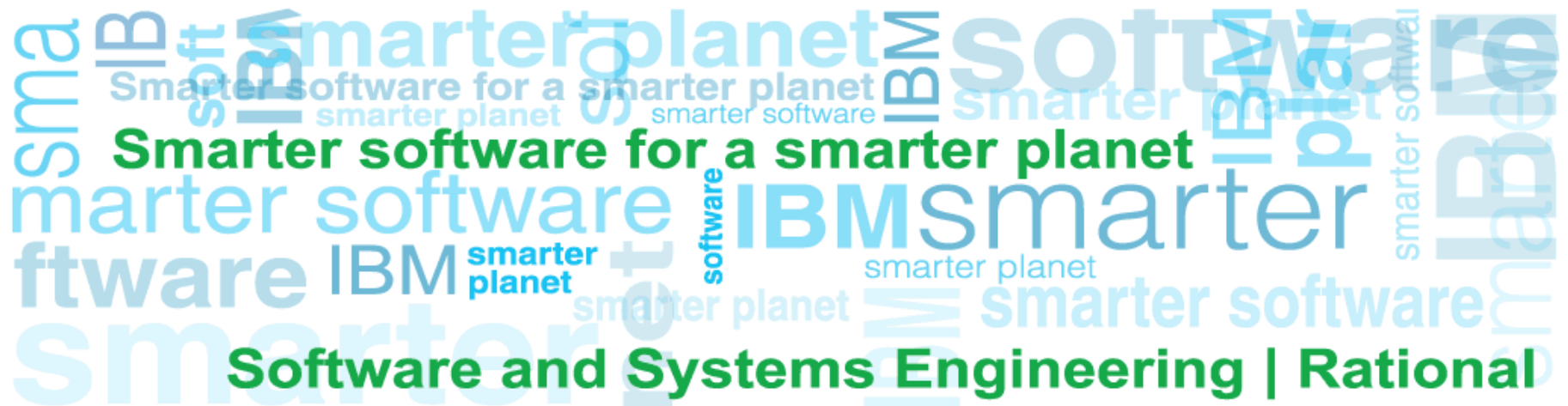


Rational Software Architect Design Management 4.0

Don Yantzi (yantzi@ca.ibm.com)

Product Manager, Rational Software Architect and Design Management



Challenges to Designing as a Team

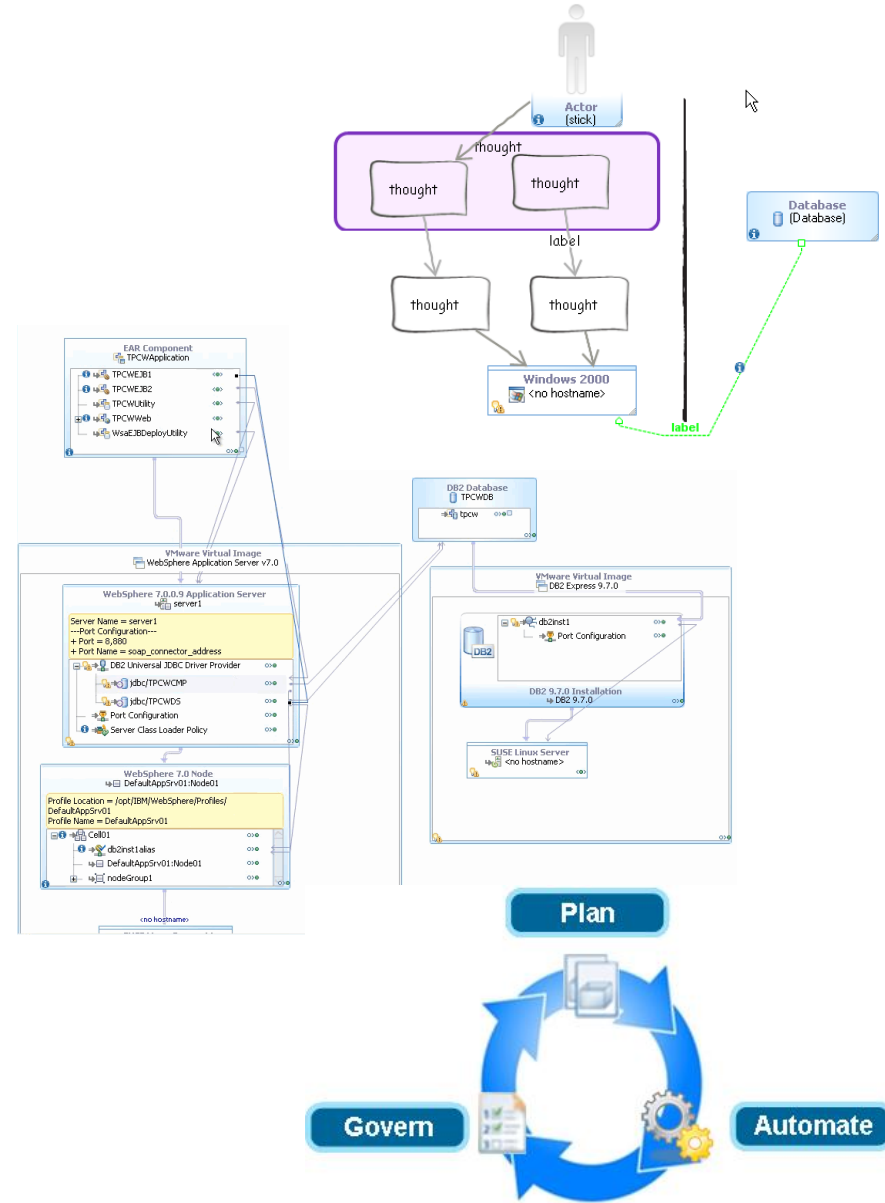


- Design is a key phase of the software and systems lifecycle
 - Simplify application and systems complexity
 - Accelerate implementation through model-driven development
 - Identify issues and defects early in the lifecycle when they are cheapest to fix
 - Document designs and communicate with stakeholders

- However design tools often focus on the individual and lack team integration
 - ✗ Teams cannot easily **share designs and get feedback** from stakeholders
 - ✗ Linking designs to other lifecycle artifacts is difficult, leading to a **lack of traceability and understanding of the impact** of changes
 - ✗ Difficult to **link designs** created by different tools
 - ✗ It takes too long to create **reports across multiple designs and lifecycle elements** for specifications, communication, regulatory compliance, and auditing
 - ✗ Many development teams **work in silos**, which limits the value the designs provide to other teams and the organization

