A decorative graphic in the top left corner consists of several overlapping circles of various colors (yellow, orange, red, purple, blue) that are divided into segments, resembling a stylized sun or a cluster of data points.

# The DevOps approach: Develop and test - multiplatform development with Integrated Solution for System z

Speaker Name and Title



### Session #2

This scenario-driven session uses a COBOL/CICS program that is invoked by a smartphone application.

A bug is identified on the code that requires updates to z/OS as well as in the smartphone interface.

We will demonstrate how the IBM DevOps solution helps the typical developer throughout the overall application lifecycle from requirements to delivery, improving project management, productivity, testing and deployment.

The demonstration will start from the requirements and analysis phase through the final deployment using a z/OS system running on a local laptop.

# Infrastructure for supporting software delivery

*IDE's, 3270, ISPF, Editors, Compilers, HLASM, Link-editors*

**Development**

**Analysis**

**Test, Promote, Deploy**

*Assessment, Scoping, Impact  
Application understanding*

*Test and Production Environment(s)*

**Asset Repository**

*Code, Copybooks, Build Scripts, Documentation, Work Items,  
Change Sets*

*Lifecycle and Governance Infrastructure*

# IBM Rational Integrated Solution For System z Development

*Increase productivity and reduce MIPS with a modern IDE for COBOL, PL/1 & HLASM and C/C++, Java*

**Rational Developer for System z (RDz)**

**Rational Asset Analyzer (RAA)**

*Better productivity and quality with quick analysis showing application structure and relationships*

**Rational Development and Test for System z (RDT)**

*Free up MIPS for production use, and eliminate delays by scaling out low cost z/OS test environments*

**Rational Collaborative Lifecycle Management**

*Collaboration and governance across diverse teams, platforms, and programming languages*

Requirements

Change and Configuration Management

Quality Management

**Rational Software Delivery Platform**

*powered by*

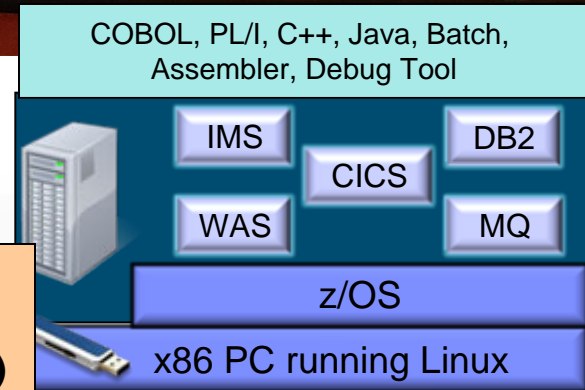
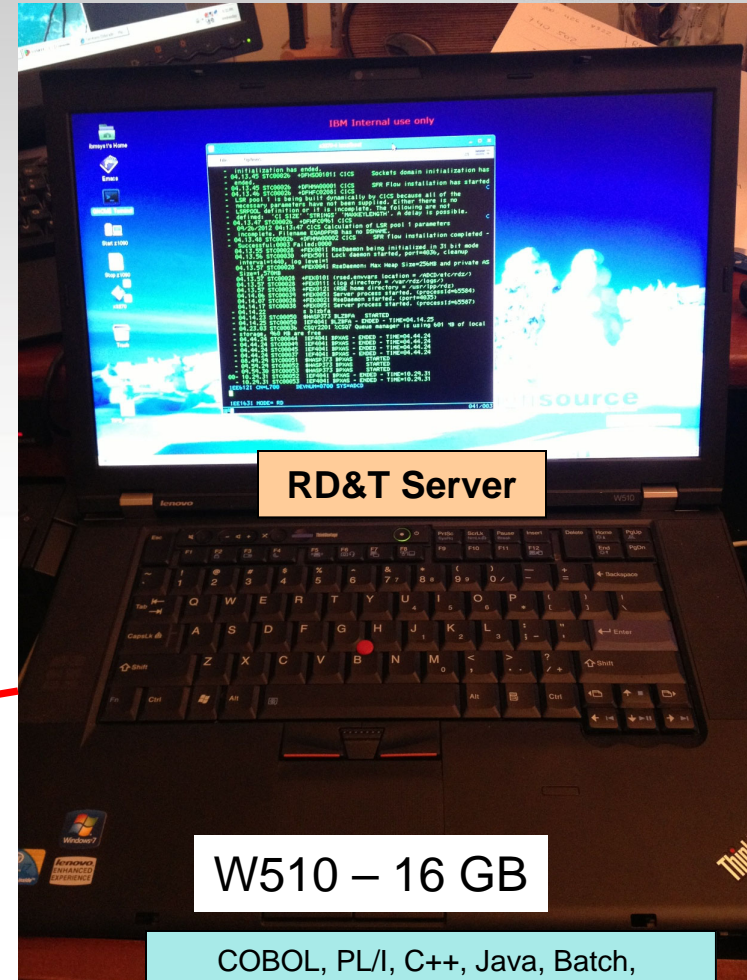
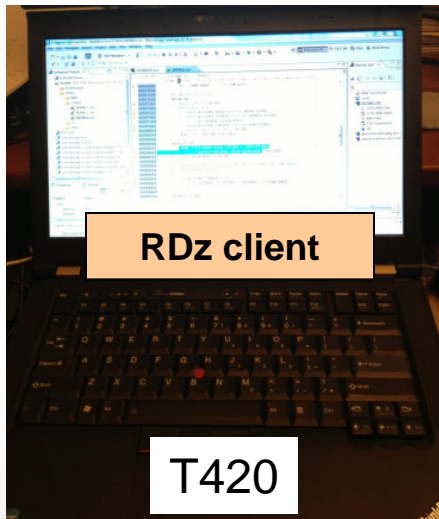




# Topology used in this Demo

- Project Manager: Ursula
- Architect/Analyst: Alex
- Mainframe Developer: Deb
- Web Developer: Dave
- Release Engineer: Rebecca

Wireless Router



CLM  
(running  
on Linux)

