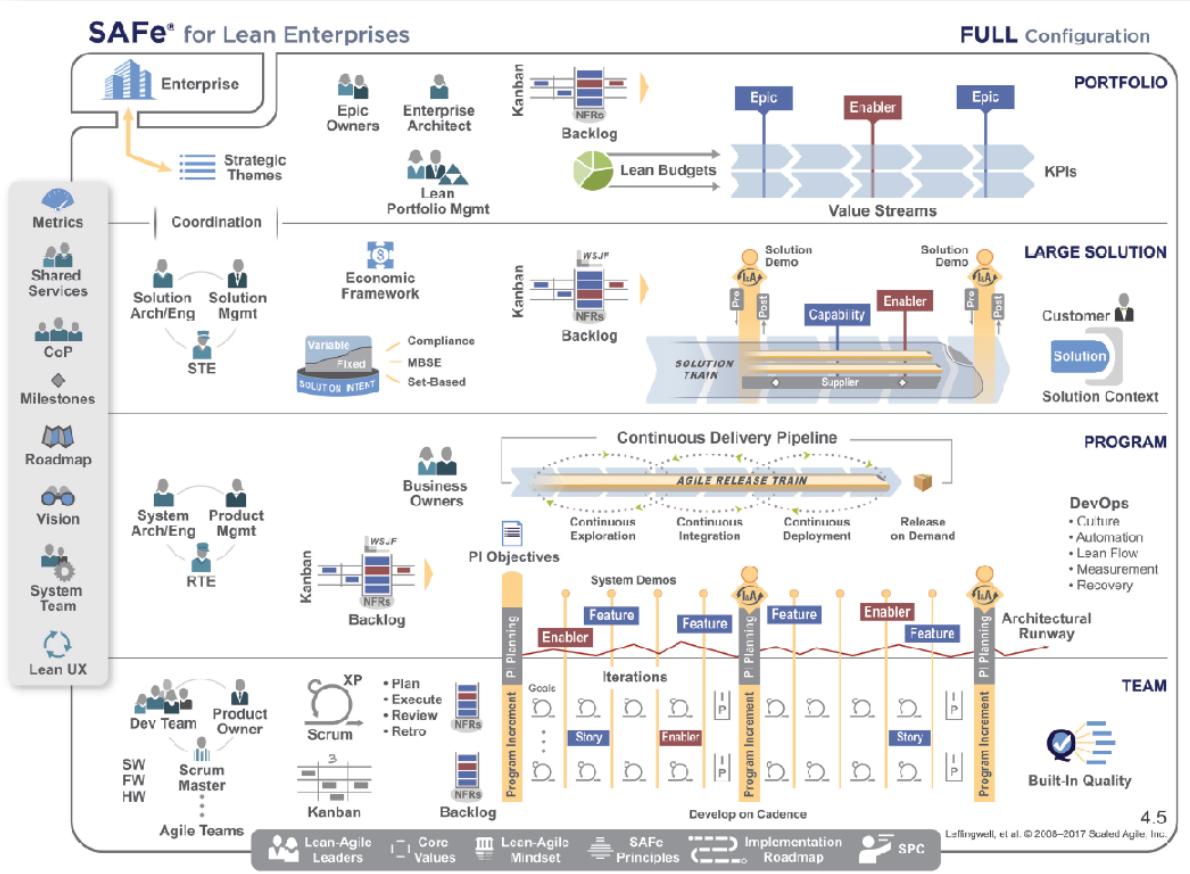
The screenshot shows the IBM CCM Program Board interface. A blue box labeled "Program board" highlights the main board area. On the left, there's a sidebar with "Limit Scope (Teams)" and "Filters". The board itself has columns for "Program Name", "Sprints (PI Iteration)", "Backlog", and several "Sprint 1.x" columns. Rows represent "Learning Milestones" and "Team 1 Name", "Team 2 Name", "Team 3 Name". A legend on the right defines symbols: blue square for Business Feature, red square for Enabler Feature, orange square for Feature with Dependency Outside Program Scope, and purple square for Milestone. A green line indicates a "Show 'green' dependencies" filter, and a red line indicates a "Show 'red' dependencies" filter. Callouts provide detailed instructions for various interactions, such as right-clicking for context menus, hovering to view details, and dragging items into Team lanes. A tooltip for a feature in Sprint 1.1 says: "Click on Feature, see other Team(s) contributing to same Feature". Another tooltip for a dependency between Team 2 and Team 1 says: "Add dependency, Remove dependency, View dependencies, Create Risk". A note on the board says: "The timeline does not have dates". The URL https://clmweb.ibm.com:9443/ccm/JK%20Enterprises%20Portfolio is visible at the top.

Scaled Agile Framework SAFe® 4.5

Download additional report templates from 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

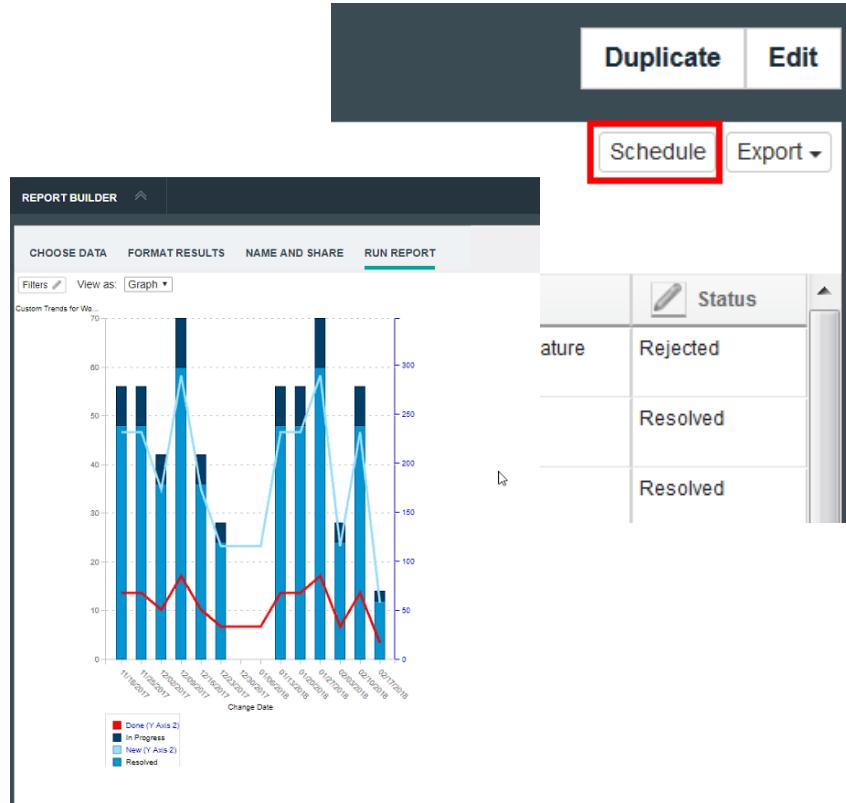
Set default orientation (Landscape / Portrait) and font size