IBM Rational Software Architect

- Agile Sketching** provides free form modeling capability enabling Agile development. Teams can quickly sketch out thoughts and convert to UML as more formality is needed.
- Software modeling and Model Driven Development with UML** allowing teams to communicate designs and generate code. Support for a variety of domains including UML2, BPMN2, Java/JEE, WSDL, XSD, SCA, SoaML, DoDAF 2, and more)
- Analyze and walk through scenarios before implementation with model simulation** that animates and simulates functionality and behavior.
- BPMN2** tooling allows business plans and goals to be directly incorporated into application architecture and design and the interchange of BPMN2 with other tools like WebSphere Lombardi and Rational System Architect
- Service modeling and SOA Support** allows architects to visualize SOA functionality plus guidance on process and pitfalls of candidate service identification and service and solution specification.
- Model software deployments and generate automation workflows** from deployment plans for Rational BuildForge or Rational Automation Framework for WebSphere (RAFW) with **Deployment Planning and Automation**

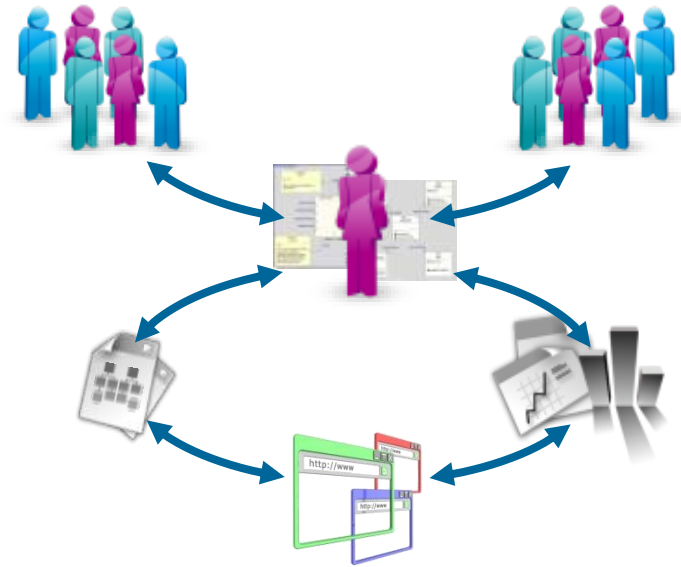


What is Design Management?

- ✓ **Design Management** integrates software and systems design into the lifecycle

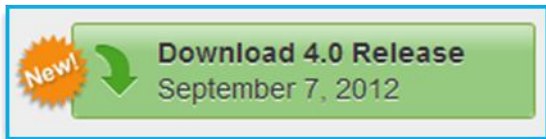
- ✓ Design Management helps teams to:
 - **Collaborate and iterate** on their software and systems designs
 - Produce **better quality designs with less time**
 - **Integrate designs and design process** with the rest of the lifecycle

- ✓ Design Management capabilities have been added to Rational's award winning software design solution **Rational Software Architect (RSA)** to enhance it's design capabilities with **new team collaboration and lifecycle capabilities**



More on collaborative design management

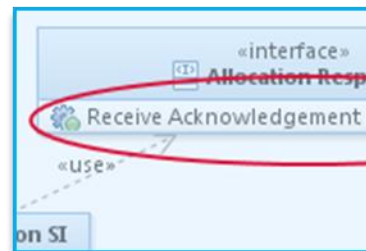
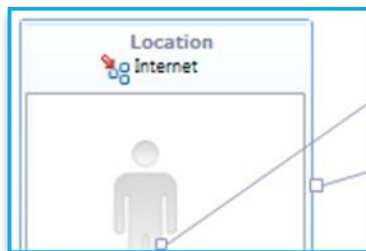
Rational Software Architect with Design Management



Features and capabilities

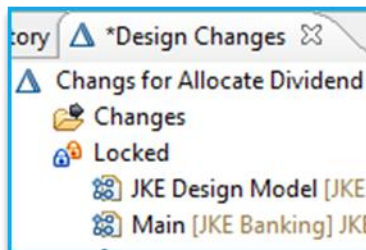
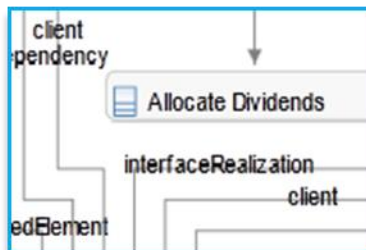
Design in context

Work seamlessly with analysts, developers, and testers using [RRC](#), [RTC](#), [RQM](#), and [DOORS](#). Make designs first class artifacts in your lifecycle projects.



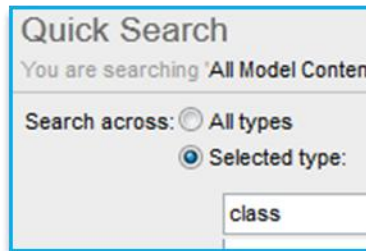
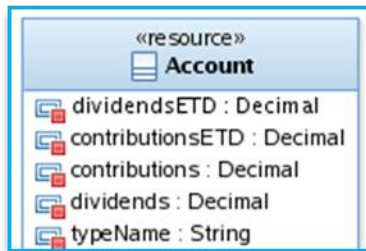
Traceability and impact analysis

Link designs to requirements, test artifacts, work items, and other designs. Visualize relationships within a design and with other lifecycle resources. Know the impact of a design change.



Publish design documents

Generate customized design documents from a template or create living design documents as part of your project.



Collaborate

Invite users and other experts to collaborate on your designs. Use threaded comments, design mark-up, and automated design reviews. Sketch out ideas before turning them into designs.

Manage change

Collaborate with your team on changes to the same designs without conflicts.

Designs at your finger tips

Quickly search across designs to learn from past projects and find reusable design components.

