



# IBM Rational Day

Jeudi 25 octobre 2012 - 8h30 à 17h00,  
Pullman Bercy

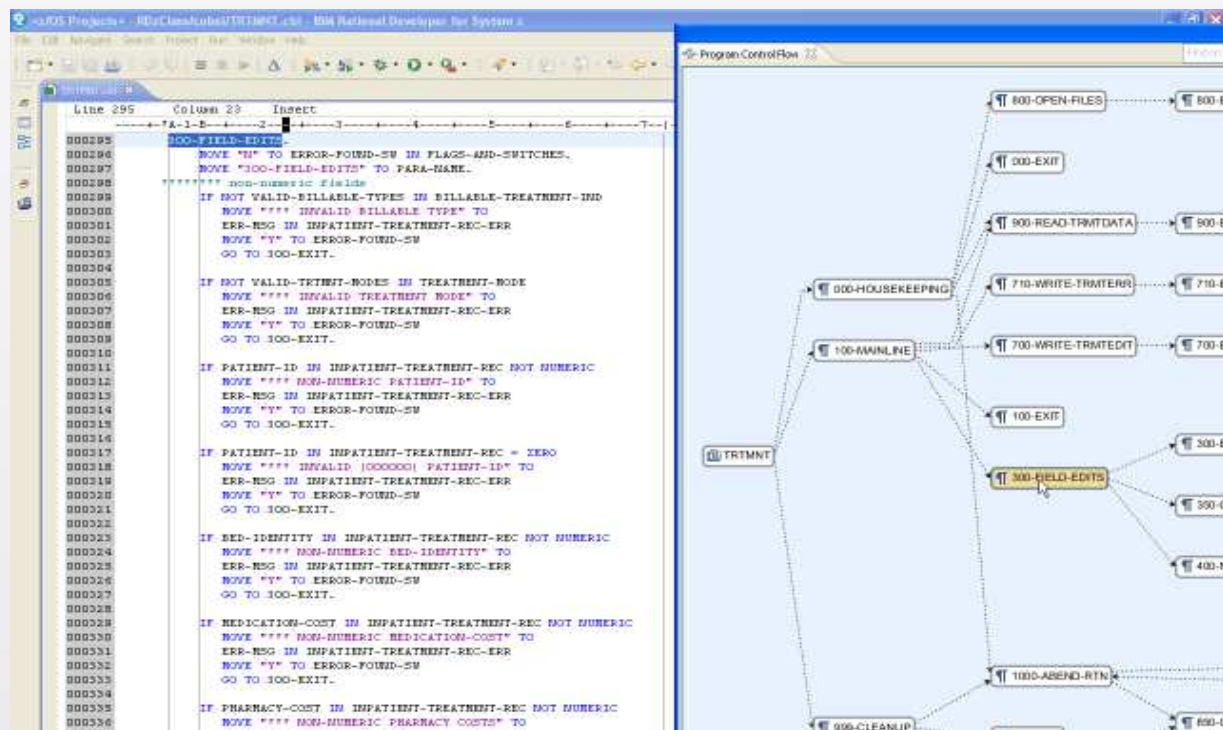
Témoignages. Débats.  
Démonstrations. Rencontres...  
**Venez échanger et faire le point  
sur les nouveautés Rational**