CLM = Collaborative Lifecycle Management



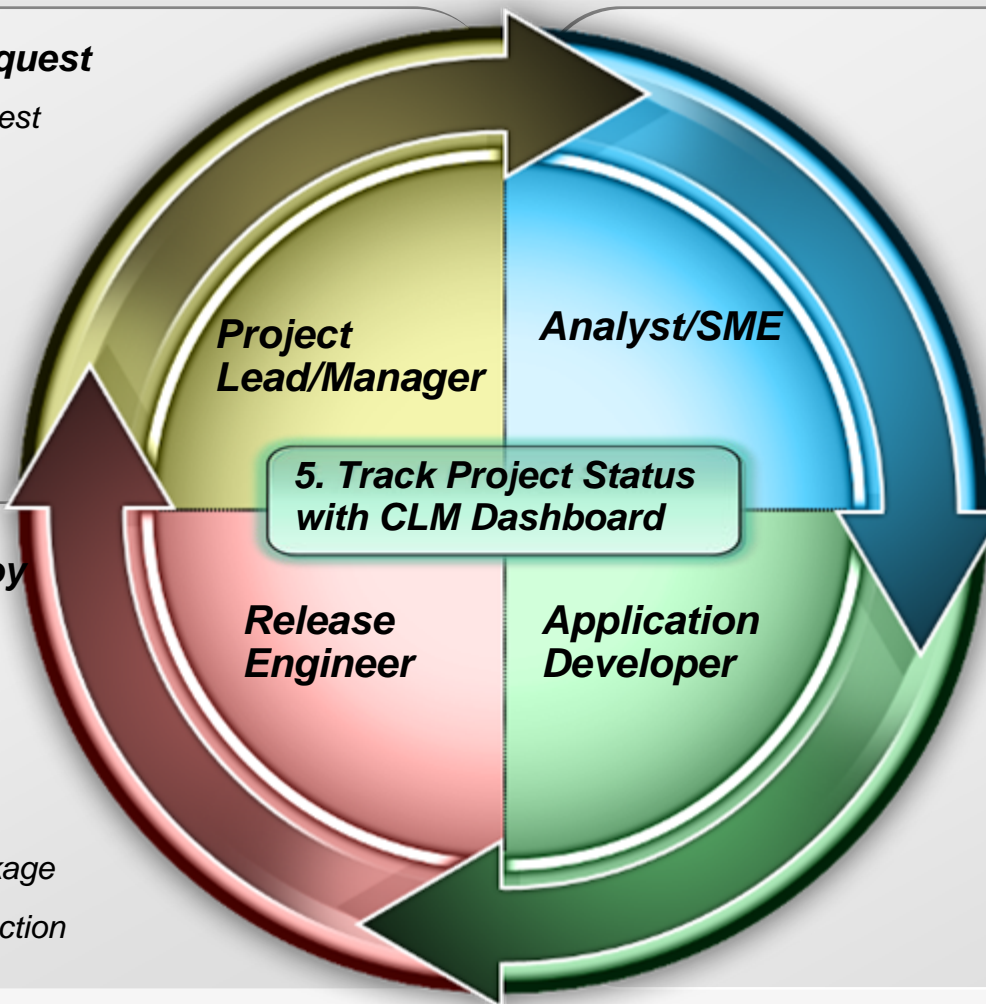
# Overview of the Scenario

## 1: Initiate Change Request

- Submit new change request
- Assign to Analyst

## 2: Analyze

- Analyze Application to be changed
- Size/Scope the effort for the change
- Assign to a developer



## 4: Promote and deploy enhancement

- Create 'official' build of application
- Promote through test environments
- Build formal release package
- Deploy package to production

## 3: Implement required changes, build and deliver

- Analyze source repository to identify modifications
- Implement and test modifications
- Perform personal build and deliver new features

5. Track Project Status with CLM Dashboard

# Part 1: Initiate Change Request – Ursula the Project Manager

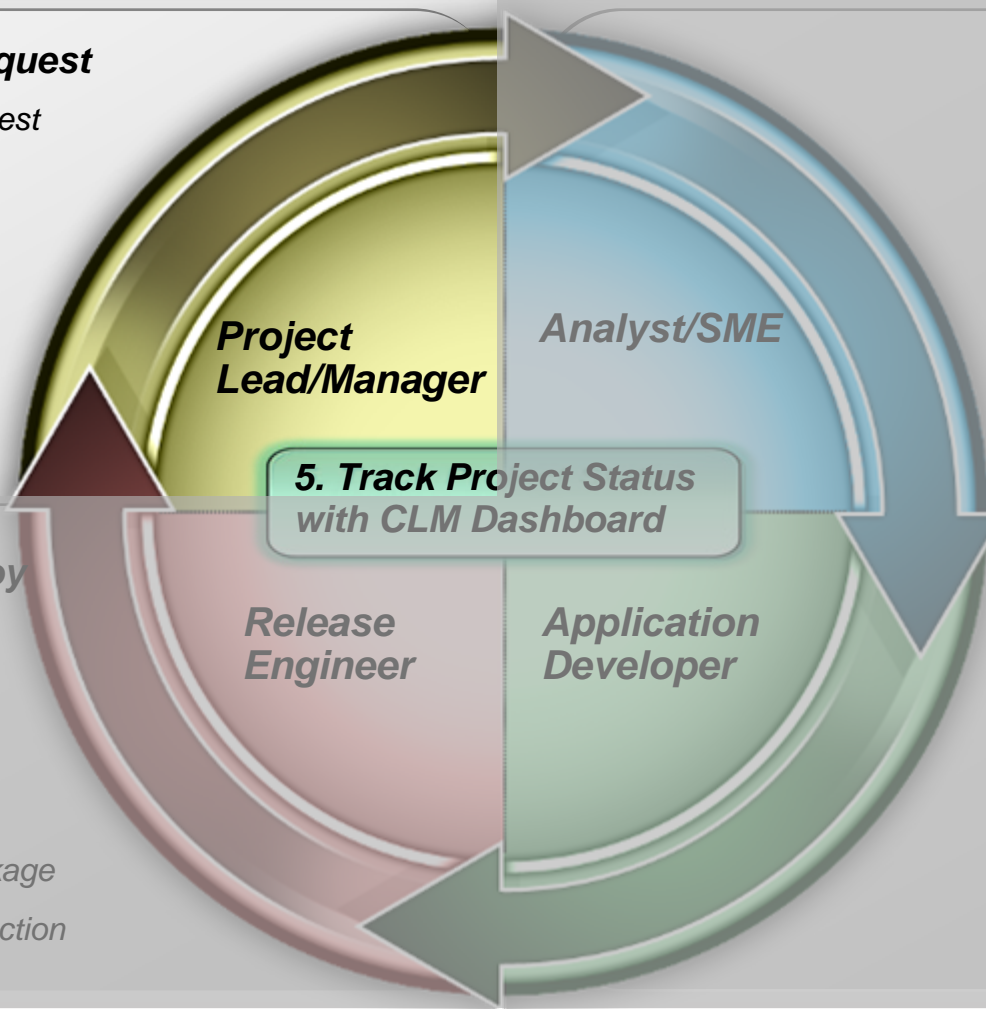
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empot09

## 2: Analyze

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- Size/Scope the effort for the change
- Create Bill of Materials



5. Track Project Status with CLM Dashboard

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# Scenario :