RSA Design Management: A Closer Look

Planning

- Integrated planning
- Effort estimation & progress tracking taskboards
- Out of the box process templates: formal or agile

Project Transparency

- Customizable web based dashboards
- Metrics and reports
- Project milestone tracking and status

Work Items

- Defects, enhancements and conversations
- View and share query results
- Support for approvals and discussions
- Query editor interface

Design Management

- Design change tracking
- Configuration management
- Design documents
- Searching and design reuse
- Impact Analysis

Collaboration

- Agile sketching (Web client)
- Commenting and markup
- Reviews
- Reporting
- Email notification

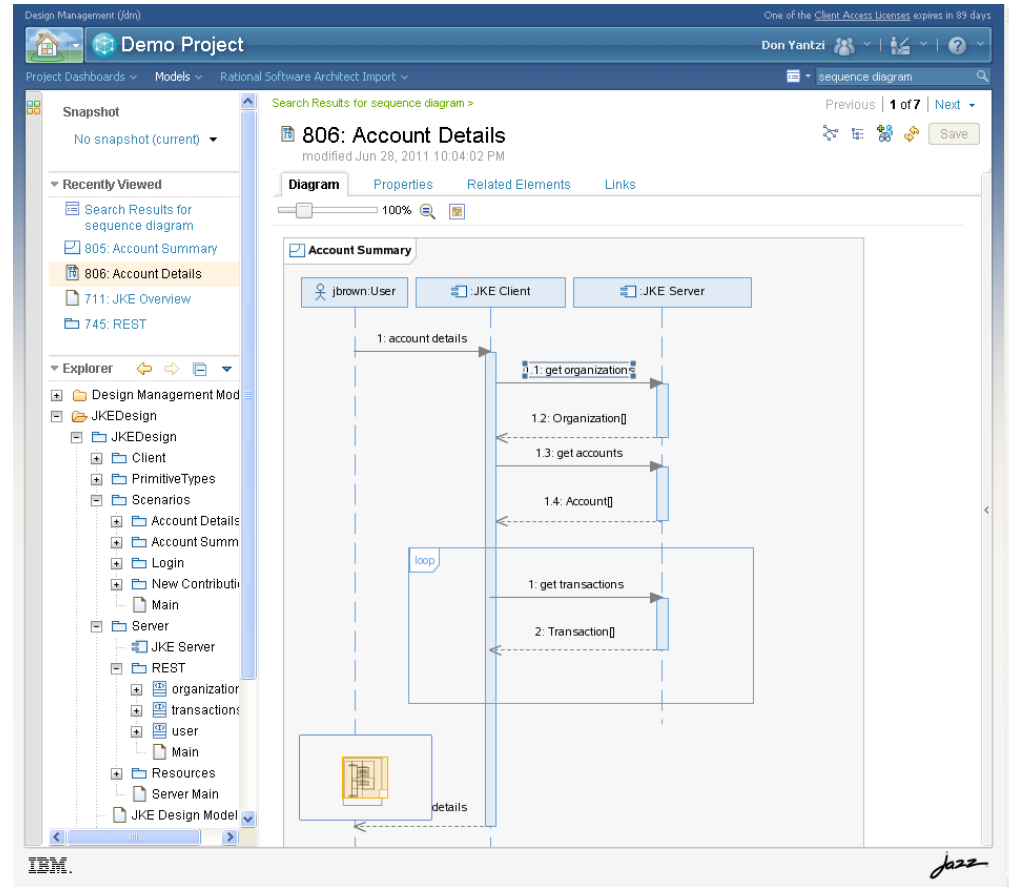
Lifecycle

- Central repository for design related artifacts
- Role-based access control
- Common user administration with CLM
- Lifecycle projects with design
- Traceability between designs and requirements, work items, and quality artifacts
- Reporting and analysis across the lifecycle
- Dashboards across the lifecycle

Central Design Repository



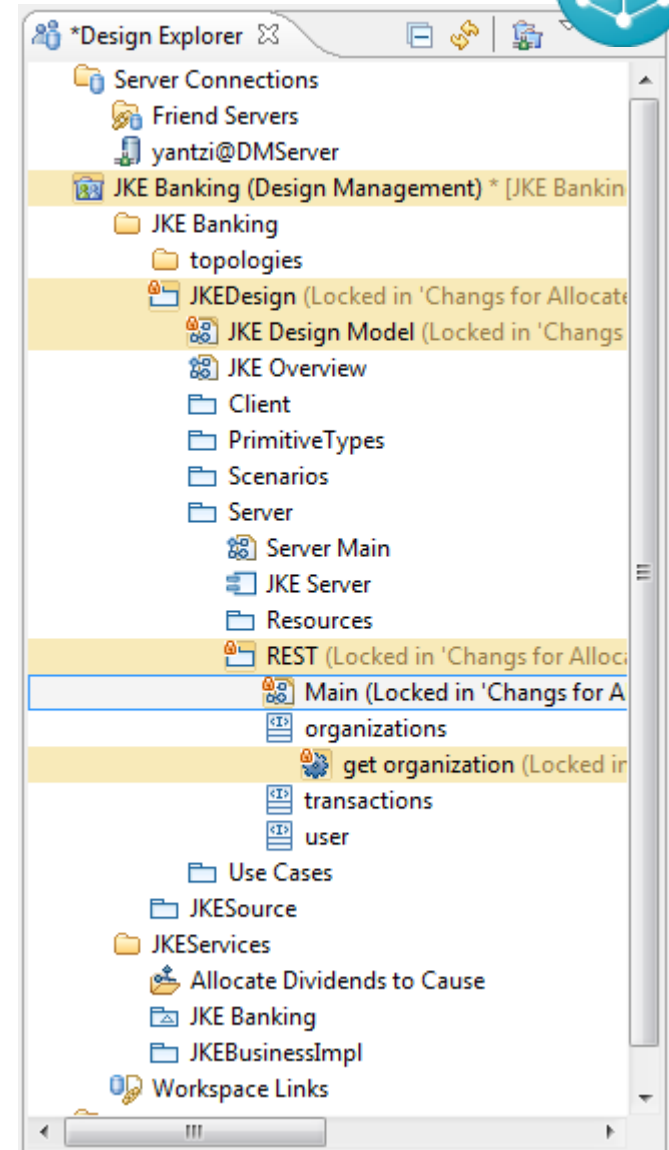
- Increase **team knowledge** through an enterprise and system-wide software design repository
- Analysts, SMEs, testers, and other extended team members can **access designs through a Web client**
- Designs become URL addressable
- **Search** for designs across projects
- Stay connected with ongoing design activities via **dashboards**
- Navigate designs and **visualize relationships**



Simplified Design Change Control & Configuration Management



- **Designs directly editable** on Jazz from RSA and Rhapsody
- Locking, versioning, history, and change control on individual model elements
- **Parallel workspaces** and snapshots
- Changes grouped into change sets
- Design reviews on private changes prior to sharing