# IBM Rational Day

Jeudi 25 octobre 2012 - 8h30 à 17h00,  
Pullman Bercy

## EM2 : Les nouveautés de l'environnement de développement dans le monde System z



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Rational for z specialist

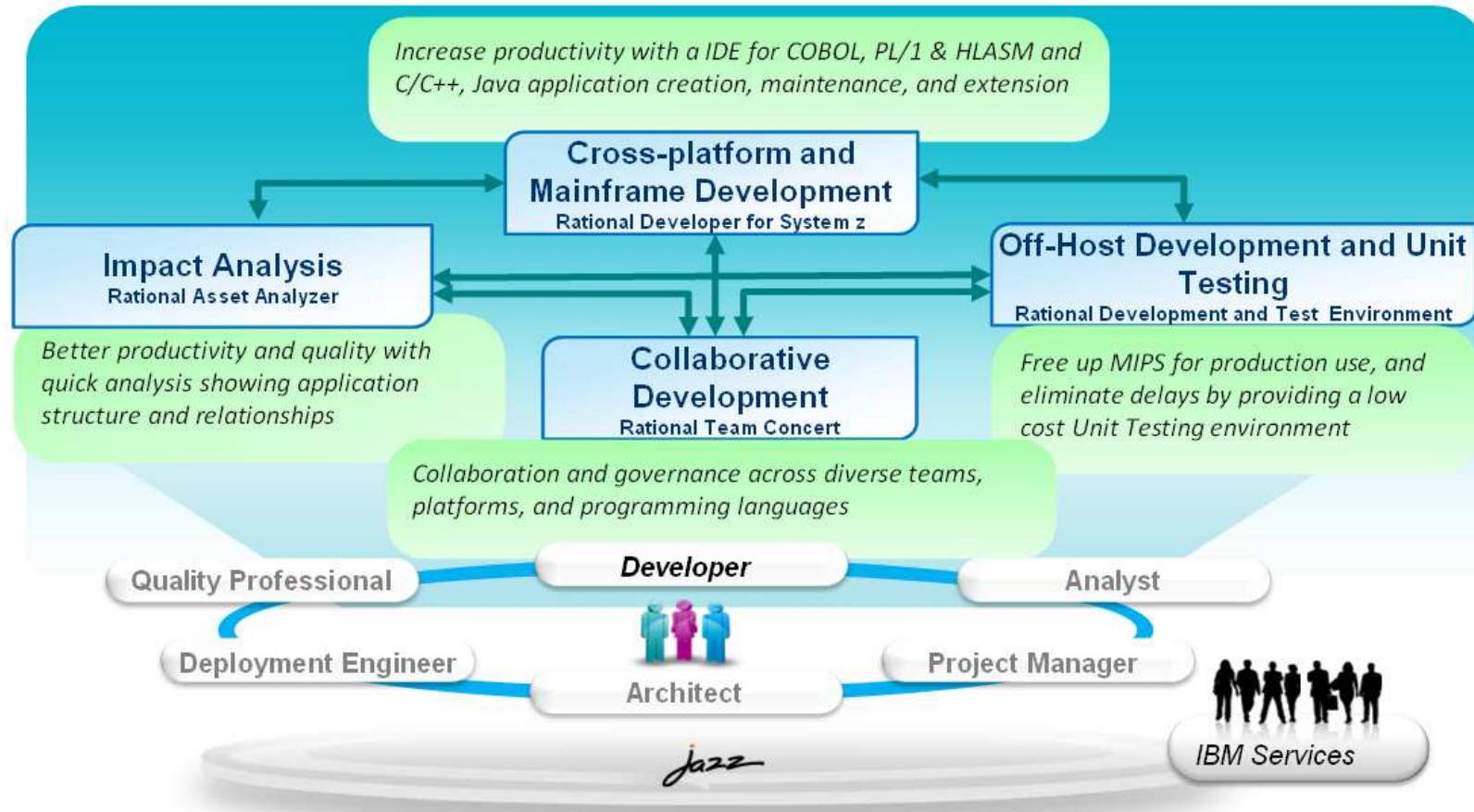
# Disclaimer

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# The IBM Integrated Solution for System z Development



## IBM Integrated solution for System z development

### New Capabilities :

- Embedded analysis tools boost productivity, helping developers understand existing applications structure and flow
- Improve System z code quality with automated unit testing framework (zUnit), automated code review based on standardized rules, and code coverage analysis
- Greater control and visibility of building code including dependencies

# The IBM Integrated Development Solution for System z

## Incremental adoption patterns – Development focus\*



Entry Point	Add Capability	Add Capability	Add Capability
<ul style="list-style-type: none"> <li>Increase developer productivity to reduce maintenance backlog</li> <li>Modernize and extend System z applications</li> </ul>	<ul style="list-style-type: none"> <li>More rapid, flexible developer testing</li> <li>Reduce development MIPS</li> </ul>	<ul style="list-style-type: none"> <li>Reduce delivery time by understanding the impact of change, upfront</li> <li>Shortened learning curve for new team members</li> </ul>	<ul style="list-style-type: none"> <li>Unified status, change management, process, and SCM across tools, teams, and platforms</li> <li>Reduce risks and meet audit and compliance mandates with automated process enforcement</li> <li>Reduce the cost of System z SCM</li> </ul>
RDz	RD&T	RAA	RTC
Modern IDE for applications that include System z components	Add z/OS development and unit test environment on an z86 Linux Server	Add rapid application understanding	Add collaboration and governance across diverse teams, platforms, and programming languages

