



***The Modern Mainframe...
At the Heart of Your Business***

Tools for Rapid Development and Deployment



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Discover Your Assets on the Mainframe

How do our new employees discover the existing assets?
If they make changes, which other systems or applications will be impacted?



**Service Oriented Finance
CIO**

WebSphere Studio
Asset Analyzer can help them



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WebSphere Studio Asset Analyzer (WSAA)

- Powerful tool for Discovery and Impact Analysis
 - ▶ Search for application assets
 - ▶ Understand asset structure and relations
 - ▶ Perform data flow and impact analysis
 - ▶ Extract code for re-use

- Supports both mainframe and distributed assets

- Results are displayed in easy-to-read graphical windows
 - ▶ Web Interface available

Explore Assets

The screenshot displays the 'Explore MVS assets' web interface. The browser address bar shows 'http://wsaa.svl.ibm.com:9080 - Explore MVS assets - WebSpher...'. The interface includes a navigation menu with 'Home', 'Explore', 'Impact analysis', and 'Database'. Below the menu, there is a search bar with the query 'AC* QA*' and a 'Go' button. A 'Type mixed case' checkbox and an 'Advanced search' link are also present. The main content area features three tables: 'Run time', 'Program', and 'Data', each with columns for 'Total' and 'Results'.

Run time	Total	Results
Batch job	30	4
CICS group	123	0
CICS online region	4	0
CICS transaction	468	25
DB2 system	3	0
IMS DBD	11	0
IMS subsystem	3	0
IMS transaction	23	0
Run unit	358	17

Program	Total	Results
BMS map definition	5	4
BMS map set definition	1636	1
Concatenation set	4	0
DB2 stored procedure	3	0
Entry point	32	17
IMS PSB	43	0
Literal	1734	0
Program	26	17

Data	Total	Results
Data element	5686	25
Data set	198	0
Data store	82	12
DB2 column	3003	7
DB2 table	406	0
DD name	907	0
I/O record description	143	9

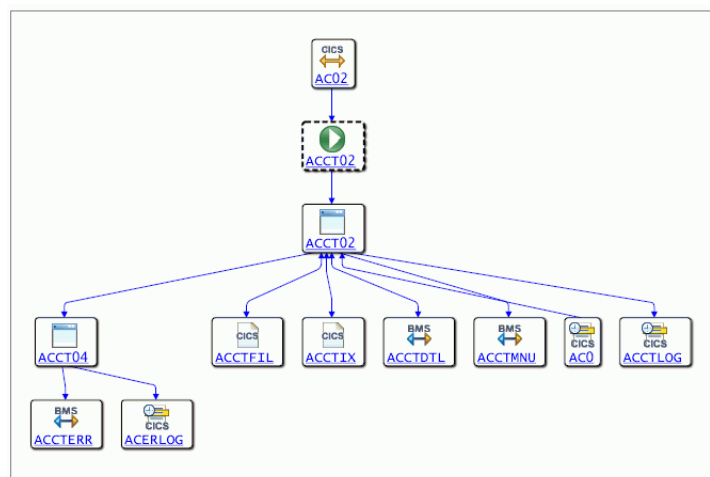
The interface also shows a status bar at the bottom with the date 'Mon Dec 11 10:49:44 PST 2006' and a taskbar with 'Done' and 'Internet' buttons.