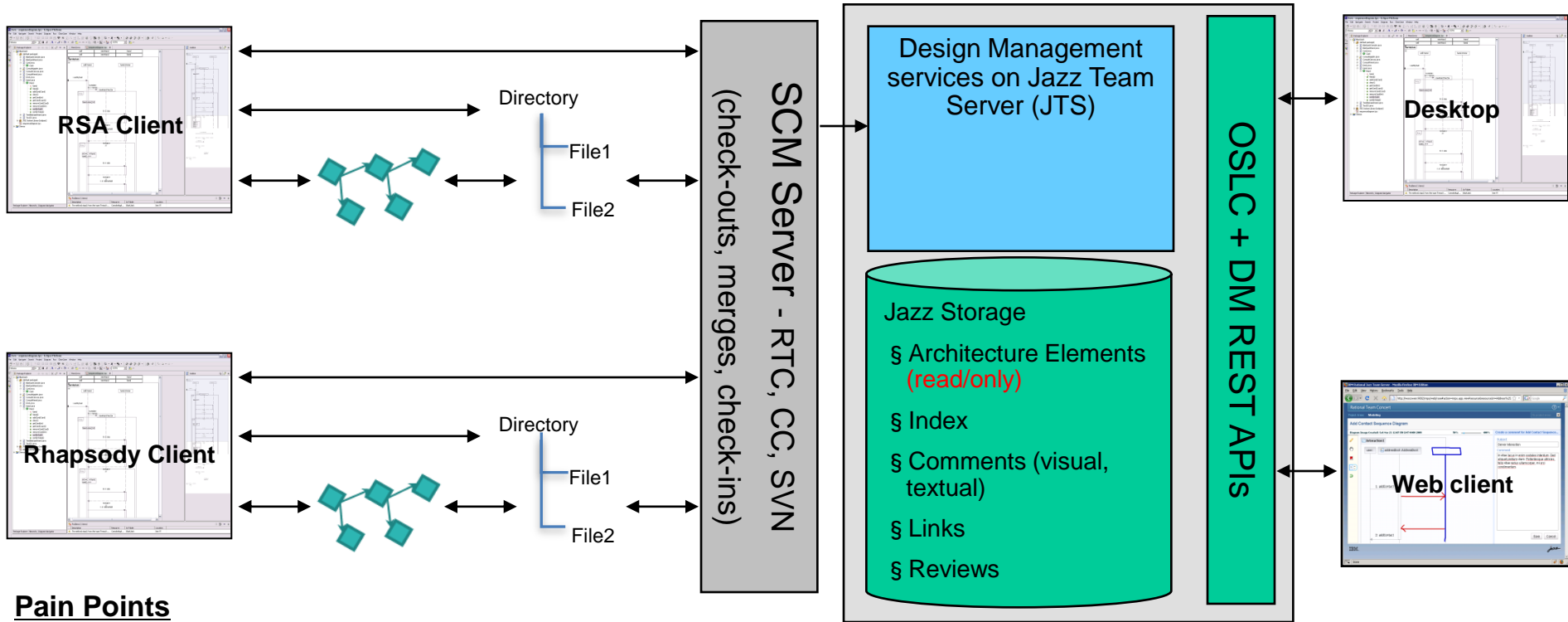


Design Management – v3.0

Creation, editing, MDD, search, query, validate, analyze, report

Design change control and versioning (file-based)

Design search, query, view, comment, review, link, report, validate, analyze



Pain Points

- Mapping models into files for persistence and change control
- Comparing and merging changes in file-based SCMs
- Two steps process to get models into DM (check-into SCM then import into DM)

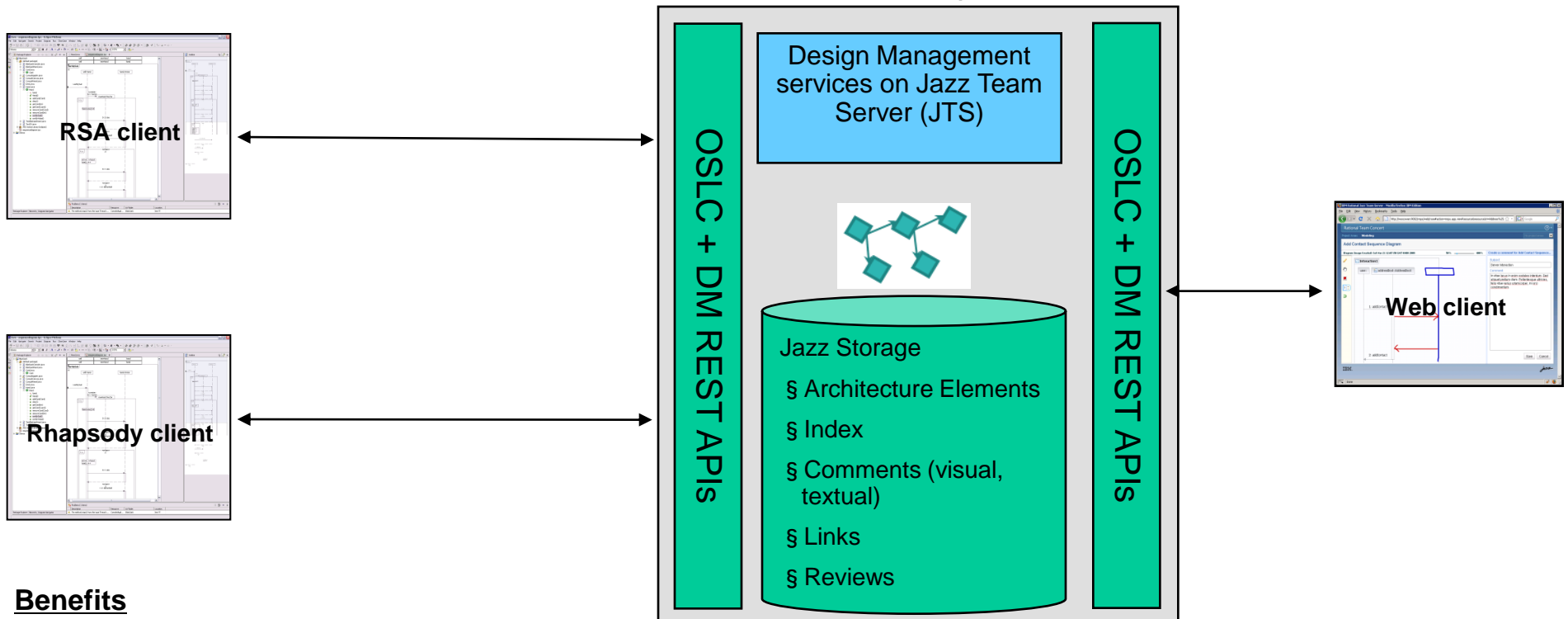
Design Management v4.0 (New Mode)