Application change is required

```

JKE MORTGAGE CALCULATOR  - 12/15/2012

Amount of Loan:          180000
Length of Loan in Years: 30
Interest Rate:           8.2

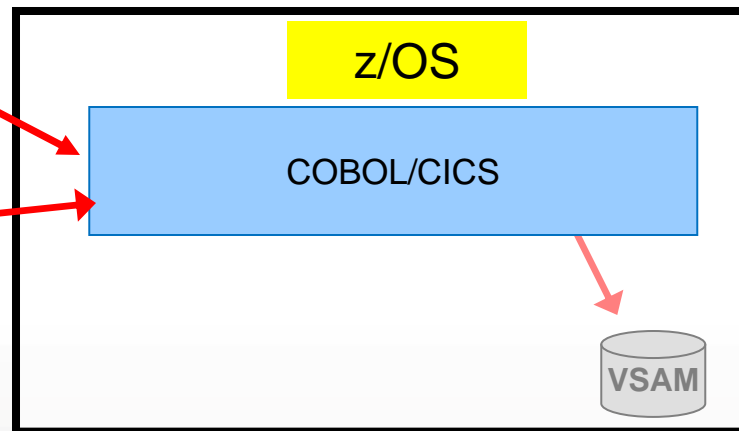
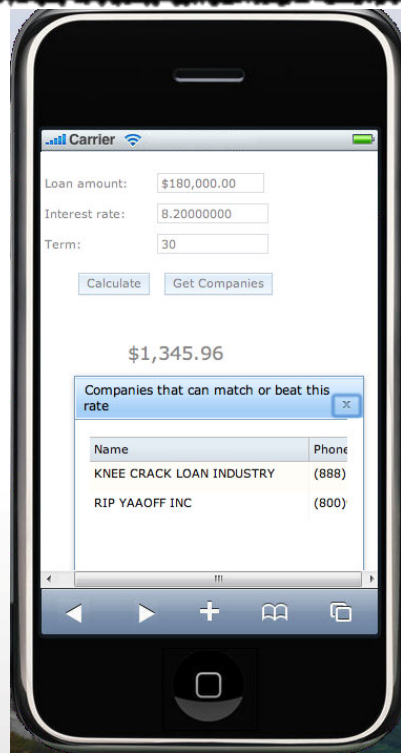
Press F3 to quit or Enter to calculate loan
Press PF9 to see companies that can match or beat this rate

Monthly Payment:        1,345.96
    
```

```

Better Mortgage Rates

Company      Phone Number  Interest Rate  Monthly Payment
KNEE CRACK LOAN INDUSTRY (888)123-4444  6.9            1,191.51
RIP YAAOFF INC (800)968-6933  7.2            1,227.92
    
```



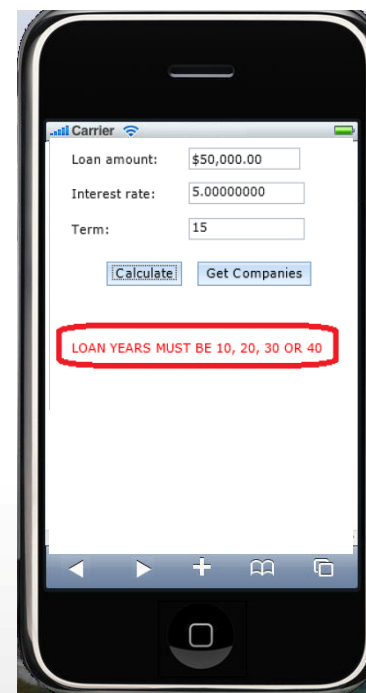
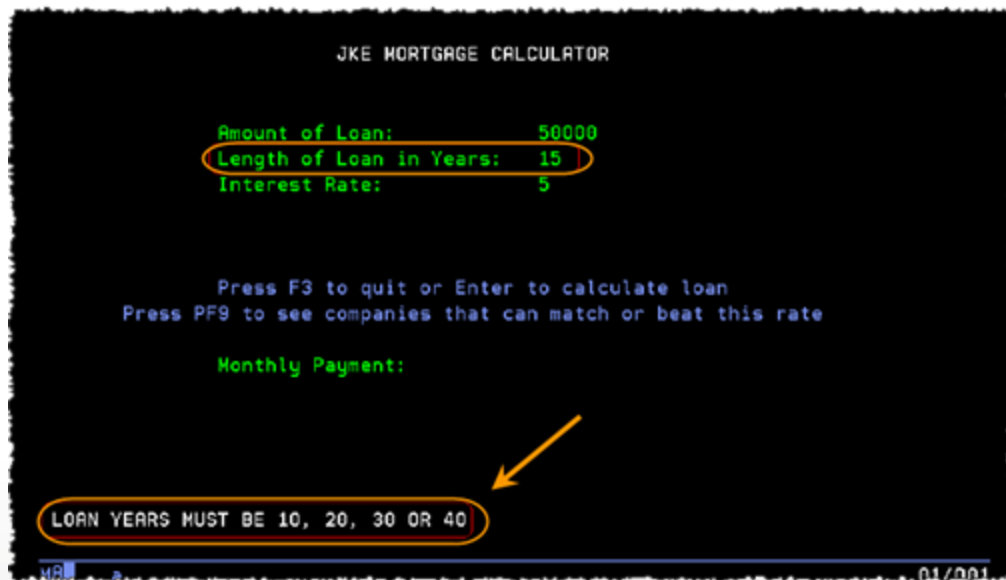
•Existing COBOL/CICS/BMS application