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

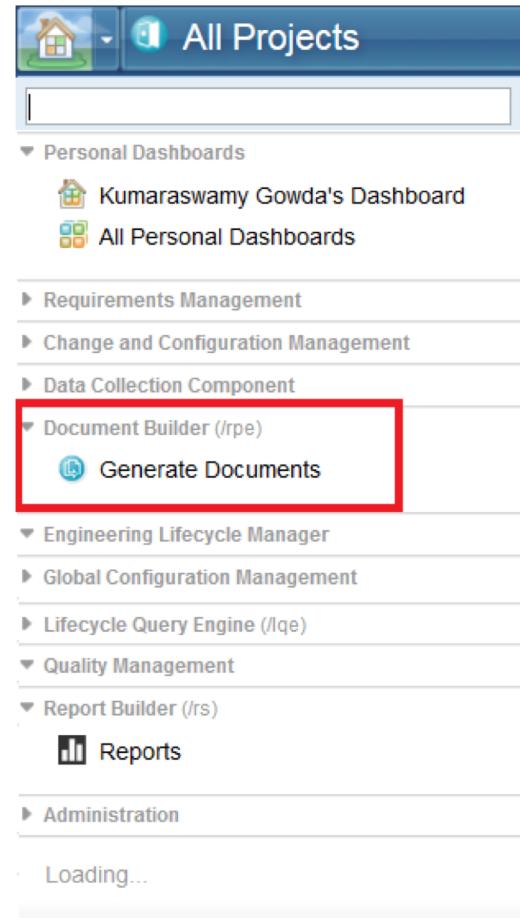
The RPE Document Builder is now easy to find, right under the Jazz home menu for Collaborative Lifecycle Management (CLM).

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 use 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

ISO 26262

Welcome ▾ Processes ▾ Roles ▾ Tasks ▾ Work Products ▾ Practices ▾

Work Products / Overall Safety Management ▾

Overall Safety Management

Employee documented experience
Employee Qualification Certification
Evidence of effective Electrical, Electronic quality management
Evidence of suitably qualified workforce to carry out safety tasks
In-house functional safety guidelines
In-house process documentation
Safety manager task offer

Overall Safety Management

Concept Phase

Product Development Systems

Product Development Hardware

Product Development Software

Product Development Systems Integration and Test

Production and Operation

Supporting Processes

The screenshot shows the Rational Method Composer application window. The top navigation bar includes links for Welcome, Processes, Roles, Tasks, Work Products (which is currently selected), and Practices. Below the navigation is a breadcrumb trail: Work Products / Overall Safety Management. A main content area displays a list of items under 'Overall Safety Management', such as 'Employee documented experience' and 'Employee Qualification Certification'. To the right of the main content is a sidebar titled 'Overall Safety Management' containing a list of other practice categories. At the bottom of the screen, there is a decorative graphic featuring four interlocking puzzle pieces labeled 'Enterprise Practices', 'Systems Engineering Practices', 'Software Development Practices', and 'About this configuration'.

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>

The screenshot shows a user interface for managing global configurations. At the top, a header reads "Add Configurations" with a plus sign icon. Below it, a message says "Select configurations to add to this stream." A section titled "Global Configuration Management - this application" contains a small icon and the text "Global Configuration Management - this application". Under "Project Area:", there is a dropdown menu set to "Sample Project" and a link "Select a query" with a "Type to filter list" input field. A "My Queries" button is also present. On the right, a vertical sidebar lists filtering options: "All configurations", "Configs from my pals", and "Configurations created today by me". The last option is highlighted with a yellow background and a mouse cursor icon pointing at it.

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.

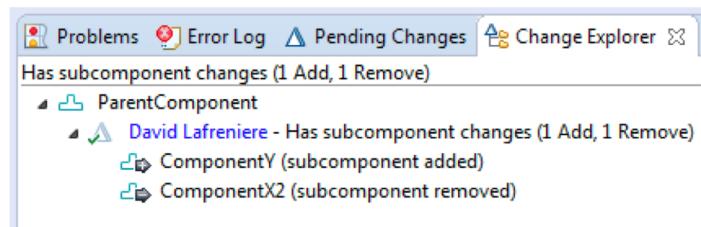
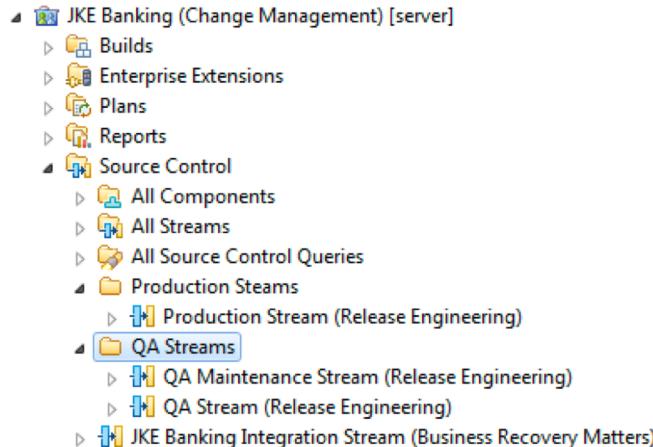
Limited use license for IBM IoT MessageSight included, which provides MQTT implementation needed for both features

The screenshot displays the GCM interface with three main panels:

- Misc Initial Development Component Skew:** Shows a warning message about component skew (3 components in skew). It lists two main configurations: "UI Stream (20180511-1407) CCM" and "JKE Banking Integration Stream CCM".
- Sample Project - Component Skew - Misc Initial Development:** A summary table showing configurations for the Web UI component from CCM. It lists two configurations: "4: Iteration 1 (Web UI)" and "Web UI".
- Component Skew - JKE Banking Integration Stream:** A summary table showing configurations for the C# UI component from CCM. It lists two configurations: "4: Sprint 1 (Release 1.0) (C# UI)" and "C# UI".
- Component Skew - JKE Banking (Quality Management) Initial Stream:** A summary table showing configurations for the Java UI component from CCM. It lists two configurations: "4: Sprint 1 (Release 1.0) (Java UI)" and "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

The screenshot displays the RTC SCM Web UI interface. At the top, a navigation bar shows 'Source Control > Streams >'. Below it, a stream named 'CLI-402M2-Stream' is selected, indicated by a red box around its title. The main content area has tabs for 'Overview', 'Snapshots', 'Operation History', and 'File Links', with 'Overview' selected. Under 'Details', it shows the stream is owned by 'CLI Project Area' and has 'Project Scoped' visibility. A 'Description' field is present. The 'Components' section lists several components: 'CLI-Client-Modified-Name (*7: testBaseline)', 'CLI-Core (*4: CLI-Project-Stream)', 'CLI-Docs (2: CLI-402M2-Workspace)', and 'CLI-Test (3: CLI-Project-Stream)'. The 'Flow Targets' section shows a table with columns 'Name' and 'Flow Direction', where 'CLI-Project-Stream' is listed with 'incoming, outgoing' direction. A red box highlights this row. The bottom part of the screenshot shows the 'Builds' dashboard with sections for 'Welcome to Builds', 'Browse build definitions', 'Browse build queue', and 'Browse build engines'. The 'Build Engines' section 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 displays the IBM Rational Team Concert (RTC) interface. On the left, there's a 'Team Artifacts' sidebar with various navigation options like 'My current work', 'Open Adoptions', and 'Open Epics'. The main area shows a 'Edit Query' dialog with two conditions selected: 'Status is Unresolved' and 'Planned For is Current Iteration'. Below the dialog is a table titled 'Work Items - Found 29 work items - Open for Current Iteration'. The table has columns for Type, Id, Summary, Owned By, Status, Priority, Severity, and Modified Date. It lists three work items: one by Deb (New, 3/12/2018 5:26 PM), another by Deb (New, 3/12/2018 5:27 PM), and one Unassigned (New, 9/3/2015 10:01 PM). At the bottom right, there's a footer with the text 'IBM Watson IoT' and the number '19'.