Previous mode with import engine still supported

Design creation, editing, MDD, search, query, validate, analyze, report

Design change control and versioning (model-based)

Design search, query, view, comment, review, link, report, validate, analyze



Benefits

- Direct editing of designs and change control on server providing a more simplified environment
- Change control (locking, history) at the model resource level providing more granularity and
- No duplication or design synchronization issues
- Use of SCM still available for users who need more powerful change control capabilities

Lifecycle Integrations



- Bi-directional traceability between requirements (RRC & DOORS) and RSA design
- Bi-directional traceability between designs and work items
- Stakeholders can easily find designs
- Understand the impact of changes to requirements or designs

Change and Configuration Management (ccm)

JKE Banking (Change Management)

Project Dashboards ▾ Work Items ▾ Plans ▾ Source Control ▾ Builds ▾ Reports ▾

Work Items >

Task 90 ?

Summary: *

Overview Links Approvals History

Attachments

Add File: Browse

No Attachments.

Links

Add: Related ▾

Blocks

- ↳ 91: Implement the Design for Allocating Dividends Service
- ↳ Elaborated by Architecture Element
- ↳ 2040: Logical Topology
- ↳ 2139: Service Interfaces - Overview
- ↳ 89: Design Allocating Dividends Service

Depends On

- ↳ 89: Design Allocating Dividends Service

Parent

- ↳ 88: Allocate Dividends with Web Service

2139: Service Interfaces - Overview

Project Name: JKE Banking (Design Management)
Long Name: [JKE Banking (modeling)] JKE Banking::3 - Service Interfaces::Service Interfaces - Overview
Type: UML2 Modeler - Freeform UMLDiagram
Modified: Jan 26, 2012 8:56:38 AM
Last Comment: Mar 12, 2012 12:11:21 PM

```

sequenceDiagram
    participant donor as donor:«WSDL»Allocation...
    participant bank as bank:«WSDL»Dividend.
    donor->>bank: 1: Allocate Dividends to Cause
    bank-->>donor: 1.1: Receive Acknowledgement
    
```



Design Collaboration

- Improve quality with ongoing stakeholder involvement in the design process
- In-context **design collaboration through commenting and visual markup**
- **Automate manual and time consuming design reviews** with a more guided process
- Comments can be posted and accessed from Web client and RSA desktop client

The screenshot displays the IBM Design Management (Jdm) web interface. The main window shows a sequence diagram titled '*777: Login Unsuccessful' (modified Sep 21, 2011 9:09:00 AM). The diagram involves three lifelines: 'kgreen:User', ':JKE Client', and 'jKE Server'. The sequence of messages is as follows: 1: login (from User to Client), 1.1: get user (from Client to Server), 1.2: 404 Not Found (from Server to Client), and 2: Invalid login (from Client to User). A red oval highlights the '2: Invalid login' message. On the right side, a comment box is open for the diagram, with the subject 'Lockout Question' and the comment text: 'Will the user be locked out after a certain number of failed attempts?'. The interface also shows a search bar with 'Login' entered and a 'Save' button.