## Application Bug

The Only valid length of loan **must be 10, 20 30 or 40 years.**

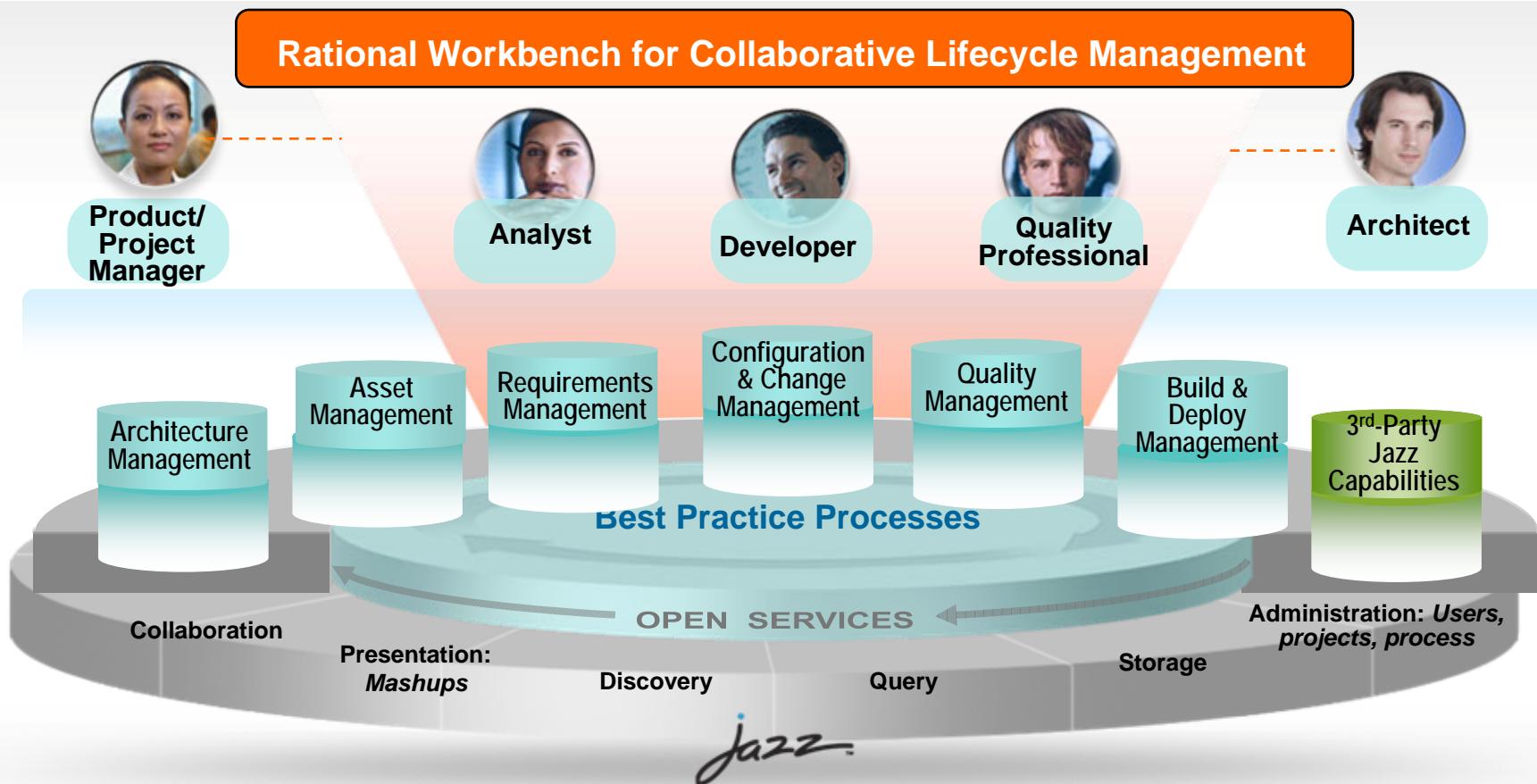
Currently the length could be *between 00 and 40 years..*

*A message should reflect this new enhancement*



# Rational Team Concert: Workbench for Collaborative Lifecycle Management (CLM)

A robust, extensible solution for analysts, developers and quality professionals





## Part 2: Analysis – Alex the Architect/Analyst

### 1: Initiate Change Request

- Submit new change request
- Assign to Analyst

### 2: Analyze

- Analyze Application to be changed
- Size/Scope the effort for the change
- Assign to a Developer

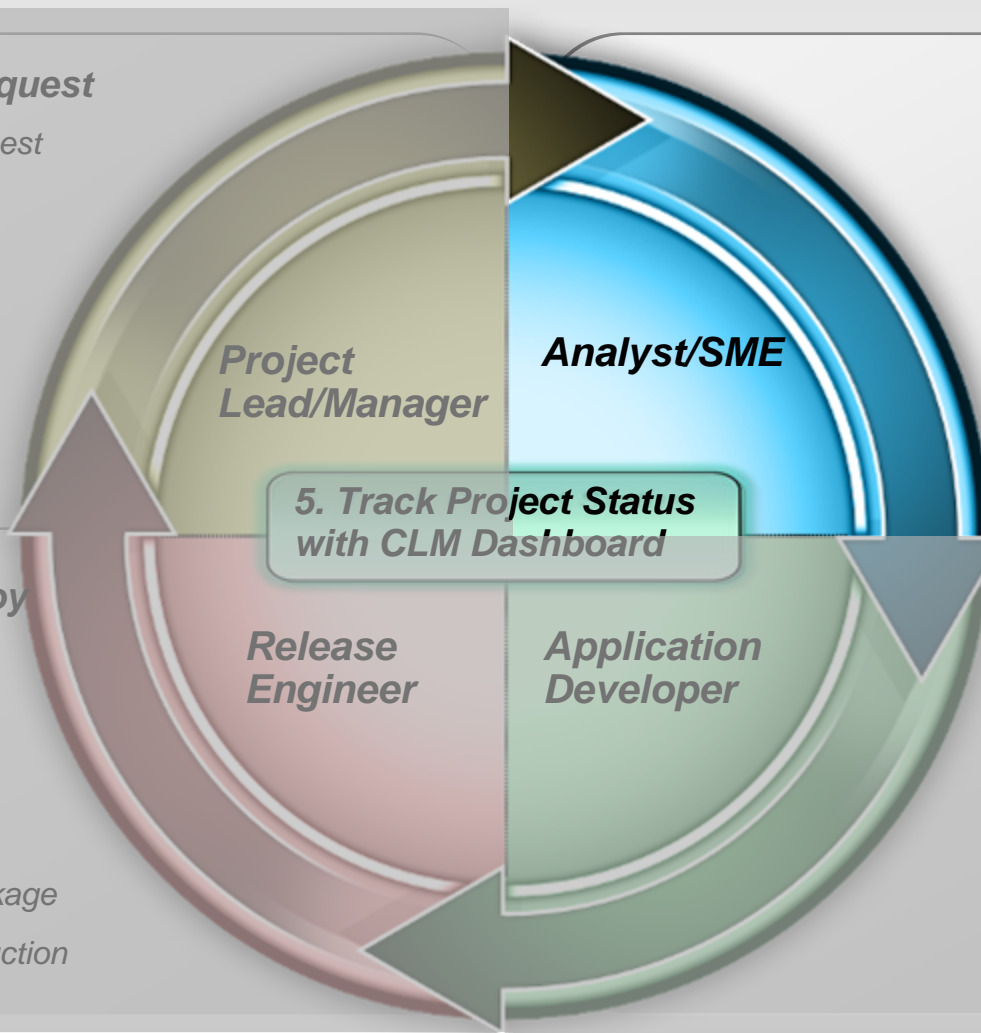
empot02

### 4: Promote and deploy enhancement

- Create 'official' build of application
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### 3: Implement required changes, build and deliver