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

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

The screenshot shows a 'Discussion' panel within an RTC work item interface. At the top, there's a text input field with placeholder 'Add a comment...'. Below it, there are two comments:

- A comment from user '2. al' posted 1 minute ago, stating: 'This work item was mentioned in Gitlab note 3.'
- A comment from user '1. clm' posted Jun 5, 2017 3:23 PM, stating: 'This work item was mentioned in Gitlab note 2.'



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

Compare Configurations

< Artifacts > Legend >

In both, but different (4)

19770: Business Recovery Matters Vision

19676: Donors will receive confirmation and receipt

19926: Requirements Specification Template

19693: Use Case Specification - JKE Banking...

Changes from Banking Initial Stream to Some changes.

19676:Donors will receive confirmation and receipt

Some changes

<<Identify all the related features and requirements associated with this requirement>>

Additional Information

Include, or provide references to :

1. Any additional information required to clarify/elaborate this requirement.
2. Sketches, storyboards, screenflows, high level process flow and examples
3. Any thing else you fancy.

Donors will receive confirmation and receipt

Banking Initial Stream

Related Features

<<Identify all the related features and requirements associated with this requirement>>

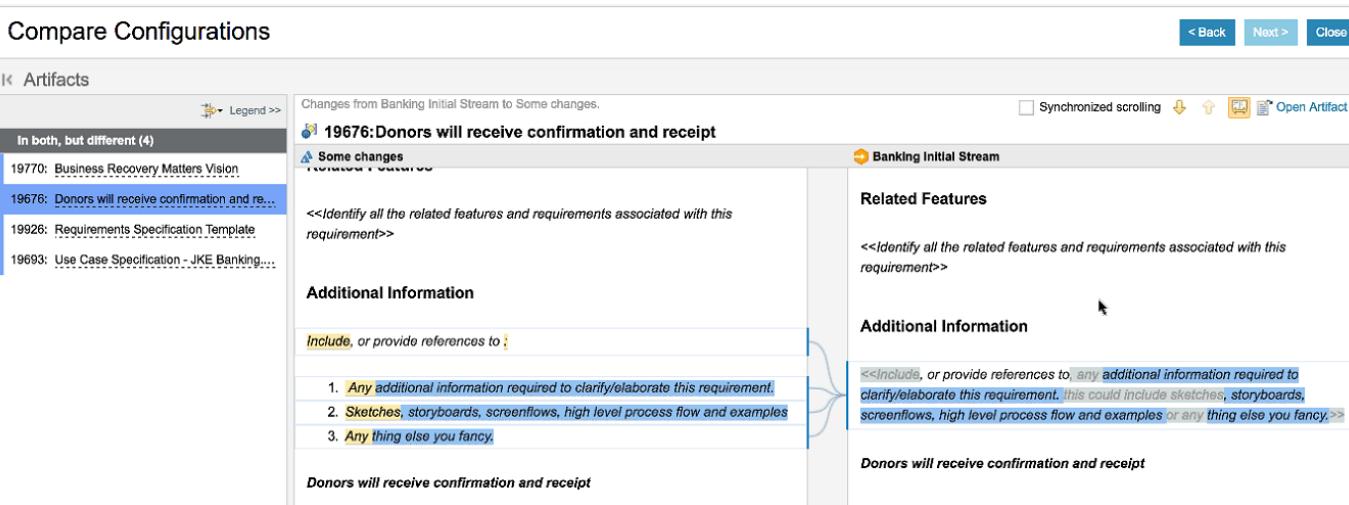
Additional Information

<<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. >>

Donors will receive confirmation and receipt

< Back Next > Close

Synchronized scrolling Open Artifact



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.

The screenshot shows the RTC Source Control interface for a Java file named `SimpleClock.java` (Version: 2). The path is `Source Control > Streams > SimpleClock > Clock > MyClock > src > test > SimpleClock.java`. The interface includes tabs for Overview, History, Operation History, and Links (which is selected). Under the Links tab, there are sections for Validity (green checkmark), Artifact Links (Requirement 1819: Requirement for clocks), and Affects (SimpleClockUserManual.txt).

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 for an artifact named "Actor: MeterReader". The "Links" section displays three types of links: "Link From" (1), "Link To" (2), and "Synonym" (1). A context menu is open over the "Link To" section, with the option "Group by Link Direction" highlighted. The "RDNG" (Requirement Direction) section below shows the directionality of links. The "Links" panel indicates "Incoming links. These links are stored in another application." A callout box provides more information about link direction and ownership. To the right, a sidebar titled "Related Sites" lists various Rational products and their links to the current artifact. Three specific links are circled with red boxes: "Validates Requirements" (with a pink arrow icon), "Tests Development Items" (with a yellow arrow icon), and "Related Change Requests" (with a yellow arrow icon).

Links (4)

- Link From (1)
 - 546: F
- Link To (2)
 - 545: F
 - 548: F
- Synonym (1)
 - 547: F

- 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
- Group by Link Direction

RDNG

Actor: MeterReader

Add Link

- Derives From
- Refines
- Satisfies
- Trace
- Elaborates
- Validated By
- External

Links

Derives From (1)

- 220: Operational Environment Req

Elaborates (1)

- 5: D

Incoming links.
These links are stored in another application.

Validated By (1)

- 5: V
- 3: Validate Reader speed

Read more about link direction and link ownership.

Related Sites

- IBM Rational
- IBM Rational Quality Mgmt
- Parent Test Plans (1)
 - sample test plan
- Related Test Suites (1)
 - sample test suite
- Related Test Scripts
 - sample test script
- Validates Requirements
- 376: Business Recovery Matters Vision
- Tests Development Items
- 96: Offer more services related to loans
- Related Change Requests
- 91: Allow to edit user details

RQM

RMM

Model-based engineering

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

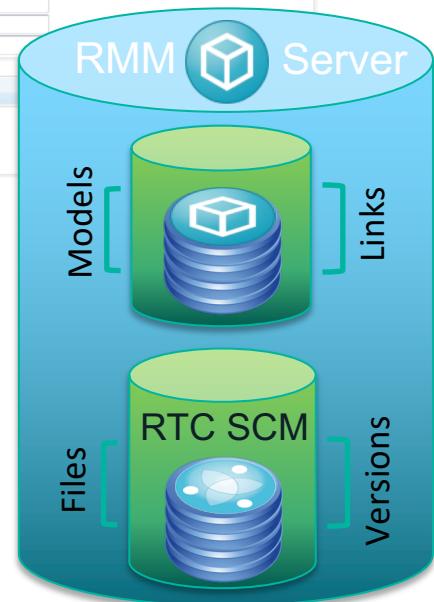
First release (V6.0.5) included ...