Design Collaboration from the RSA client

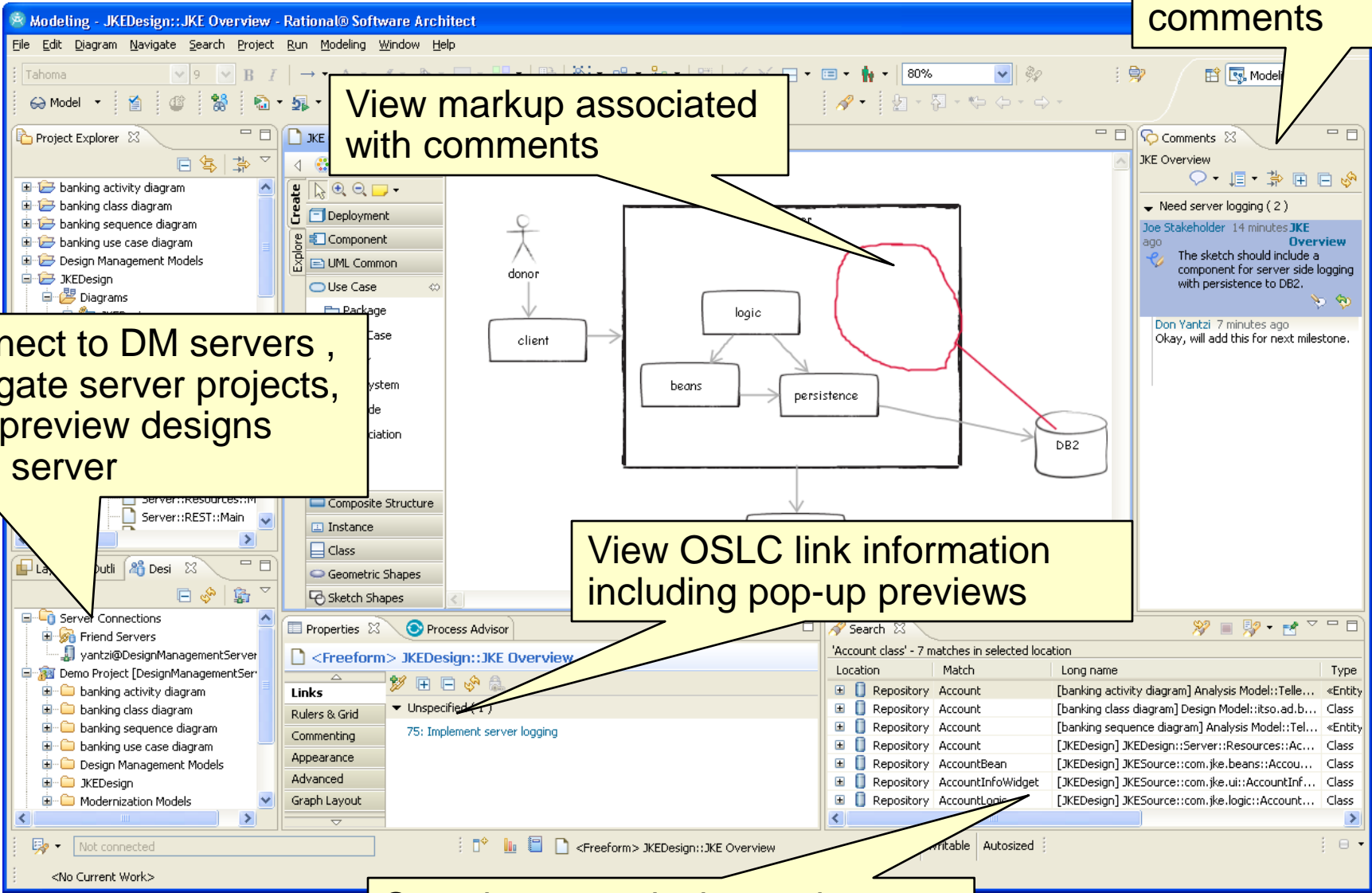
View design comments

View markup associated with comments

Connect to DM servers, navigate server projects, and preview designs from server

View OSLC link information including pop-up previews

Search across design projects



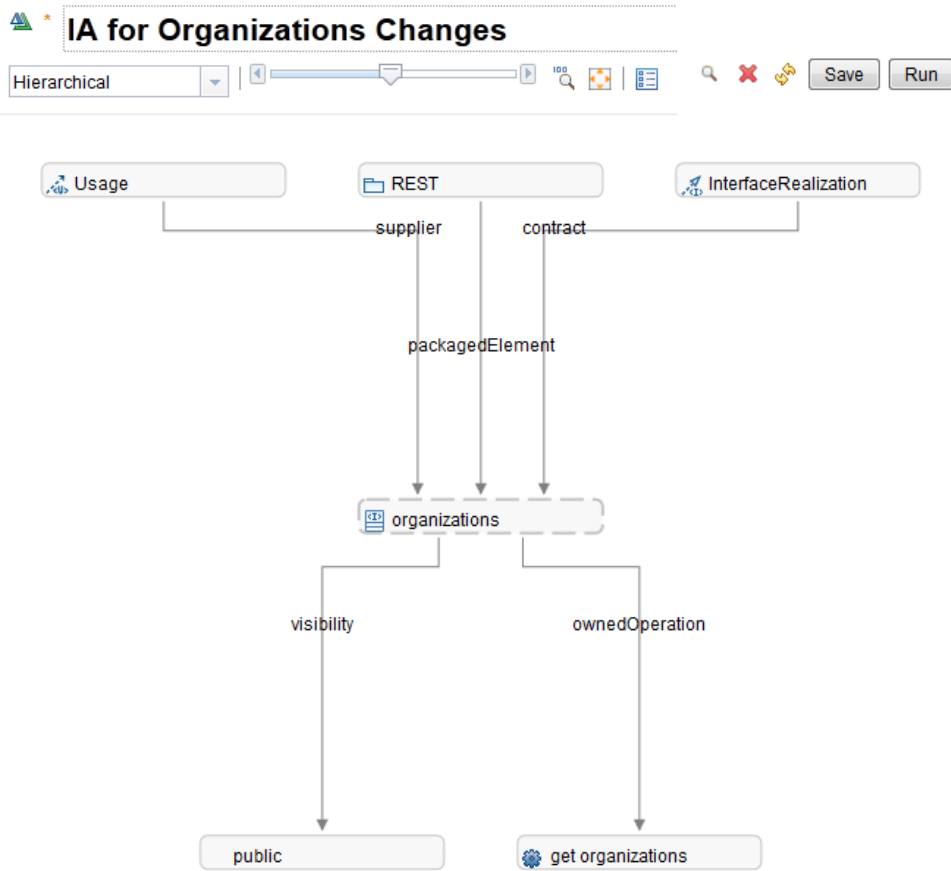
Impact Analysis



- New graphical impact analysis diagram that includes **design and linked lifecycle** artifacts

- **Analysis Configuration** defines the parameters for the analysis
 - **Upstream** level, **downstream** level, which links types to include
 - Can be used be shared by multiple analysis

- **Analysis** applies the configuration to a selected element to perform the impact analysis
 - Save and re-run at a later time

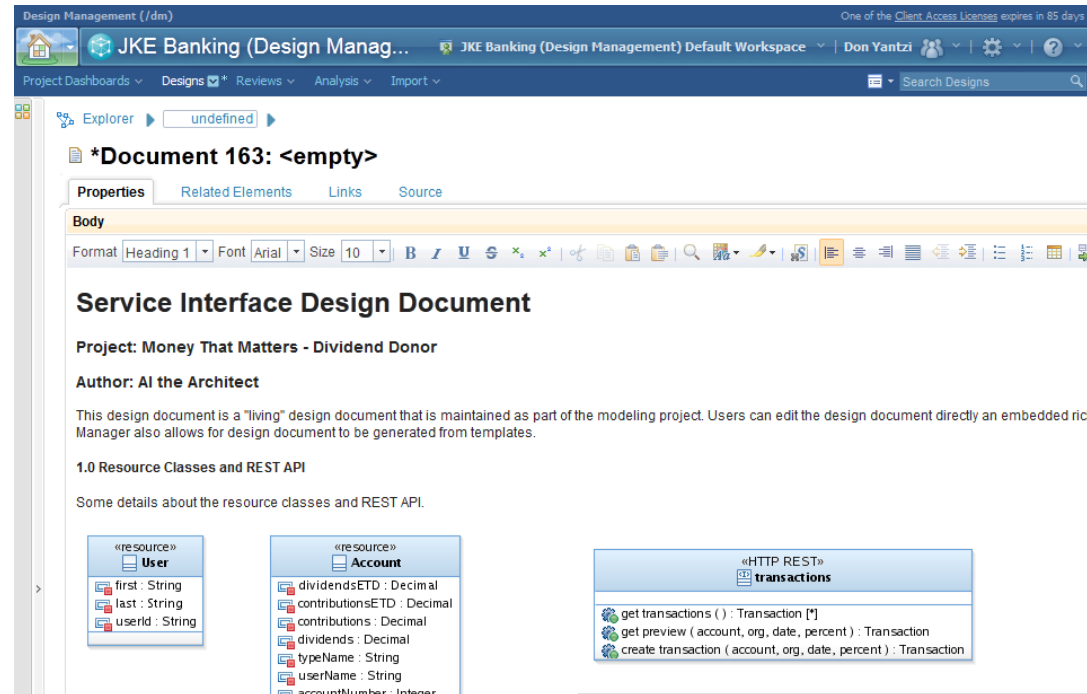


Document Your Designs



- Generate **documents from templates**
 - Author templates with RPE Document Studio
 - Configure and generate documents from templates in Design Manager