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- Implement and test modifications
- Perform personal build and deliver new features



5. Track Project Status  
with CLM Dashboard

Project  
Lead/Manager

Analyst/SME

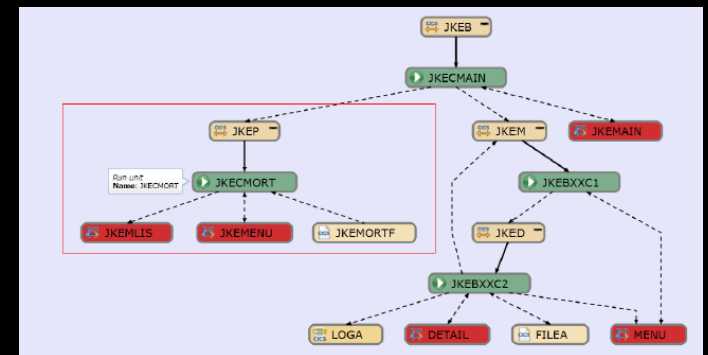
Release  
Engineer

Application  
Developer

## Objective: Change existing Multiplatform application

**Alex – Subject Matter Expert (SME) for software project,**  
Performs application analysis, prioritizes requirements, etc.

1. Alex has received the change requirements (work item) and uses **CLM (RTC)** to start the collaboration with others on the team.
2. Alex uses **Rational Asset Analyzer (RAA)** to understand application framework. Also analyzes the Scope and Risk of Project Change Request.
3. Using **Rational Team Concert (RTC)** updates the work item for development team to proceed with the transformations.



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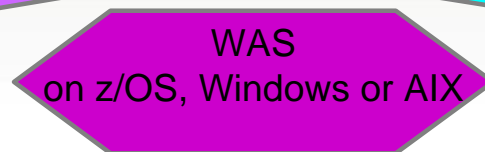
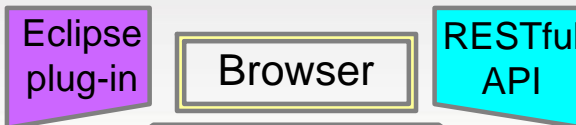
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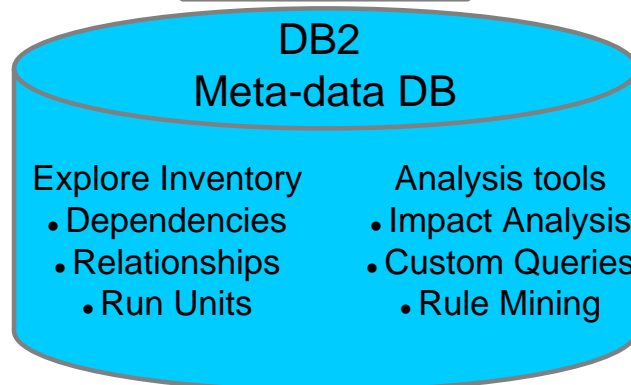
# Rational Asset Analyzer: Product Architecture

- Integrated Development Environment
  - Integrating analysis with coding tools
    - Integrated views
    - Web view

Business analysts, system analysts, developers, testers, project managers



- Companion tool integration
  - Dashboards
  - Portfolio analysis
- Business tools extracts
  - Documents
  - Spreadsheets



On z/OS  
or  
Windows

COBOL, PL/I applications for CICS, IMS and DB2 plus z/OS Job Control Language (JCL) and High Level Assembler

Java technology-based applications, HTML, JavaServer Pages (JSP), Enterprise JavaBeans (EJB), enterprise archive (EAR), Web archive (WAR) and Java archive (JAR) files, and C/C++

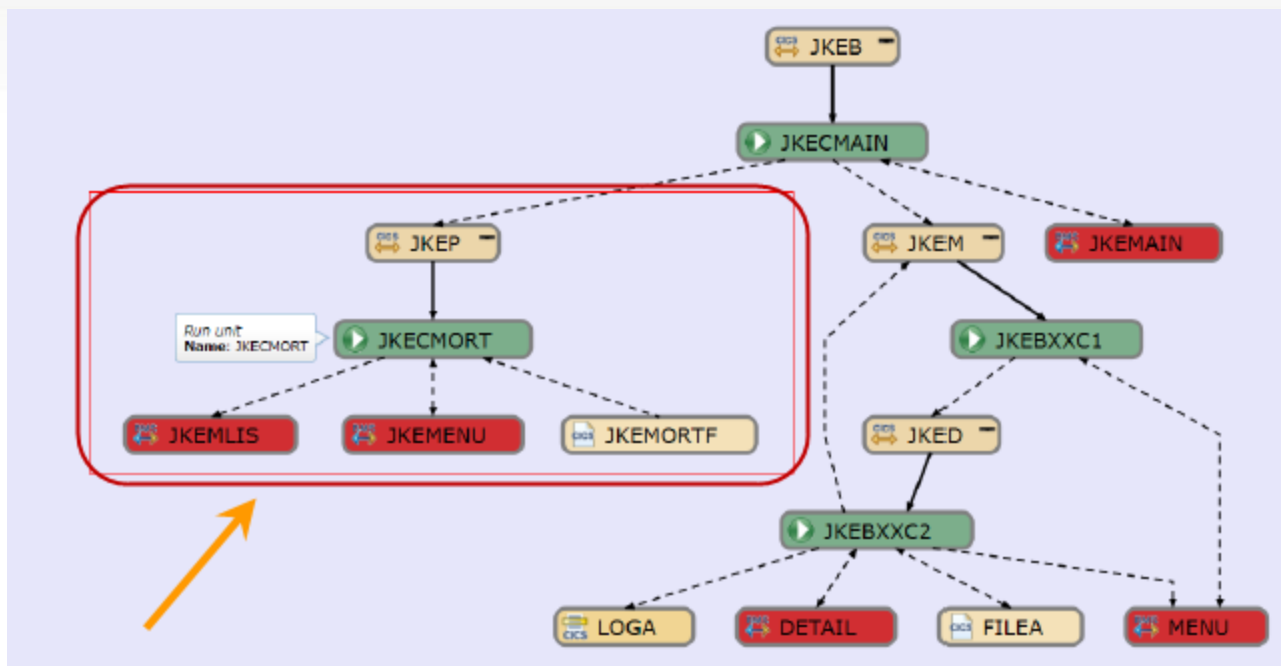


Scannable on z/OS or Windows

Scannable on Windows or AIX

# Application architecture

BMS maps, CICS transactions, COBOL programs, Datasets



\* Diagram created using Rational asset Analyzer (RAA)