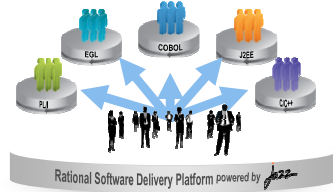
\*Follow on elements of the solution can be adopted in any order based on customer needs



# Complete set of System z Development and Test capabilities from an integrated development environment



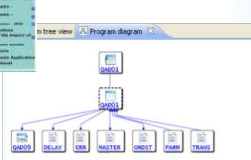
Integration with Team Concert for Lifecycle and Source Management



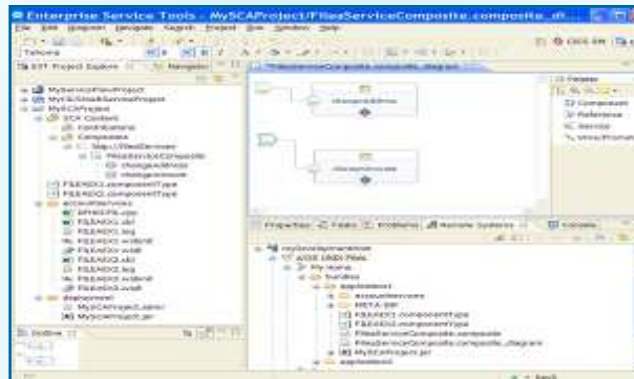
Access to typical System z sub-system functionality in z/OS, CICS, IMS, DB2, WAS



Integration with Asset Analyzer for Application Understanding and Impact Analysis

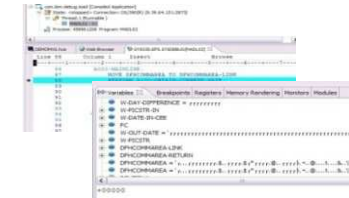


## Rational Developer for System z

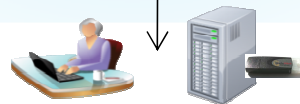
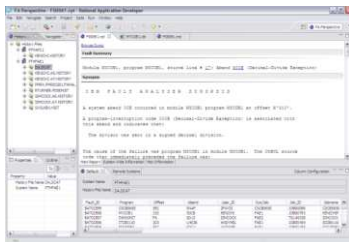


A modern IDE for productive development of cross-platform applications written in COBOL, PL/I, HLASM, Java, EGL or C/C++ in System z CICS, IMS, DB2, Batch applications