- Create **living design documents**
 - Rich text documents with embedded design links
 - Add to any design project
 - Keep current as designs change
 - Editable from the Web client
 - All the features of Design Management: linking, change control, searching, commenting, and design reviews

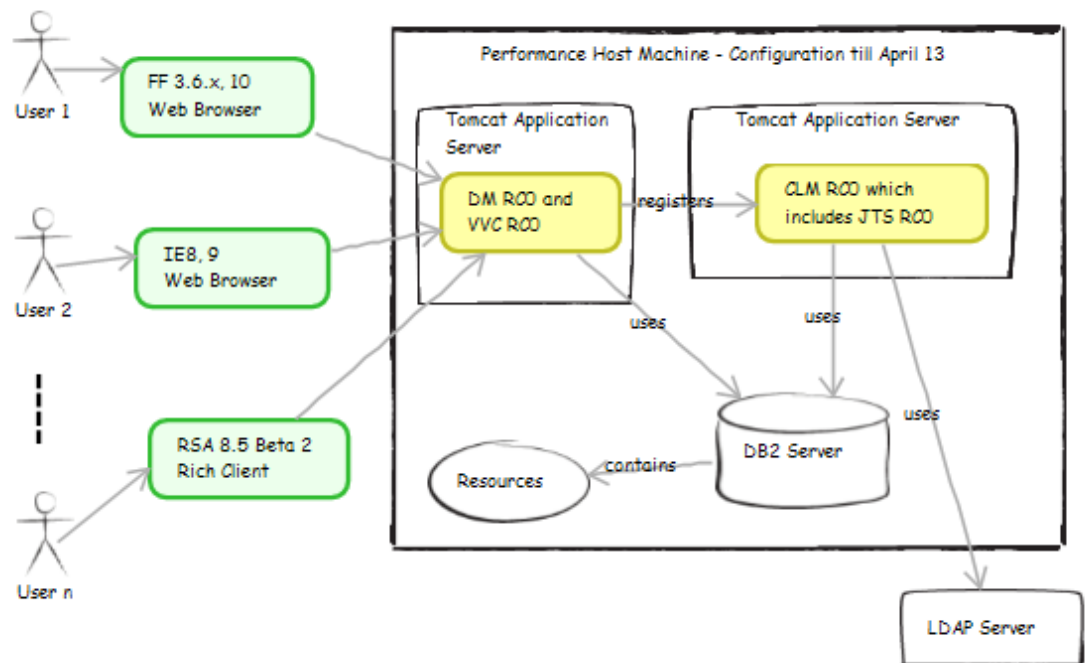


Sketching



Quickly capture and collaborate on ideas with design sketching

- Sketches are simple, independent diagrams
- Add to any design project
- Editable from the Web client
- All the features of Design Management: linking, change control, searching, commenting, and design reviews



Common Administration with CLM



- Less infrastructure to manage with a **shared Jazz Team Server**
- One place to define and administer users
- **Lifecycle projects** including design
- Design included with **Money That Matters** sample application

Lifecycle Project Members [?]

The members page provides an easy way to manage the members of a Lifecycle Project. From this page, you can add or remove roles assigned to a member in each artifact container.

Select Project:

50 Items Per Page

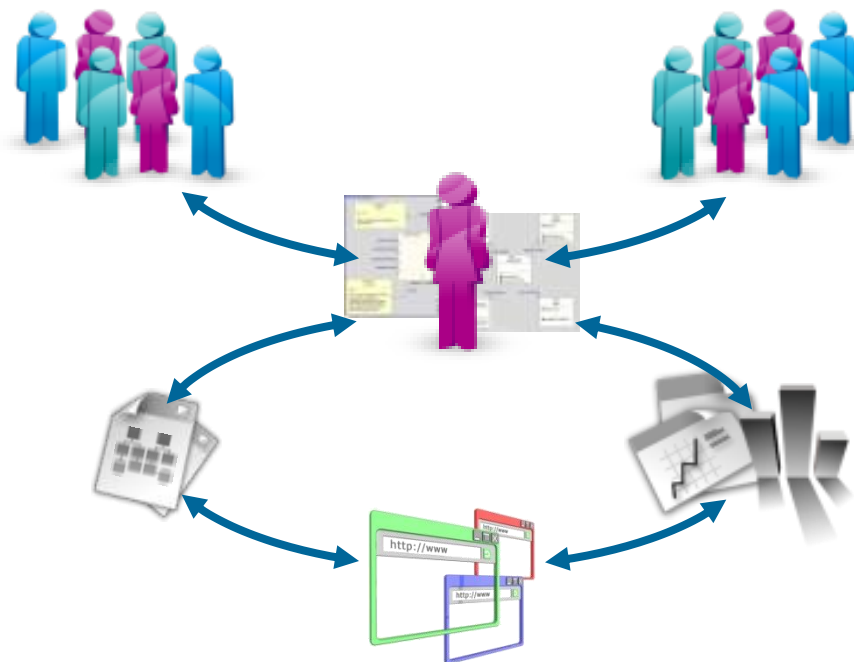
◀ Previous | 1 - 13 of 13 | Next ▶

| Name | User ID | CCM | AM | QM | RM | Status |
|--------|---------|-----|----|----|----|--------|
| Al | al | ✓ | ✓ | ✓ | ✓ | Ok |
| Bob | bob | ✓ | ✓ | ✓ | ✓ | Ok |
| Build | build | ✓ | | | | Ok |
| Curtis | curtis | | ✓ | | ✓ | Ok |
| Dave | dave | ✓ | ✓ | ✓ | ✓ | Ok |

Summary

- Design Management helps teams to:
 - Collaborate and iterate on their software and systems designs
 - Integrate their designs and design process with the rest of the lifecycle
 - Produce better quality designs with less time