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# Part 3: Implementation – Deb and Dave the developers

z/OS = empot05

web = empot04

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5. Track Project Status with CLM Dashboard

Project Lead/Manager

Analyst/SME

Release Engineer

Application Developer

## Objective: Change existing Multiplatform application

### Deb – Mainframe Developer (empot05)

Performs the COBOL updates

1. Uses **Rational Team Concert (RTC)** integrated with **Rational Developer for System z (RDz)** to verify the requirement (work item) and load the code to the RDz Workspace.
2. Uses **Rational Asset Analyzer** integration with RDz (**RAAi**) to better understand the program to be modified
3. Uses **RDz** to make the changes.
4. Uses **RTC** to do a personal build to z/OS
5. Developer uses CICS Explorer component of RDz to debug the COBOL/CICS program using the **z/OS Debug Tool** (running on z/OS – **RD&T**)
6. Deb deliver the changes and assign work item to Dave



# RDz provides a complete set of System z Development and Test capabilities

Integration with **Rational Team Concert** for Lifecycle and Source Management

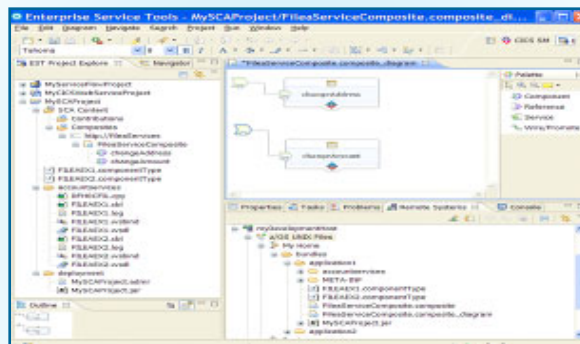
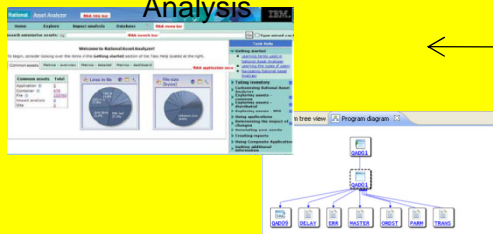


Access to typical System z sub-system functionality in z/OS, CICS, IMS, DB2, WAS

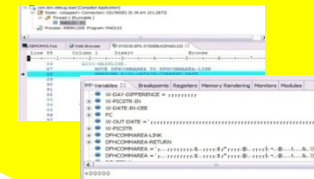


Rational Developer for System z

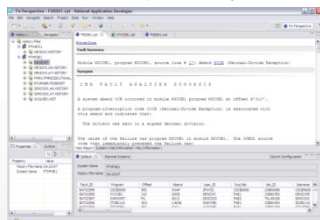
Integration with **Asset Analyzer** for Application Understanding and Impact Analysis



Integration with **Debug Tool** for Development and Test

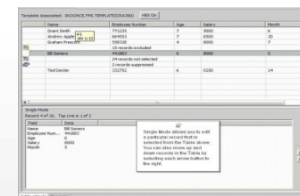


Integration with **Fault Analyzer** for Dump Analysis



A modern IDE for productive development of cross-platform applications written in COBOL, PL/I, ASM, Java, Worklight or C/C++ in System z CICS, IMS, DB2, Batch applications

Integration with **File Manager** for file and test data handling



Integration with **RD&T** for flexible access to System z environment



Shown on this demo

## Objective: Change existing Multiplatform application

### Deb – Mainframe Developer

Performs the COBOL updates

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## Objective: Change existing Multiplatform application

**Dave – Web Developer (empot04)**

Performs the Smartphone updates (Worklight)

1. Uses **Rational Team Concert (RTC)** integrated with **Rational Developer for System z (RDz)** to verify the requirement (work item) and load the code to the RDz Workspace.
2. Uses **RDz (Worklight)** to make the Smartphone changes.
3. Test the Smartphone interface using iPhone simulator

## Part 4: Promotion – Rebecca the Release Engineer

### 1: Initiate Change Request

- Submit new change request
- Assign to Analyst

### 2: Analyze

- Analyze Application to be changed
- Size/Scope the effort for the change
- Create Bill of Materials

Project Lead/Manager

Analyst/SME

5. Track Project Status with CLM Dashboard

empot07

Release Engineer

Application Developer

### 4: Promote and deploy enhancement

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### 3: Implement required changes, build and deliver

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## Objective: Change existing Multiplatform application

### Rebecca – Release Engineer

Performs the promotion, package and deploy

1. Uses Rational Team Concert (RTC) integrated with Rational Developer for System z (RDz) to review and approve the changes.
2. Uses RTC to perform a Team Build.
3. Uses RTC to promote from development to test stage.
4. Uses RTC to package and deploy to z/OS.