Integration with Debug Tool for Development and Test

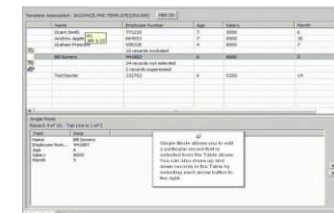


Integration with Fault Analyzer for Dump Analysis

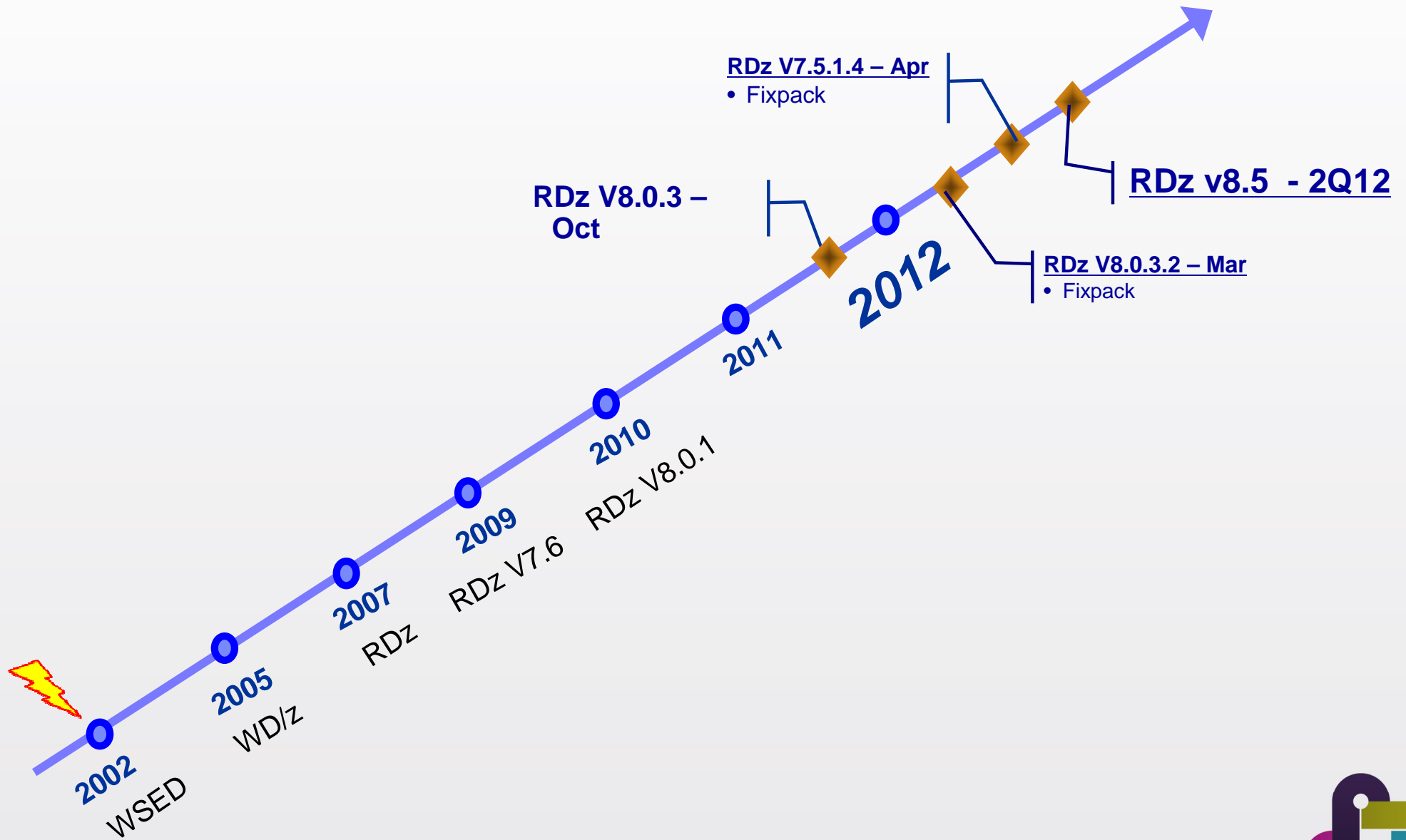


Integration with RD&T for flexible access to System z environment

Integration with File Manager for file and test data handling



# Rational Developer for System z through v8.5



# Rational Developer for System z Roadmap Themes



- Productivity

- *Editor Enhancements*
- *Search Enhancements*

- Integration

- Advancing technologies





# New Features for Editors



- LPEX Editor

- Show In
- Accessing called programs
- Marked occurrences
- ISPF View option for copybooks
- Expose "dead code"
- JCL Content Assist
- TODO comment tasks

- COBOL Editor

- Show In
- Accessing called programs
- Marked occurrences
- ISPF View option for copybooks
- Expose "dead code"
- JCL Content Assist
- Mark occurrences for EXEC statements
- Save actions
- Visual Annotations
- Show matching logic parenthesis
- Sequence number support
- Find in Hex

- PL/I Editor

- Show In
- Accessing called programs
- Marked occurrences
- ISPF View option for copybooks
- Expose "dead code"
- JCL Content Assist
- Mark occurrences for EXEC statements
- Save actions
- Visual Annotations
- Show matching logic parenthesis
- Sequence number support
- Call Hierarchy
- Improved Outline view
- Go to Next/Previous element
- Write occurrences colorization
- PL/I name refactoring
- PL/I Indentation Reformat
- Find in Hex



# Rational Developer for System z Roadmap Themes



## • Editor Enhancements

- *LPEX (all) Editors*
- *COBOL Editor*
- *PL/I Editor*
- *Assembler (LPEX) Editor*
- *QSAM File Editor*



