

THE ROYAL CYBER DEVELOPMENT MODERNIZATION NEWSLETTER

“TECHNICAL CONTENT FOR
A RATIONAL WORLD”

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Rational Developer for System z® 9.0.1 Raises (and clears) the bar



“RDz v9.0.1 — First Impressions”

It's funny. When I first read the IBM announcement letter about **RDz version 9.0.1** (Dec. 10th, 2013) it seemed like a fairly one-dimensional build. A new integrated source debugger - and that seemed about it. But then I started using/testing the release

and found that IBM had actually snuck a large/diverse group of new features into the product that many Royal Cyber/RDz customers had been asking for—for a long time.

Simple and useful U.I. things such as:

- Displaying the batch job return code next to the job number in the JES tree view (thanks!)
- Sorting **Active Jobs** to the top of the JES icon's tree list (“active” AKA *the jobs I am most interested in*)
- A one-click job **Re-submit** menu option
- Displaying all—not just inline—DD cards on the Outline view when editing JCL

More functionally-complex (but still useful things):

- Providing a single wildcard search character (the **?** symbol) for Remote Search - which combines with the ***** wildcard character and **Regex** expressions providing discovery functionality far greater than anything in ISPF
- And adding a new export facility for remote search results (yes thanks—we do this—a lot)

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The Royal Cyber Development Modernization Newsletter is a publication of Royal Cyber, LLC

This monthly periodical aims to educate about IBM's Rational® E.M. product line; On the tools, their usage, technical value and obstacles for doing production z/OS work with them. Each issue will focus on several of the Rational® products, and provide insights, “how to” information, editorial content and shared experience.

The views expressed in this newsletter are solely ours. They are based on the production use of the Rational® E.M. products internally and on customer engagements. We welcome your comments and feedback. Please direct emails to:

inquiries@royalcyber.com

“Integrating Asset Analyzer with RDz”



When does $1 + 1 = 3$?
That's easy...
when the ones are
replaced with **RDz** and **RAA**.

These two products integrate under the umbrella of Eclipse to provide a comprehensive

application analysis tool suite — capable of answering a wide (arguably the widest) spectrum of questions about your z/OS code, modules, batch jobs, transactions, variables, copybooks, files and databases.

Asset Analyzer or RAA—short for **Rational® Asset Analyzer**

is a static code analysis product. Static code analysis tools date back to the time of (yep) **Y2K**—that famous software **Arma** that never actually **geddon'd**.

Thanks to your work and to products like RAA. IBM has been investing in RAA since the year 2000 ... continued on page 3

RDz 9.0.1 — continued from page 1 Other categories of new feature include—but are not limited to:

- Several **RTC** (Rational® Team Concert) + **RDz** integration enhancements, And almost a dozen CARMA/CA-Endevor integration features
- New **Code Review** (Software Analyzer) rules for PL/I. Before this release Code Review Rules were only available for Java and COBOL. RDz's Code Review provides, essentially “*electronic desk-checking*” of COBOL, Java and now PL/I programs for quality standards, consistency, maintain-ability, etc.
- **Menu Manager** actions are now available for VSAM files and migrated datasets. Allowing you to run your pivotal REXXs & CLISTs against **all** MVS data sources (QSAM files, libraries and PDS members, GDG datasets and now VSAM files)
- There are several enhancements to **LPEX**, and to the COBOL, PLI and JCL Editors—including a valuable new “**Save As**” feature—which allows you to save the spool file output of Batch Jobs to **local** datasets. This is similar to the SDSF “XDC” command (an option to save to remote MVS datasets would be nice)

The RDz Integrated Debugger — is possibly the single largest enhancement to RDz in the 10 years the product's been on the market. In its first release the RDz Integrated Debugger will support: **COBOL: V5.1, V4, V3.4** for: **Batch, Batch IMS, Batch DB2, CICS 5.1, 4.2, 4.1**

Standard debugging feature/function such as: Variable monitoring/value modification, Breakpoints (*all essential types of breakpoints except for watch/global breakpoints on value change*), Stepping, Zooming (running) and Animating through code, Jumping to different statements ... all of this functionality works. Additionally, all of the RDz LPEX Editor tooling; **Program Control Flow** (see screen capture), **Occurrences in Compilation Unit** (*used for Data Flow Analysis*) the synchronized **Outline View** and a lot more of the useful analytics are available **during Debug**. As a bonus, the Integrated Debugger's architecture houses most of the active/system code on the client, which in theory could improve z/OS CPU costs. But note that we haven't benchmarked this yet for MIPS savings.