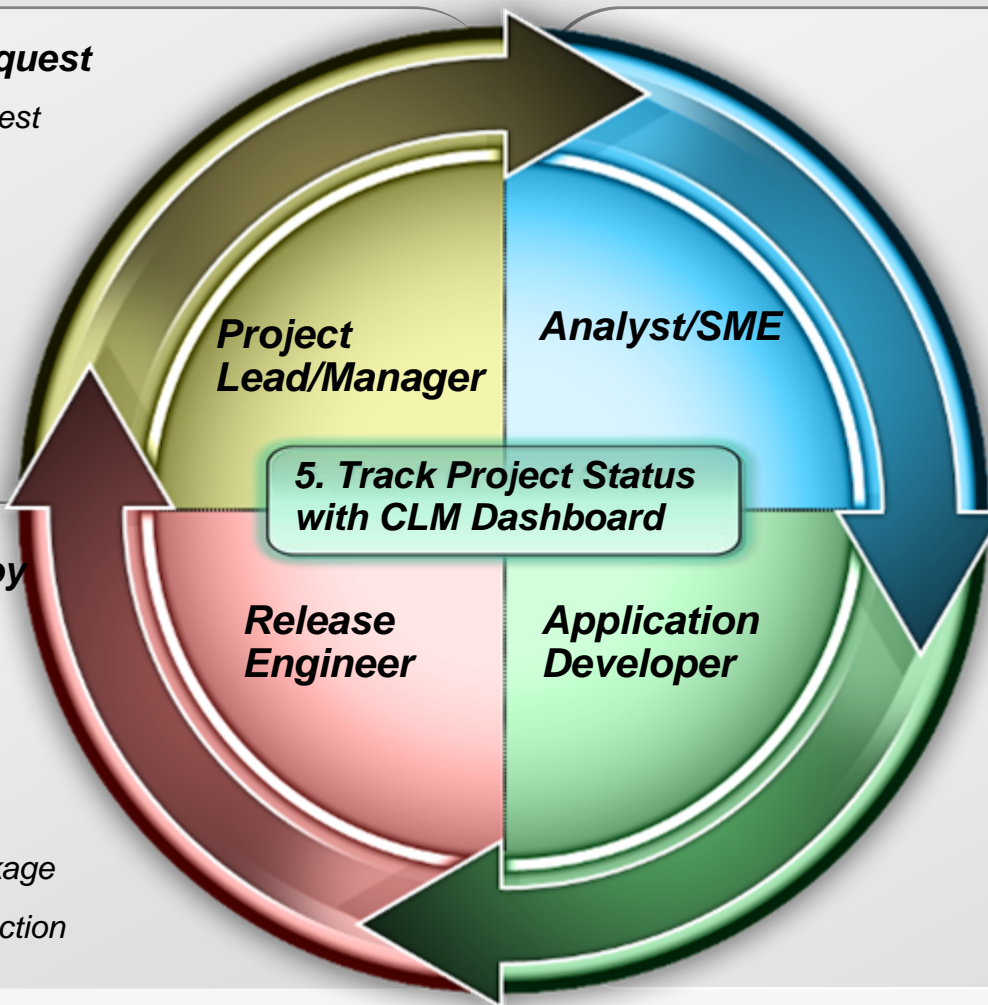
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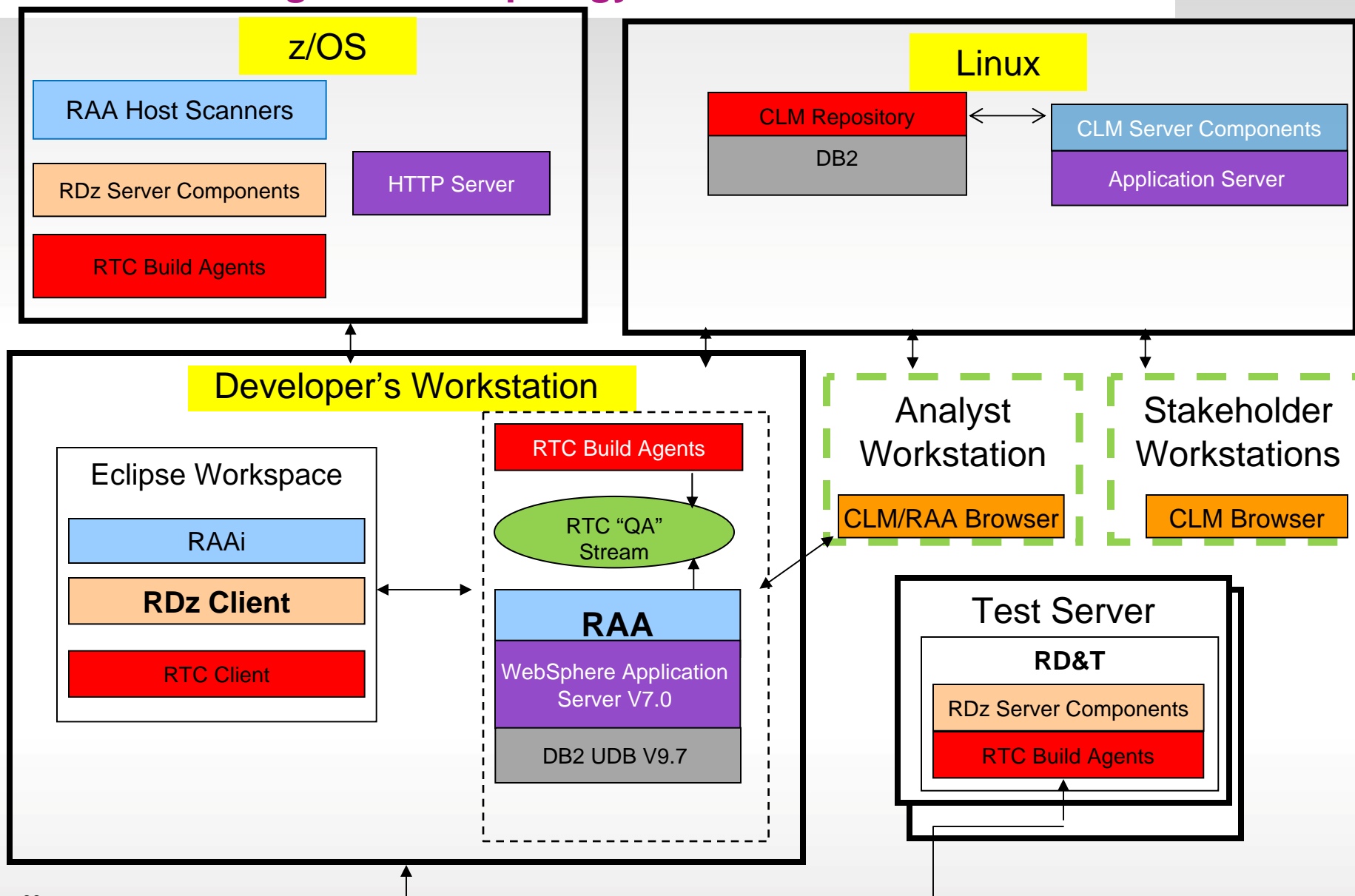
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- **BACKUP**