- 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

The screenshot shows the RMM interface with the title 'AMR AM'. The navigation bar includes 'Project Dashboards', 'Designs', 'Source Control', 'Explorer', 'AMR AM Main Component', 'SysMLS', 'AMR_System', 'Packages', 'ActorPkg', 'Actors', and a 'Show in Rhapsody' button highlighted with a red box.

The main content area displays the 'Actor: MeterReader' details. It includes a 'General' section with fields: Name (MeterReader), Type (Actor), and Last Modified (8 minutes ago). Below it is a 'Links' section showing 'Derives From (1)' and a link to '220: Operational Environment Requirements'.



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

Project Dashboards ▾ Designs ▾ Source Control ▾

Explorer ▷ AMR AM Main Component ▷ SysMLs ▷ AMR_System Packages ▷ DesignS ▷ ArchitecturalDesignPkg Packages ▷ AMRSystemExecutionScopePkg Internal Block Diagrams

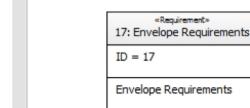
Internal Block Diagram: IBD AMRSystem

General

Name:	IBD AMRSystem
Type:	Internal Block Diagram
Last Modified:	2 minutes ago

Links

No Links



1

itsAMRSystem

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

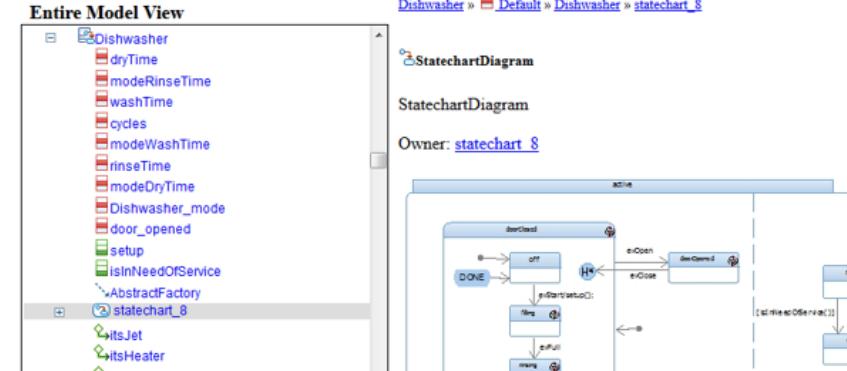
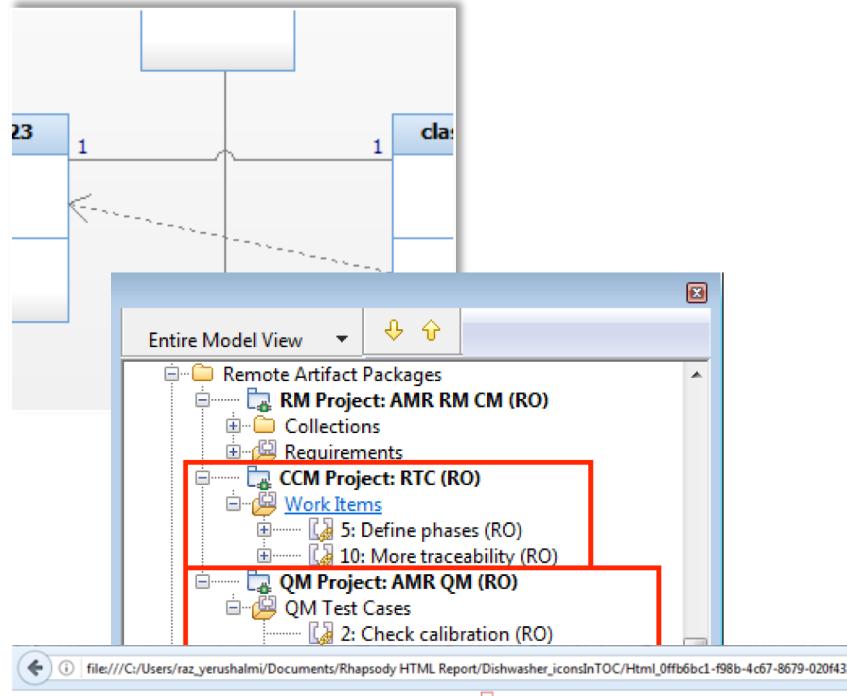
Document Generation: Hyper-linked HTML report on model through RPE (tech preview)

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 *

Overview
Timelines
Roles
Permissions
Iteration Types
Configuration Management
Access Control
Process Description
History
Requirements
Workflows
Team Invitation
Email Template

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

Electronic Signature

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

Reasons for signing

Value
Approved
Conditional Approval
Reject

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

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

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

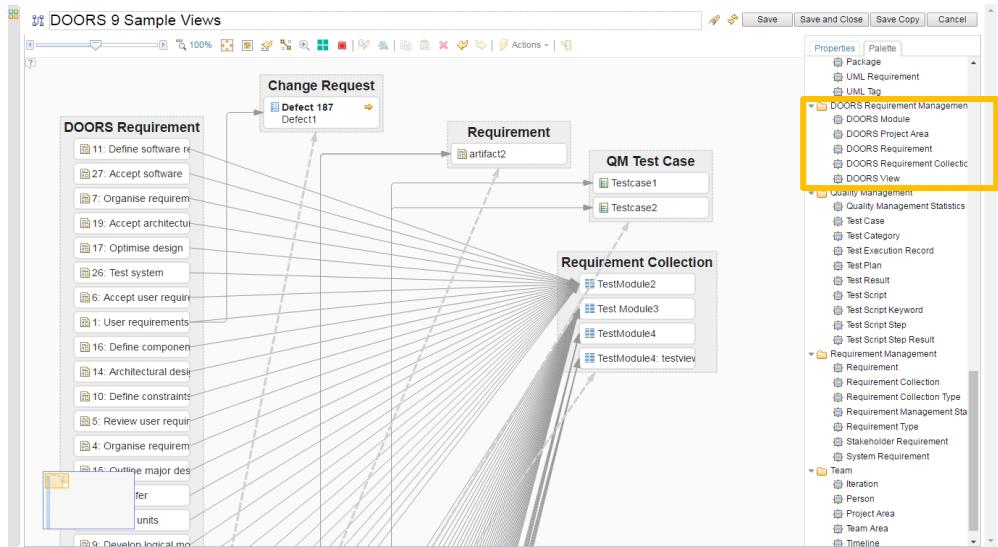
All:

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

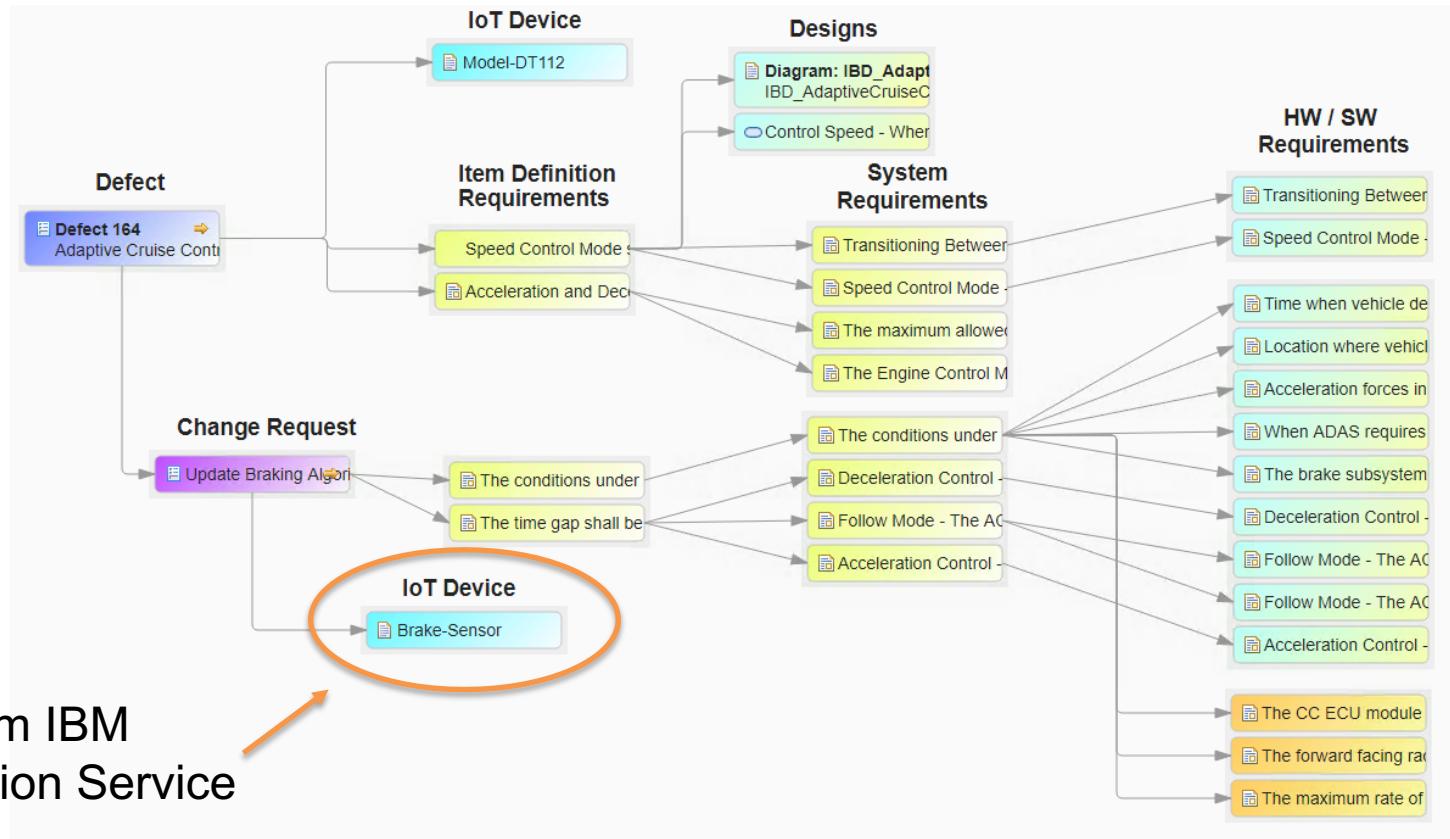
Digital thread

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 interface with a flow named "Flow 1". The flow consists of the following nodes and connections:

- A "Temp Input" node (blue) is connected to a "Temp test" node (yellow).
- The "Temp test" node has two outputs: one leading to a "No Alert" terminal (green) and another leading to a "create Alert" node (orange).
- The "create Alert" node has an output leading to an "Alert" terminal (green).

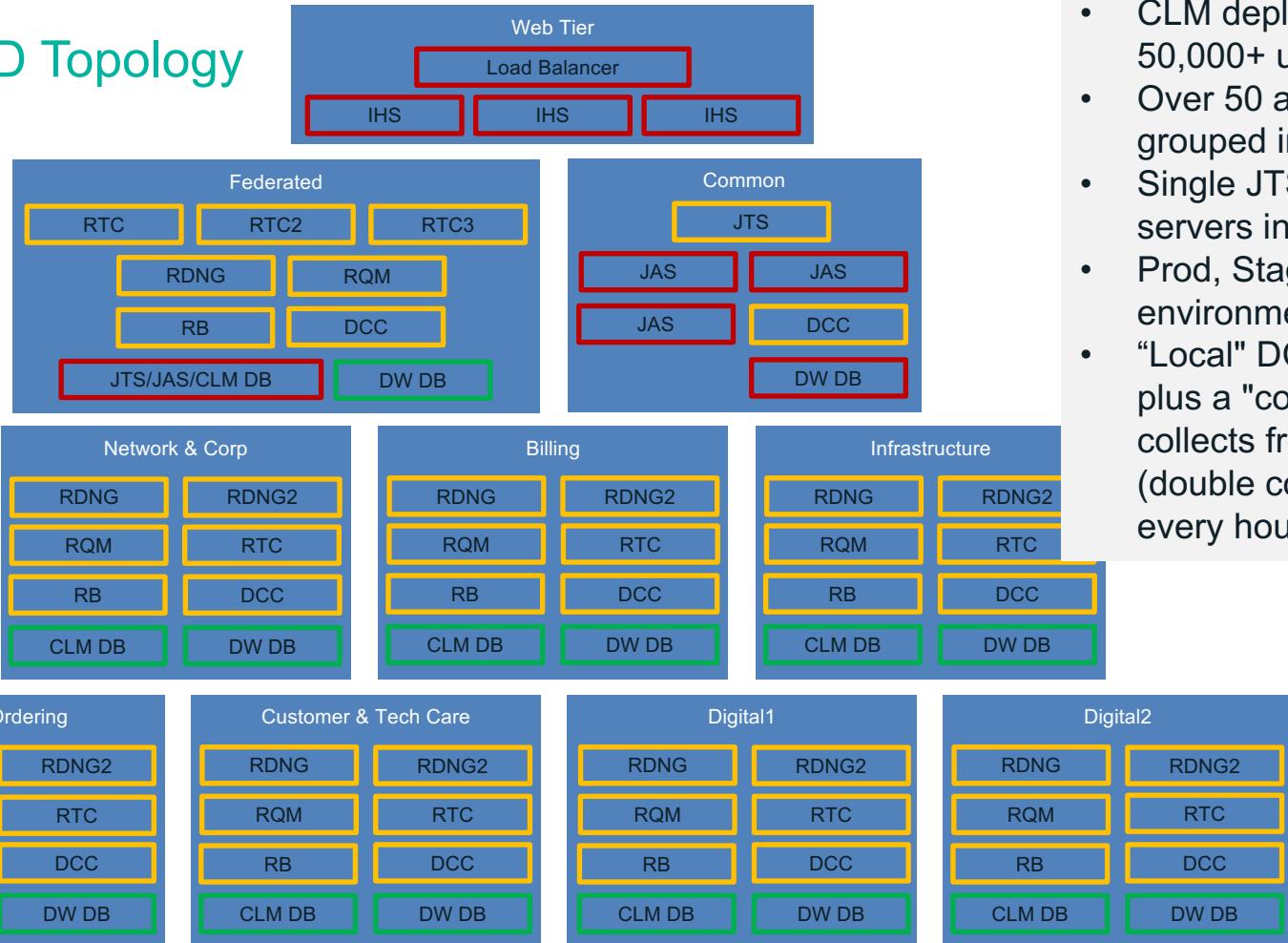
On the left, a sidebar lists various nodes: range, split, join, sort, batch, csv, html, json, xml, yaml, alert node, and rbe.