Our take: The RDz 9.0.1 Integrated Debugger is a bold move for Rational®, as there are mature z/OS COBOL debuggers on the market. However none of them come packaged with a high-end/quality workbench. Please... we know about other RDz *competitive products*, but in this post-ISPF development tools age, there simply is—in our view nothing comparable to RDz. And we'd be happy to discuss **why** with anyone — anytime. By putting the Debugger in the box with RDz (*there's no additional cost for this product feature*) IBM is serving notice that it intends to own the entire z/OS application analysis/construction/maintenance/support space. It's hard to argue with full-lifecycle integration as a plus. And they're off to a very nice start, although in testing the initial release, the response time was slower than Debug Tool.

But

The screenshot displays the RDz 9.0.1 Integrated Debugger interface. At the top, there's a 'Debug' window showing the current session details for 'SAM3'. Below that, the main editor shows a COBOL program listing with a tooltip for 'CURRENT-DATE = { 14, 01, 03 }'. The 'Program Control Flow' diagram at the bottom illustrates the execution flow between various program units. A text box in the center reads 'An RDz 9.0.1 Debug session — With the Program Control Flow Diagram'.

then, IBM is famous for improving product performance. However, the future of this bold move lies in how much IBM is willing to continually invest in the tooling.

Where can you learn more about RDz v9.0.1 and the Integrated Debugger?

The only way to learn about RDz is by using it. And the most effective/efficient—**both cost and time efficient**—way to learn to use a tool is through quality training. At Royal Cyber we specialize in RDz skills transfer, offering classes in all aspects of RDz. We offer specialized curricula for different languages, and for developer roles: programmer/analysts versus testing teams, etc. RDz technical services is **what we do**—and we do it better than anyone.

- [Click: to learn more about Royal Cyber's RDz Services Offerings](#)

Oh—and did we mention that IBM chose Royal Cyber to deliver its (IBM-sponsored) RDz Distance Learning in 2014 (see announcement on page 4)?

RAAi Advanced Integrated Program Analytics —continued from page 1

And as part of IBM's vision for COBOL, PL/I and Assembler program analytics they have over the years provided packaged plug-ins; first to RDz and (who knows) perhaps soon to other tools in the Rational EM space. Why? Static code analysis, which is interested in answering the questions; “**How does this application do what it does?**” and; “**What happens if X is changed in the code?**” is the perfect complementary function-set for an *single program-module product* like RDz. In that RAA extends the formidable RDz analysis tooling, tooling that max's out at “*what happens within an individual program module*” to; Your application, A composite load module, A transaction, Your files/database/etc.—potentially even all of the applications in your Enterprise. In other words, RAA solves the puzzle that is your z/OS application software, providing high-value graphical views and hyper-linked answers to most of the expensive and difficult questions you grapple with.

In order to embed all of RAA's analysis functionality inside of RDz IBM created an Eclipse plug-in named: **RAAi** - and made it freely available if you own RDz and own RAA. The plug-in is installed using IBM's standard Installation Manager tooling. When installed, from RDz preferences you configure a URL to the RAA server and Voilla... you're ready to rock & roll (access RAA from within RDz). This is done via a simple Search (from the RDz menu bar) on Programs or Data elements *inventoried* into the RAA repository (where RAA stores all of the application elements and their element relationships/references).

What's key here is that the RAA access is done from inside RDz—from the Eclipse shell. Without leaving the RDz workbench development tooling, you can ask and answer the difficult impact analysis, discovery/research, code quality, etc. questions that you typically do using many, many, many, many, many (*that's 5 manys*) ISPF 3.x searches—where you'd probably save off temporary results, type, search, save, typetypetypetype, search-some-more, etc. A grueling, error-prone archaic manual process (*sorry — but you know it is*). Here's the RDz/RAAi workflow:

1. **Open the RDz Search menu and hit the RAA repository**
2. **Bring up the RAAi search results view**
3. **Start answering your questions using hyperlinked search results**—which replace those many-many-many searches and the interim-result saves to Notepad. You can combine this with RAA's native/high-value graphical views of your application's semantics. The figure below shows a program open in RDz for edit; Its Calls and I/O aggregated in the RAAi Run unit diagram, and a hyperlinked view of all DB2 table columns accessed in the embedded SQL statements.

The screenshot displays the Rational Asset Analyzer (RAAi) interface. The top window shows the program details for TRTMNT, including a list of COBOL statements such as 'ACCESS MODE IS SEQUENTIAL', 'SELECT TRMTEdit', and 'SELECT PATMSTR'. The bottom window shows the 'Run unit diagram' for TRTMNT, which is a hierarchical diagram showing the program's relationships with various data sets and tables. A tooltip indicates a relationship between the program and a DB2 table: 'Relationship Program: TRTMNT -> DB2 table: DDS0001.MEDICATION'. Below the diagram, there is a table of DB2 columns accessed in the embedded SQL statements.

| DB2 column | DB2 table | Reference |
|----------------------|--------------------|-----------|
| BED_ID | DDS0001.HOSP_BED | 2 |
| DIAG_CODE | DDS0001.DIAG_CODES | 2 |
| MEDICATION_ID | DDS0001.MEDICATION | 2 |
| PRIMARY_PHYSICIAN_ID | DDS0001.WARD_DATA | 2 |
| SUPERVISOR_NURSE_ID | DDS0001.WARD_DATA | 2 |

Our take: So...this (RDz + RAAi) is a modern z/OS application development, maintenance and support toolset. A workbench that includes access to modern (hyperlinked) application semantics—integrated with other functionality needed for the enterprise z/OS projects, tasks and work you do. RAA also sports a truly wonderful set of tools for doing what's known as “Business Rules Mining” - excavating your application semantics as formalized “business rules” - which can be exported to other products and rules engines for transforming your applications into modern languages (Java) and frameworks.