- Rational Software Architect Design Manager contain lots of new and enhanced capabilities
 - Model configuration management
 - Lifecycle traceability
 - Common administration with CLM
 - Impact Analysis
 - Documenting designs
 - Design sketching
 - In-context design collaboration
 - Searching





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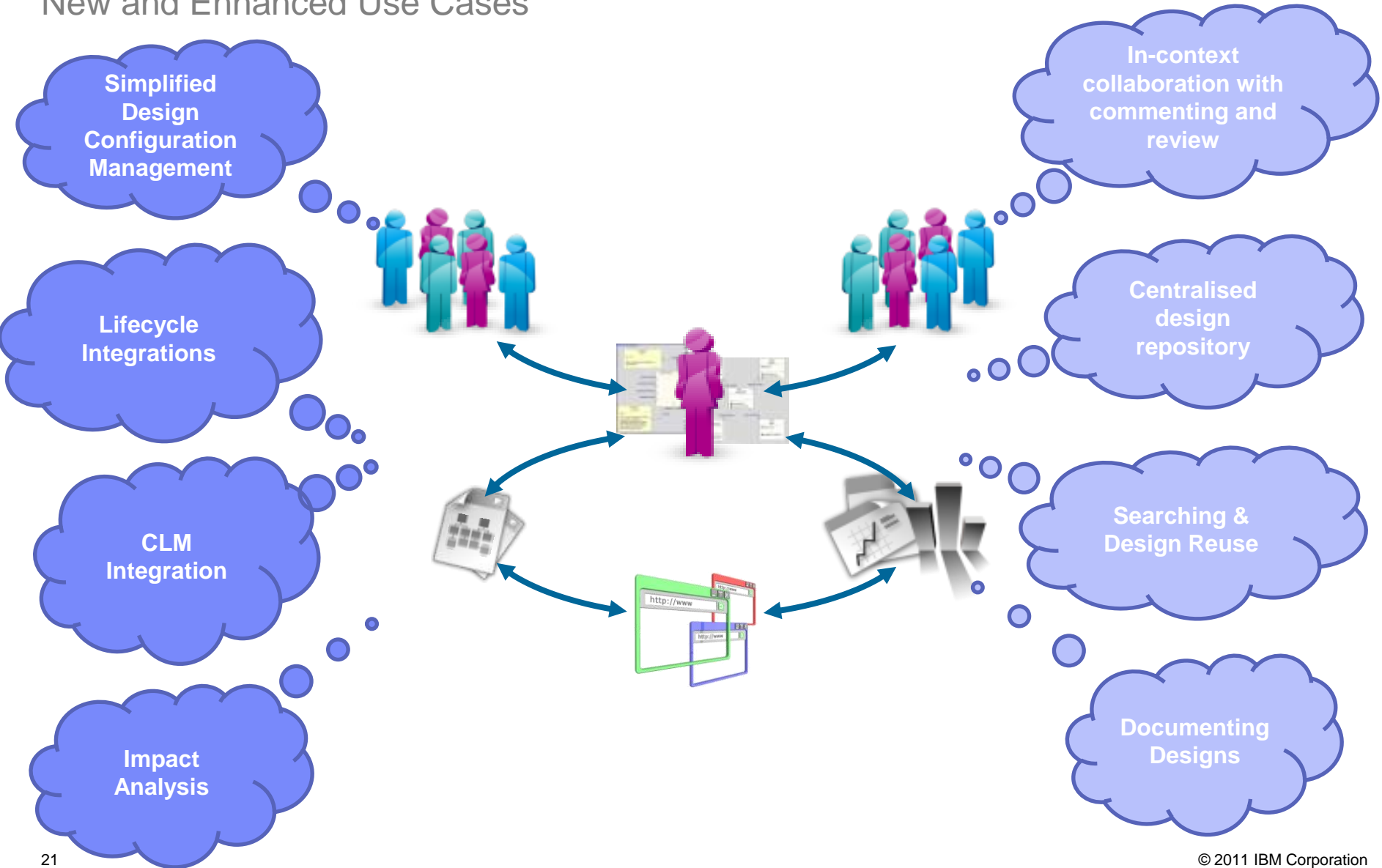
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RSA Design Management 4.0

New and Enhanced Use Cases

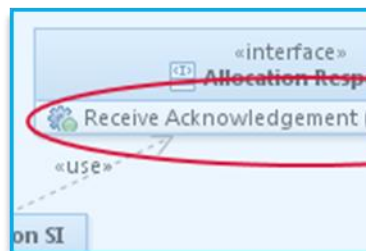
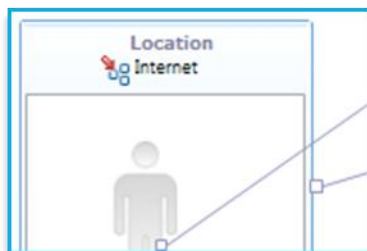


What is Design Management?

Focusing on the team aspects of systems & software design

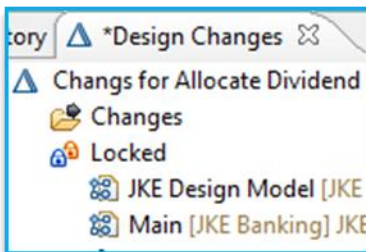
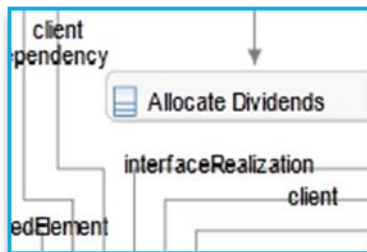
New!  **Download 4.0 Release**
September 7, 2012

Connecting design with ALM (CLM)



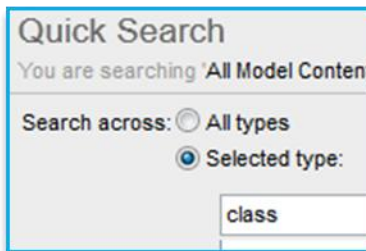
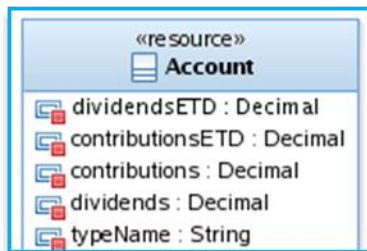
Collaborating with peers and stakeholders

Analyzing impacts of change



Managing design changes and configurations

Creating design documents



Finding existing designs