On the right, a modal dialog titled "Edit alert-node node" is open, showing the following configuration details:

node properties	Value
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 t

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

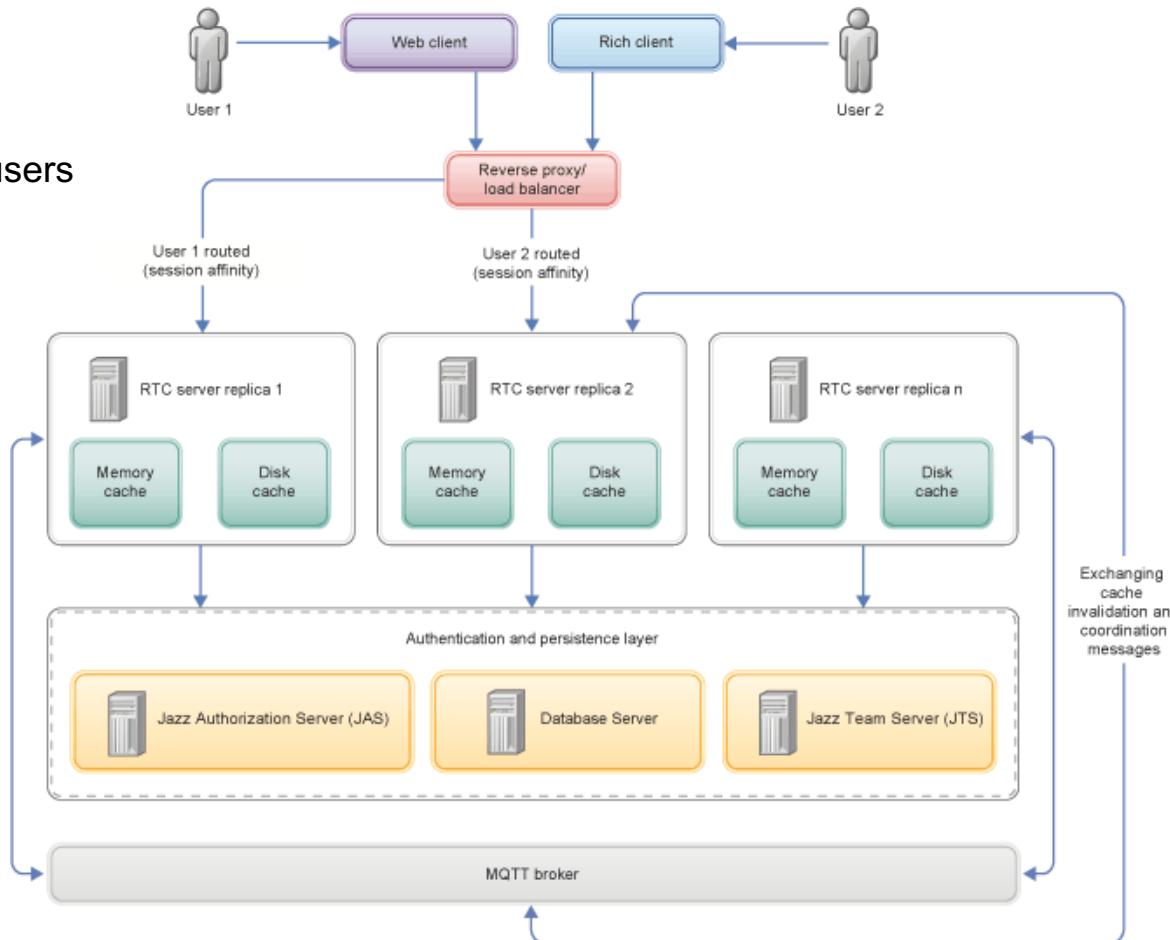
Higher availability

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)

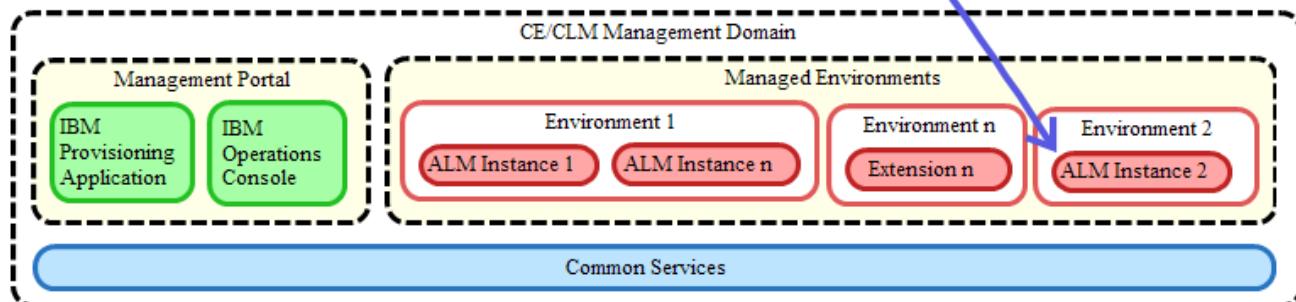
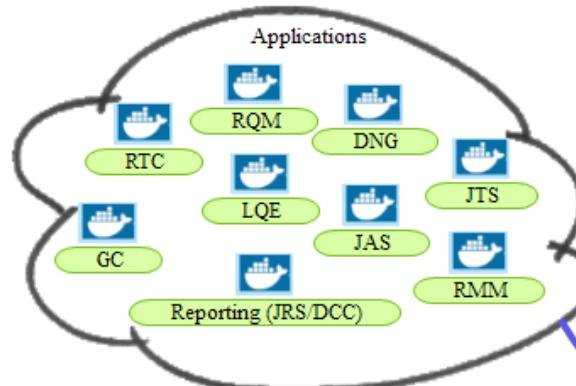
[436262: Add distributed cache counters as mbeans within cluster metrics task](#)