Where can I learn more about RAA and RAAi?

Essentially from us —or from IBM. IBM has several high-quality RAA specialists who can provide deep-dive product demonstration and proof-of-concept project assistance. IBM has also published a few RAA Redbooks with RAA content—such as: <http://www.redbooks.ibm.com/abstracts/SG247868.html>?Open

At Royal Cyber we bring a 3rd Party objectivity to your projects and our work on them. And we have the practical/production expertise to help you manage true production projects. Finally, we offer high-quality **RAA training** that was built from our customer and personal experience with RAA.

[Click to contact us about our RAA service offerings](#)

New Rational E.M. Services, products and announcements from Royal Cyber

RDz Property Group Composer

- Property Group Composer is an RDz plug-in that automates the definition and management of RDz's requirement for copybook/include (SYSLIB) library-list concatenation.
- **Benefits:** Using Property Group Composer developers generate Property Groups from existing build JCL. They can then access programs for analysis or edit and RDz will find the correct copybook/include libraries—providing RDz functionality with minimum manual configuration/administration time and cost—improving productivity and achieving ROI.
- [Click for details on Property Group Composer](#)

RDz Distance Learning Wrapper Training

- Just as your z/OS installation, project processes and z/OS tools are unique, so too is your RDz configuration, and use—and by extension your RDz training requirements.
- RDz Distance Learning is “vanilla” training that (necessarily) leaves out critical topics like: SCM-integration training, Data File Editing, BMS Map Editing, Code Review, etc.
- As importantly, to ensure that you leave training knowing how to use RDz with your production project deliverables, using your RDz configuration and RDz preferences setup, and with an understanding of how to become self-sufficient

RDz Distance Learning Wrapper ... continued

for the inevitable technical questions that will arise once you start using RDz in production mode “native” or vanilla RDz training presented in Distance Learning falls short of the mark.

- Royal Cyber's Distance Learning Wrapper program bookends the native IBM/RDz Distance Learning program with customized modules that integrate with your unique RDz environment. So that there is a clear on-ramp experience for you use the product as effectively and as quickly as possible. [Details on this program](#)

Announcements

Royal Cyber Selected to run the IBM RDz Distance Learning Program

- As a result of the high quality work Royal Cyber has done in RDz technical services we were selected to deliver IBM's Distance Learning in 2014—providing instructors and courseware so that you continue to benefit from this high-quality IBM program.
- [Click to enroll in 2014 RDz Distance Learning](#)



Introducing Rod Hunter

Technical instructor/mentor, Technical consulting specialist and Course

author for Royal Cyber services involving: **RDz, RAA, RD&T, RTC/RTC EE and HATS**

Rod—who lives in East Sussex, UK has had a 20+ year career in z/OS and Rational technologies. Working in Applications and Systems Programming, Testing, and Project Management before joining IBM in 2006.

While at IBM Rod provided U.K. and European technical engagement work in the Rational tool suite.

He enjoys golf & cycling (what Brit doesn't) jazz and winter sports. And answering technical questions about Rational E.M. tools and technologies.

- eMail me: roderick@royalcyber.com

From the editor's desk

Hi. I'm Anand Vijay Royal Cyber's **Technical Consulting Services Director** for engagements comprising the Rational E.M. product line.

I've been doing z/OS work for going on two decades with a special interest/ emphasis in tools for z/OS application maintenance, support, and analysis.

In my daily professional life I do a little bit of everything from Systems Programming to application design, from administering and supporting RDz to working as a DB2 DBA. Even a little Business Intelligence tooling (yes...I like to stay busy).

We at Royal Cyber are publishing this newsletter to both keep you informed of the ongoing technology offered in the Rational EM tools and products space and

to engage in dialog with you about your experiences with Rational tools.



[Royal Cyber consulting](#) is an active user of RDz, RTC and RD&T in its professional engagements and internal processes, and we will pass along the lessons learned and product best practices as they materialize.

We hope to make this a monthly periodical—and with your help, we can.

Please eMail suggestions about content, focus and your areas of interest for this newsletter. Also, if you'd like to contribute by writing an article or op-ed or just chat about things Rational send a note to:

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