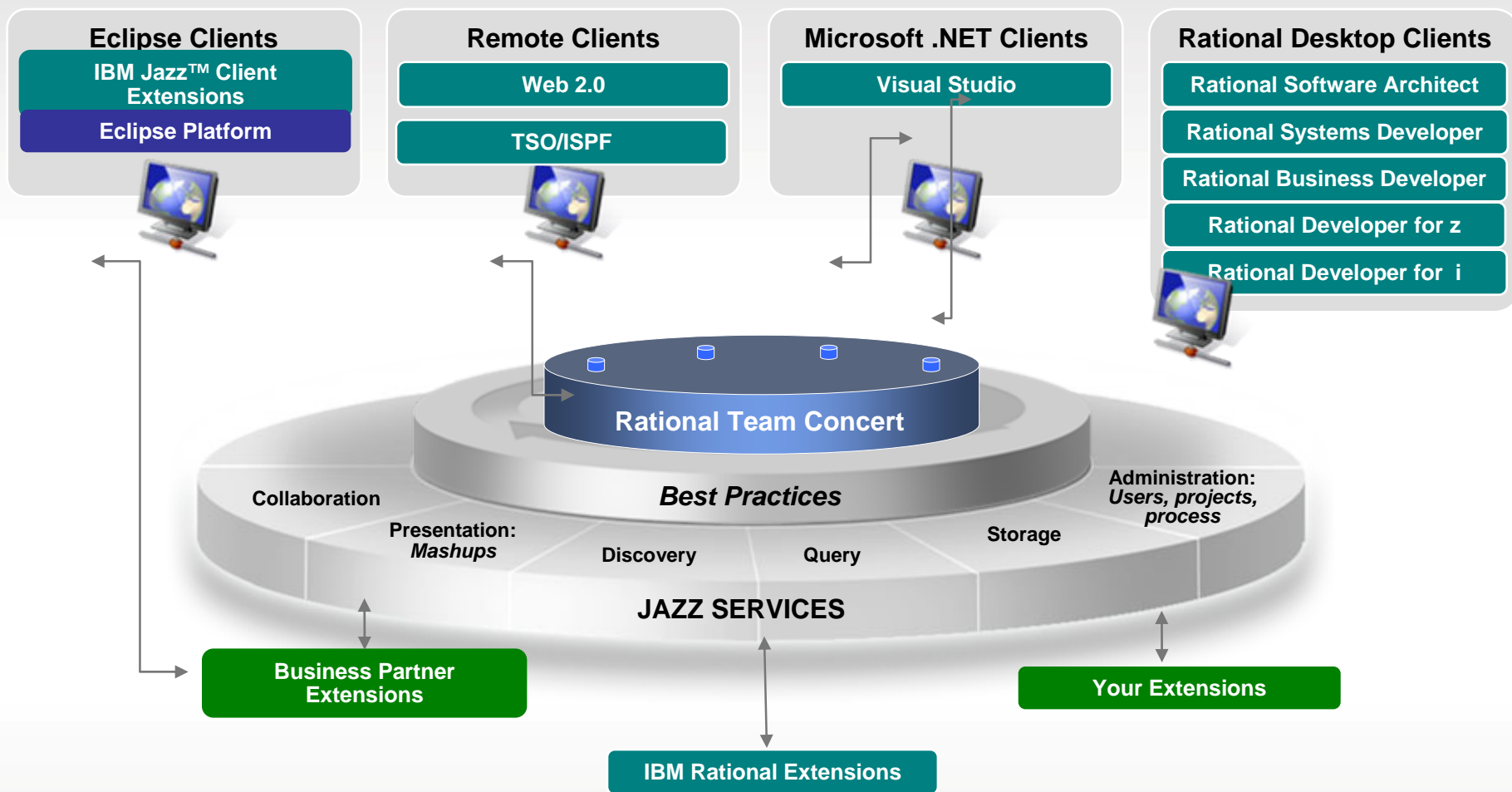
<http://www.youtube.com/watch?v=8fOx-MiSZFw>

# High-Level Topology of the solution



# Rational Team Concert: Workbench for Collaborative Lifecycle Management

An open, extensible architecture  
 Supporting a broad range of desktop clients, IDEs and languages







# Team Members/Roles

- Project Manager: Ursula (empot09)
- Architect/Analyst: Alex (empot02)
- Mainframe Developer: Deb (empot05)
- Web Developer: Dave (empot04)
- Release Engineer: Rebecca (empot07)

Ursula - empot09	Ursula	Author	Rational Requirements Composer – Analyst	Manager of the overall project
		Team Member	Rational Team Concert – Contributor	
		Test Team Contributor	Rational Quality Manager – Connector	
		Non-Administrator	Rational Asset Analyzer	
Alex - empot02	Alex	Author	Rational Requirements Composer – Analyst	Subject Matter Expert (SME) for software project, performs application analysis, prioritizes requirements, etc.
		Team Member	Rational Team Concert – Contributor	
		Test Team Contributor	Rational Quality Manager – Connector	
		Administrator	Rational Asset Analyzer	
Dave - empot04	Dave	Commenter	Rational Requirements Composer - Contributor	Web Developer
		Team Member	Rational Team Concert – Developer for IBM Enterprise Platforms	
		Test Team	Rational Quality Manager –	
Deb - empot05	Deb	Commenter	Rational Requirements Composer - Contributor	Mainframe Developer
		Team Member	Rational Team Concert – Developer for IBM Enterprise Platforms	
		Test Team Contributor	Rational Quality Manager – Connector	
		Client/Non-Administrator	Rational Developer for zEnterprise Rational Asset Analyzer	
Rebecca - empot07	Rebecca	Team Member	Rational Team Concert – Developer for IBM Enterprise Platforms	Initiates all promotion requests
		Test Team Contributor	Rational Quality Manager – Connector	
Rebecca - empot07	Rebecca	Author	Rational Requirements	Provides support for the software

A decorative graphic in the top left corner consists of several overlapping, semi-circular shapes. Each shape is divided into multiple segments of different colors, including shades of orange, yellow, pink, purple, and blue, creating a vibrant, abstract pattern.

## Summary and Next Steps

# Next Steps – to help determine your best entry point

- Podcasts
  - ISDz - Construct high quality applications faster with the IBM Integrated Solution for System z Development <http://www-01.ibm.com/software/rational/podcasts/2013/#281>
  - Clz – CICS Virtualization Testing - coming soon
  - RDz - What's hot for mainframe, IBM i, and distributed applications development? <http://www-01.ibm.com/software/rational/podcasts/2013/#286>
  - IDEs for DevOps - Application Development in a DevOps Enterprise <http://www-01.ibm.com/software/rational/podcasts/2013/#288>
- Papers
  - DevOps on z whitepaper - [https://www.ibm.com/services/forms/signup.do?source=swg-NA\\_LMI&S\\_PKG=ov20523](https://www.ibm.com/services/forms/signup.do?source=swg-NA_LMI&S_PKG=ov20523)
  - ISDz Solution Brief [http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=PM&subtype=SP&appname=SWGE\\_RA\\_RA\\_USEN&htmlfid=RAS14078USEN&attachment=RAS14078USEN.PDF](http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=PM&subtype=SP&appname=SWGE_RA_RA_USEN&htmlfid=RAS14078USEN&attachment=RAS14078USEN.PDF)
  - Clz Solution Brief <https://www14.software.ibm.com/webapp/iwm/web/signup.do?source=swg-103GS07W>
- Screen Cast – Enterprise COBOL V5R1 - <http://redmonk.com/jgovernor/2013/09/12/a-moderated-screencast-enterprise-cobol-for-zos-5-1>
- Trial – COBOL V5R1 - <http://www-03.ibm.com/software/products/en/enterprise-cobol-developer-trial-for-zos>



# Innovate 2014

Save the date!

## Innovate2014

The IBM Technical Summit

June 1-5 Orlando, Florida



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<http://www-01.ibm.com/software/rational/innovate/>



# Questions



# Thank You

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