CE/CLM Management Domain using containers and new automation

Tech preview

Goals

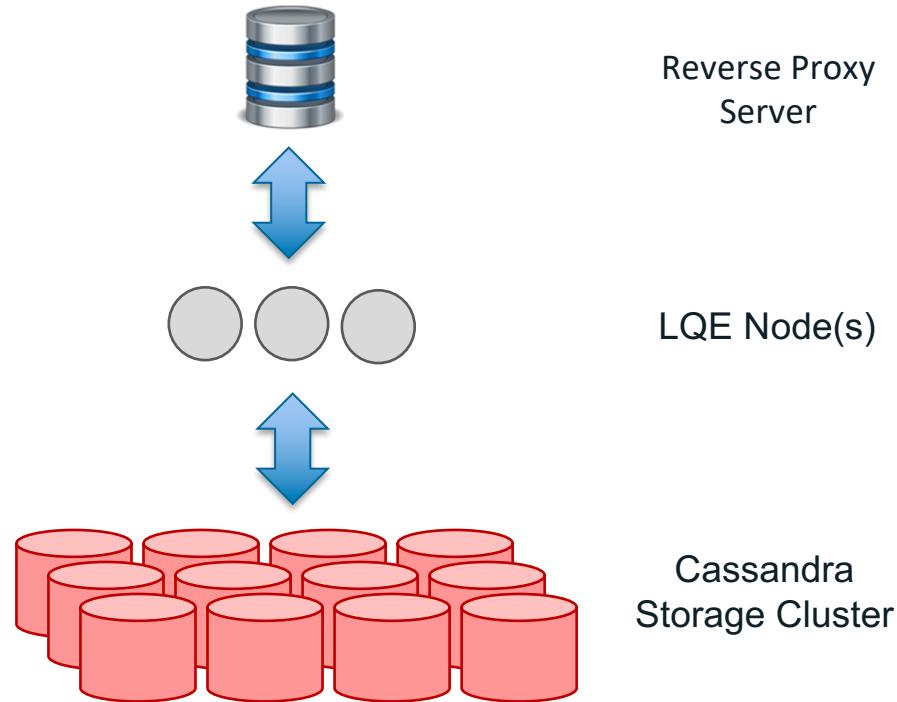
- Simplify installation, configuration, operational management, troubleshooting, and upgrading
- Reduce skill needed to setup and maintain CE/CLM environment
- Improve time to value



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

Tech preview

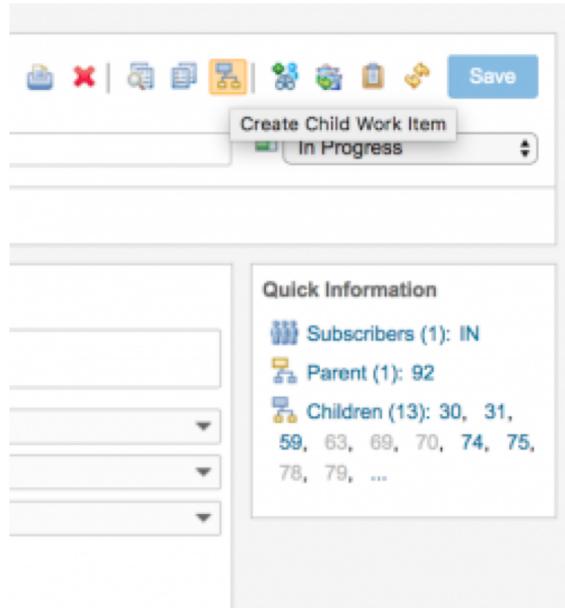
With property graph (JanusGraph)



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. If they have a matching type, they must be manually mapped below. 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
	=	
	→	

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 | + - X |

Selected artifact: Displaying 1-9 of 9 matches

ID	Name	Description
168	Falsified information will lead to denied status	
163	Request will be closed if no response from organization	
162	Organization or customer response required	Organization and/or customer must respond to any requests for additional information or application will receive a "no response" status.
98	Org	
84	Do	
70	Ch	
68	Do	
19	Re	
14	Do	

Related Requirements

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

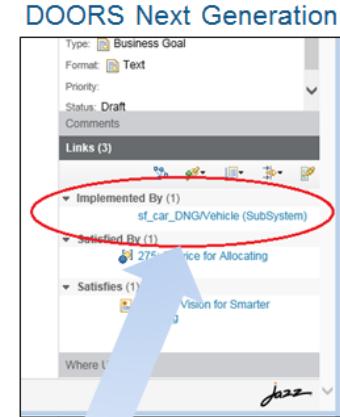
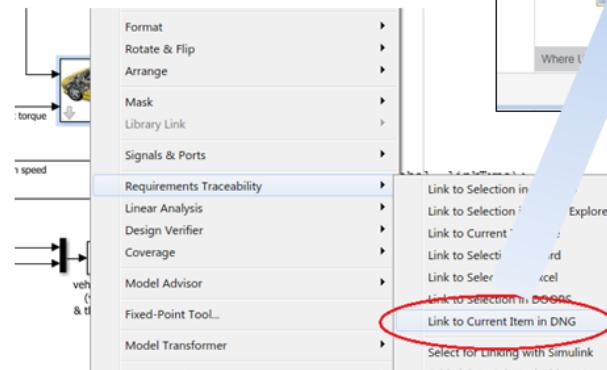
- Now you can exchange data with DOORS 9 user, confident that only the allowed attributes can be updated.
- DNG → DOORS → DNG with DNG as the source database

The screenshot shows the Requirements Management (Jm) application interface. The top navigation bar includes 'Demo Project 1 | Active Component A', 'Project Dashboard', 'Artifacts', 'Reviews', and 'Reports'. Below this is a toolbar with icons for 'Attribute Data Types', 'Link Types', 'Link Constraints', 'Link Validity', 'Module Options', and 'Terminology'. The main content area is titled 'ReqIF' with a subtitle 'Create and manage ReqIF definitions, which are used to create and export ReqIF files.' A table lists 'ReqIF Definitions' with two entries: 'Supplier ReqIF - Locks' (selected and highlighted in orange) and 'Supplier ReqIF - No Locks'. A 'New Definition...' button is available. To the right, there are fields for 'Name:' (Supplier ReqIF - Locks) and 'Description:'. A modal dialog titled 'Add Attribute Locks for DOORS 9 to the ReqIF Definition' lists 'Available Attributes' including 'ReqIF.ChapterName', 'ReqIF.ForeignCreatedThru', 'ReqIF.ForeignDeleted', 'ReqIF.Name', 'ReqIF.Prefix', and 'Supplier Comments'. Buttons for 'OK' and 'Cancel' are at the bottom right of the modal.

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 (Jan) JKE Banking (Quality Management)

Project Dashboards Requirements Architecture Elements Planning Construction Lab Management Builds Execution Reports Change Requests qmadmin 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">Sample data loaded into Application Under Test per design spec.Sample user "jbrown" configured in AUT."jbrown" has dividend bearing account with positive account balance.	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">Sample data loaded into Application Under Test per design spec.At least three different organizations have been configured	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">Sample data loaded into Application Under Test per design spec.Sample user "jbrown" configured in AUT.At least four different organizations have been configured	Bob	6 h
12	■	Organization must provide justification for why funds are needed	Under Review	100	<ul style="list-style-type: none">Sample data loaded into Application Under Test per design spec.Several organizations have been configured and at least one should have all justification and one should not have it		
13	■	Donation amount limits	Draft	40	<ul style="list-style-type: none">Sample data loaded into Application Under Test per design spec.Sample user "jbrown" configured in AUT."jbrown" has dividend bearing account with positive account balance.		
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">Sample data loaded into Application Under Test per design spec.Sample user "jbrown" configured in AUT."jbrown" has dividend bearing account with positive account balance.		
17	■	JKE Charity Coordinator responds to online request	Draft	100	<ul style="list-style-type: none">Sample data loaded into Application Under Test per design spec.Several organizations have been configured		
18	■	Dividend Allocation by Percentage	Draft	20	<ul style="list-style-type: none">Sample data loaded into Application Under Test per design spec.Sample user "jbrown" configured in AUT."jbrown" has dividend bearing account with positive account balance.	Marco	3 h
19	■	Allocate Dividends to a Single Cause	Draft	125	<ul style="list-style-type: none">Sample data loaded into Application Under Test per design spec.Sample user "jbrown" configured in AUT.At least four different organizations have been configured	Tanuj	2 d 2 h
25	■	(QM Tutorial) Allocate Dividends to Multiple Causes	Approved	125	<p>Sample data loaded into Application Under Test per design spec.</p> <p>Sample user "jbrown" configured in AUT.</p>	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