WSAA Can Discover and Take Inventory of a Wide Variety of Mainframe Assets

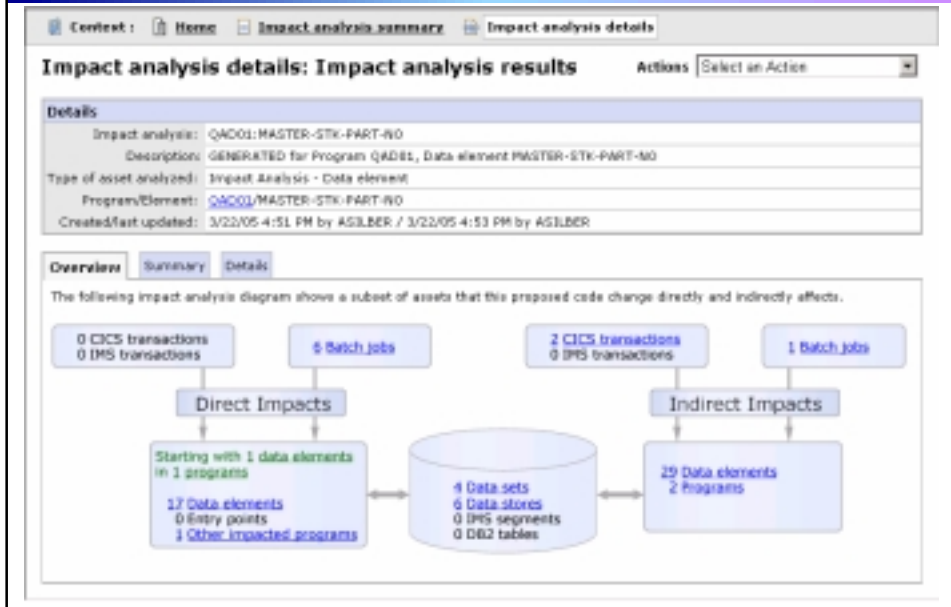
- Source code: COBOL (including copybooks), PL/I, assembler, and JCL
 - ▶ Source code can be in a partitioned data set (PDS or PDSE) or controlled by a source control management (SCM) product.
- CICS online regions and transactions
- IMS subsystems and transactions
- SQL statements (DCLCURSOR, DCLTABLE, DELETE, FETCH, INSERT, SELECT, UPDATE)
- DB2 catalogs (columns, stored procedures, systems, tables, and views)
- MQ calls and queues
- J2EE assets

Understand Asset Structure and Relations

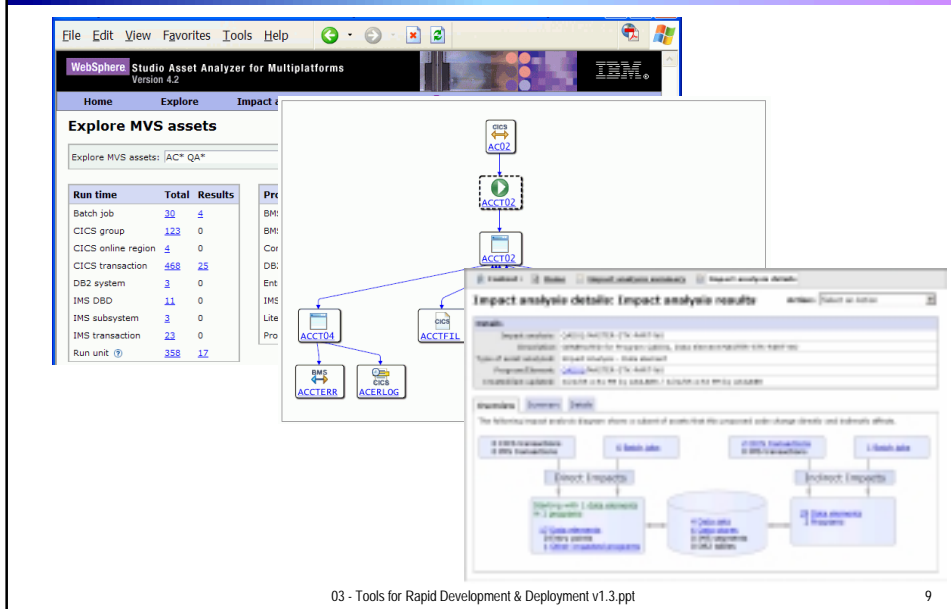
What programs, BMS screens and VSAM files does ACCT02 access?



What Is the Impact of a Proposed Change? WSAA Provides Graphical Results



DEMO: WebSphere Studio Asset Analyzer



Service Oriented Finance Needs Productive Developer Tools

We have a lot of new solutions to build. If I build them all on System z, I will have to find more System z development skills



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With modern tools like WebSphere Developer for System z, you can boost the productivity of your existing team



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WebSphere Developer for System z (WDz)

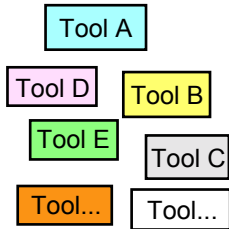
- IBM's latest tool for System z development
 - ▶ Version 7 shipped Dec 2006
- Single integrated tool for developing mainframe applications using both traditional and newer technologies
 - ▶ Develop traditional COBOL/PL1/ASM/JCL/BMS/EGL applications
 - ▶ Develop Java/J2EE and Web applications, including JSF and struts
- Boosts developer productivity compared to green screen tools
 - ▶ Workstation tool based on Eclipse
- Leverage existing assets in a Service Oriented Architecture
 - ▶ Quickly expose CICS transactions as native services
 - ▶ Visually wire together CICS transactions into a business flow