# Rational Developer for System z Roadmap Themes



- Productivity

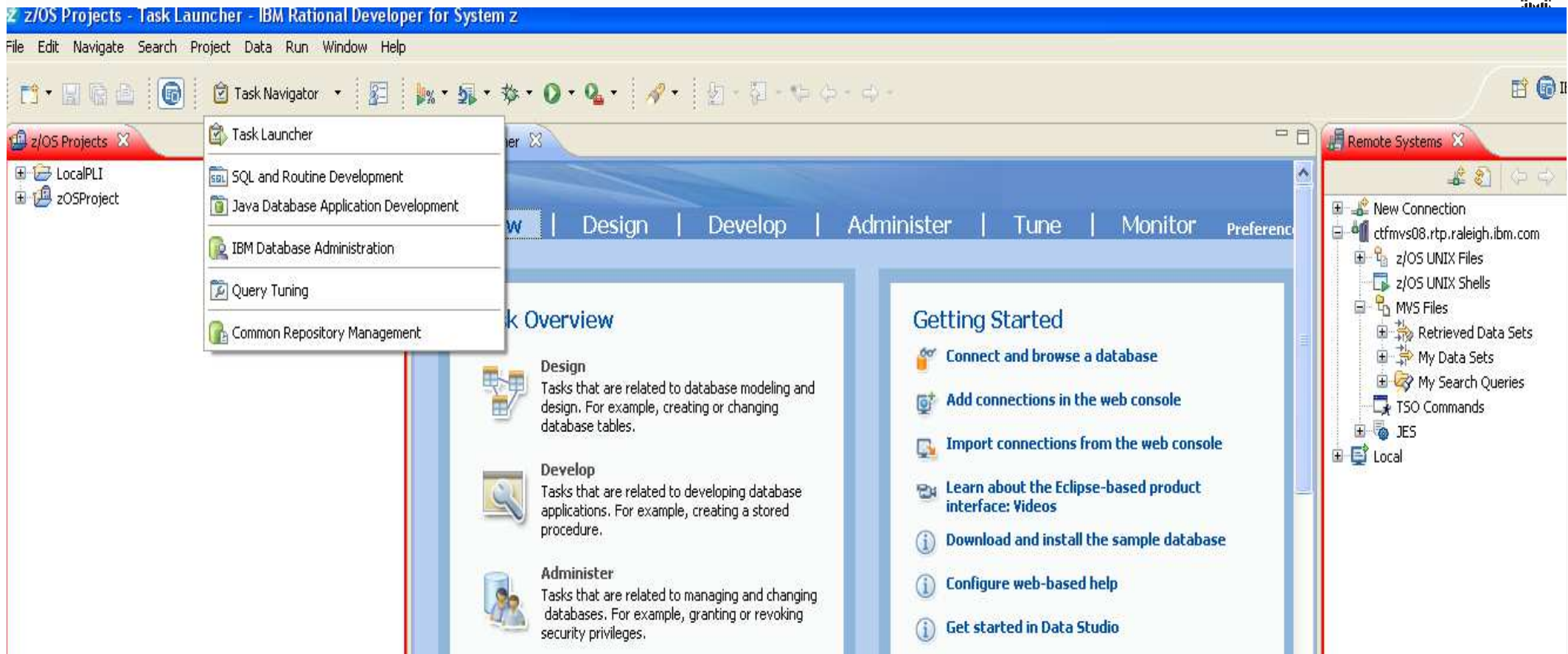
- Integration

- Miscellaneous features

- *Endevor*
- *RTC EE*
- *Menu Manager*
- *DB2/IMS/CICS*
- *Data Studio*
- *Debugging Configuration Files*



# Data Studio 3.1.1 – Bundled and Shell Shares with



- **Provides:**

- Visual Explain
- Table editor – that allows row/column table subsetting for editing large tables
- DBA tools



# Rational Developer for System z Roadmap Themes



- Productivity

- Integration

- Miscellaneous technologies

- *IBM z/OS Automated Unit Testing Framework (zUnit)*
- *Code Review*
- *Code Coverage*
- *Push to client*
- *Task Flows (Cheat Sheets)*





# RDz – IBM z/OS Automated Unit Testing Framework (zUnit)



- Unit testing framework for COBOL and PL/I
- Similar to JUNIT for Java
- RDz provides :
  - Test runner infrastructure
  - Wizards to create COBOL and/or PLI test cases
  - Build and run the test cases
  - Display the test execution results along with trace back information





# Code Coverage

- RDz 803 introduced the ability to generate Code Coverage reports. From the report, the source view can be launched to see the colored annotations that indicate the coverage (or not)
- **RDz 8.5 offers:**
  - **Choice of Function or Line level coverage**
  - **Threshold settings - i.e. line level must be >80% covered to be considered successful**
  - **Code Coverage launch view enhancements**
    - **Success indicator - based on thresholds**

The screenshot displays the 'Code Coverage Report' interface. On the left, the 'Code Coverage Summary' shows a tree view of elements and their coverage percentages:

Element	Coverage
SAM3	50%
SAM3	46%
USER170.TEST.SYSDEBUG(SAM3).cob	46%
SAM3()	46%
SAM4	61%
USER170.TEST.SYSDEBUG(SAM4).cob	61%
SAM4()	61%

On the right, the source code view for 'USER170.TEST.SYSDEBUG(SAM3).cob' is shown. The code is annotated with colored bars on the left margin indicating coverage status. A tooltip indicates that lines 382 to 384 are 'Not Covered'. The code includes several COBOL statements such as 'PERFORM 210-PROCESS-ADD-TRAN', 'WHEN 'DELETE'', 'PERFORM 220-PROCESS-DELETE-TRAN', 'WHEN OTHER', 'IF TRAN-COMMENT NOT = '\*'', 'MOVE 'INVALID TRAN CODE:' TO ERR-MSG-DATA1', 'MOVE TRAN-CODE TO ERR-MSG-DATA2', 'PERFORM 299-REPORT-BAD-TRAN', 'END-IF', 'END-EVALUATE', 'END-IF', 'MOVE TRAN-KEY TO WS-PREV-TRAN-KEY', 'IF WS-TRAN-OK = 'Y'', 'PERFORM 830-REPORT-TRAN-PROCESSED', 'END-IF', 'END-IF .', '200-PROCESS-UPDATE-TRAN.', 'ADD +1 TO NUM-UPDATE-REQUESTS.', 'PERFORM 720-POSITION-CUST-FILE.', and 'IF CUST-KEY NOT = TRAN-KEY OR WS-CUST-FILE-EOF = 'Y''.

# Code Review use cases



- **Code Review implemented in v8.0.3**

- Automated coding standards electronically desk-checked
- Support for COBOL sets of rules
  - Approximately 20 default rules with another 6 custom
- Analysis and quality report generation

- **v8.5 Enhancements**

- Additional COBOL rules requested by customers
  - Now almost 50 default rules and 10 custom
- Code review support for PL/I - analysis engine and set of rules/templates
- COBOL Custom rules support



# COBOL Custom rules support



- Most likely you will have coding standards not covered in our list of pre-built and custom templates; therefore, you will need to add your own set of custom rules to the selection lists.
- Process to build your own custom COBOL rule:
  - **Use RDz wizard** (Eclipse PDE new plugin project template) to generate plugin for custom COBOL rules
    - Creates the java plugin project
    - Creates new category(s) to hold all your domain specific rules
    - Adds rules to the categories
    - Creates java class templates for each of your custom rules
  - Rule developer **fills in the template** with java code to implement their custom rule
    - Using RDz published **COBOL Application Model API**
  - **Package your plugin** as P2 update site and **install in the RDz** Eclipse environment using Eclipse Software Updater

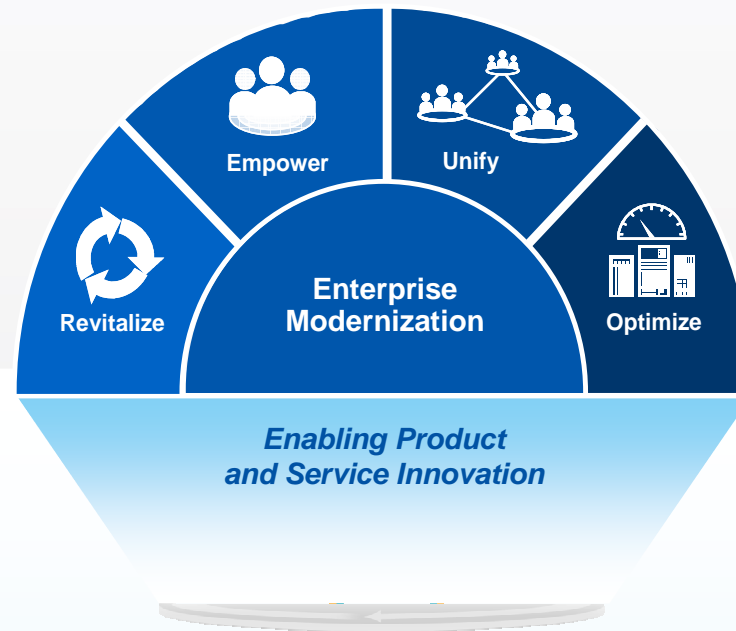


# Getting started

## Next steps to modernize your enterprise applications



### IBM Integrated Solution for System z Development



[www.ibm.com/rational/modernization](http://www.ibm.com/rational/modernization)

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