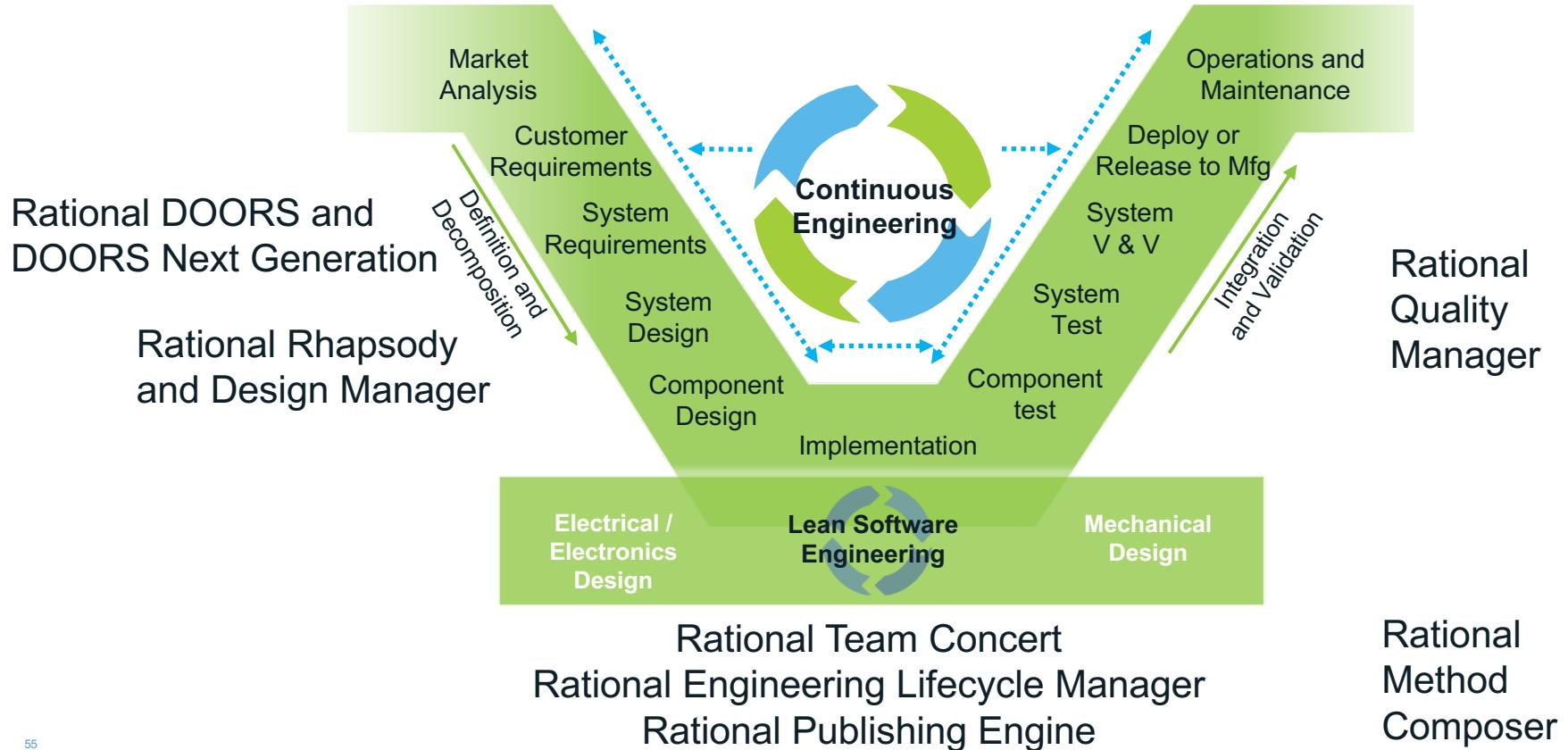
Administration

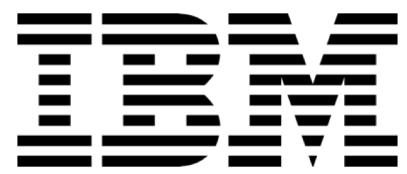
- Windows 10 LTSB – client
- Windows 2016 – server
- SUSE 12 – server
- RDS – support for TDS (now SDS)
- Office 2016
- RHEL 7
- Firefox 60

Integrations

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

IBM IoT Continuous Engineering Solution





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.

Please note



IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice and at IBM's sole discretion.

Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision.

The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code or functionality. Information about potential future products may not be incorporated into any contract.

The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput or performance that any user will experience will vary depending upon many factors, including considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve results similar to those stated here.

Notices and disclaimers

© 2018 International Business Machines Corporation. No part of this document may be reproduced or transmitted in any form without written permission from IBM.

U.S. Government Users Restricted Rights — use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM.

Information in these presentations (including information relating to products that have not yet been announced by IBM) has been reviewed for accuracy as of the date of initial publication and could include unintentional technical or typographical errors. IBM shall have no responsibility to update this information. **This document is distributed “as is” without any warranty, either express or implied. In no event, shall IBM be liable for any damage arising from the use of this information, including but not limited to, loss of data, business interruption, loss of profit or loss of opportunity.** IBM products and services are warranted per the terms and conditions of the agreements under which they are provided.

IBM products are manufactured from new parts or new and used parts. In some cases, a product may not be new and may have been previously installed. Regardless, our warranty terms apply.”

Any statements regarding IBM's future direction, intent or product plans are subject to change or withdrawal without notice.

Performance data contained herein was generally obtained in a controlled, isolated environments. Customer examples are presented as illustrations of how those

customers have used IBM products and the results they may have achieved. Actual performance, cost, savings or other results in other operating environments may vary.

References in this document to IBM products, programs, or services does not imply that IBM intends to make such products, programs or services available in all countries in which IBM operates or does business.

Workshops, sessions and associated materials may have been prepared by independent session speakers, and do not necessarily reflect the views of IBM. All materials and discussions are provided for informational purposes only, and are neither intended to, nor shall constitute legal or other guidance or advice to any individual participant or their specific situation.

It is the customer's responsibility to insure its own compliance with legal requirements and to obtain advice of competent legal counsel as to the identification and interpretation of any relevant laws and regulatory requirements that may affect the customer's business and any actions the customer may need to take to comply with such laws. IBM does not provide legal advice or represent or warrant that its services or products will ensure that the customer follows any law.

Notices and disclaimers continued



Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products about this publication and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products. IBM does not warrant the quality of any third-party products, or the ability of any such third-party products to interoperate with IBM's products. **IBM expressly disclaims all warranties, expressed or implied, including but not limited to, the implied warranties of merchantability and fitness for a purpose.**

The provision of the information contained herein is not intended to, and does not, grant any right or license under any IBM patents, copyrights, trademarks or other intellectual property right.

IBM, the IBM logo, ibm.com and [names of other referenced IBM products and services used in the presentation] are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at: www.ibm.com/legal/copytrade.shtml.