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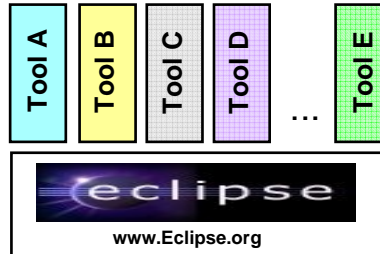
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WDz is Built on Eclipse Eclipse Provides an Integrated Toolset

Individual Tools



Integrated Tools



Challenges:

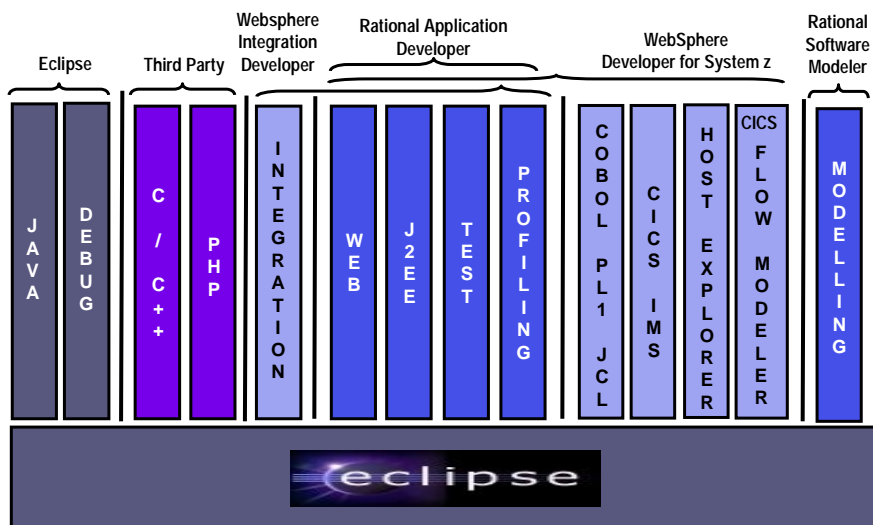
- ▶ Each task requires different tool
- ▶ Multiple repositories
- ▶ Multiple skills required for each tool
- ▶ Different look and feel
- ▶ Different semantics
- ▶ Difficult to manage
- ▶ Duplicate functions

Benefits:

- ▶ Tools integrated on open source platform
- ▶ Consistent User Interface
- ▶ Same semantics
- ▶ Supports multiple roles
- ▶ Common Repository between all tools
- ▶ Pluggable tools framework
- ▶ Integrated Test Environment

IBM Tools for SOA Development

Function delivered as perspectives in eclipse



WDz Highlights for Traditional Development

- Interactive, workstation-based environment
 - ▶ Interactive access to z/OS
 - ▶ Work with host files as though they are local
- Boosts developer productivity compared to “green screen” tools
 - ▶ Interactive edit/compile/debug on the workstation
 - Work offline or online
 - ▶ TSO commands, job generation, submission, remote debug to z/OS
 - ▶ Language sensitive editors

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Interactive Access to z/OS

- Connect to z/OS system using Remote System Explorer
- Work with host libraries and datasets
- Job generation, submission, and monitoring
- TSO/USS command execution
- Mainframe integration:
 - ▶ Issue TSO commands or jobs from desktop
 - ▶ Full screen 3270 access
- Host Source Code Management (SCM) access through CARMA (Common Access Repository Manager)
 - ▶ Unified interface for accessing different host based SCM tools

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DEMO: Introducing WebSphere Developer for System z

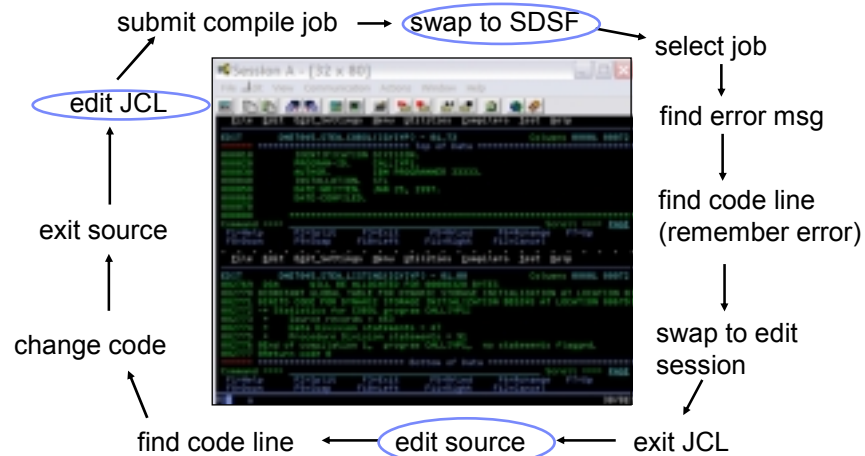
- Perspectives and views
- Remote System Explorer
- Working with host datasets
- Language-sensitive COBOL editor



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ISPF: How Does Traditional “Green Screen” Development Work?

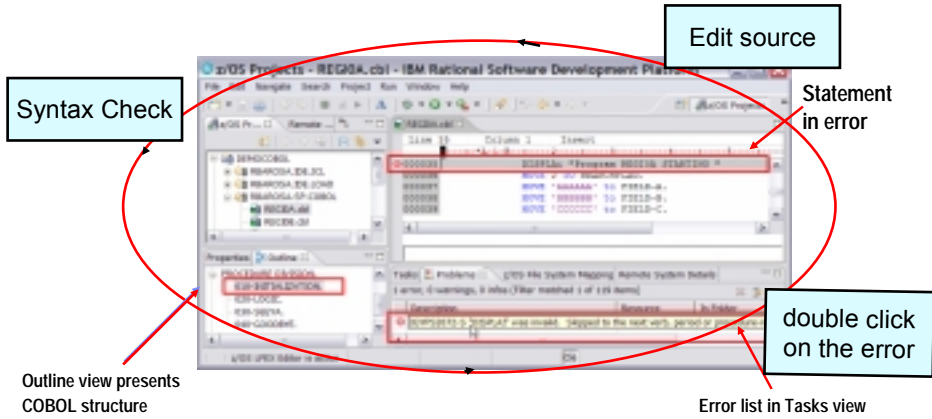


- Programmer goes through a sequence of screens in order to get the job done
 - ▶ 3.4 listings, job listings, SDSF outputs, etc.
- Programmer is constantly flipping back and forth between these ISPF screens

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Simplified Development with WDz Perspectives



Benefit: Simplified development for COBOL and PL/1 through intuitive, interactive screens

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DEMO: WebSphere Developer for System z Productivity Features

- Content assist
- Syntax checking
- Compare two files
- Local history



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WDz Advantages Over Traditional Host-based Tools

- Do multiple concurrent activities
 - ▶ With WDz, developer can multitask, all of the required perspectives are readily available
 - ▶ ISPF allows a maximum of 2 concurrent activities
 - No such limit in WDz
- Capabilities of a GUI editor
 - ▶ Color coding, Content assist, Outline view ..and many others
- Visual debugging
 - ▶ Identify problems quickly and intuitively

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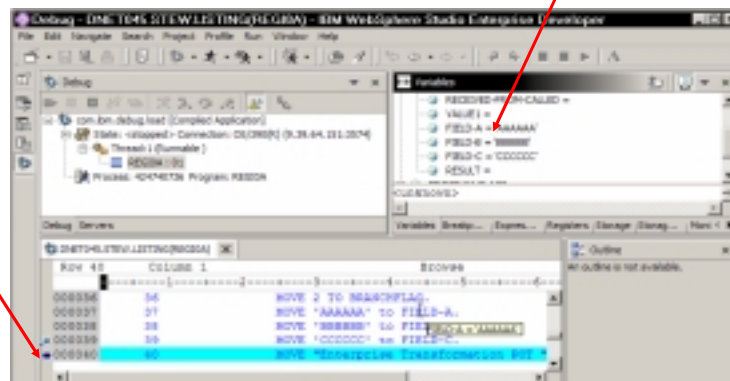
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Productivity Features for COBOL, PL/1 Programmers: Remote/Local Debug

- Same Debug Perspective used for COBOL, PL/1 & Java, etc..
- WDz is the ONLY product in the market that does END-to-END debug.. you can debug HTML --> JSP --> Java --> COBOL on z/OS... in the same IDE

Change contents, etc..

Breakpoints, watchpoints, Jump to, Run to etc..



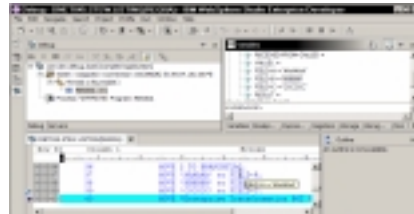
Benefit: Consistent debugging environment for COBOL, PL/1, Java

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DEMO: Developing a Host Application Using WDz

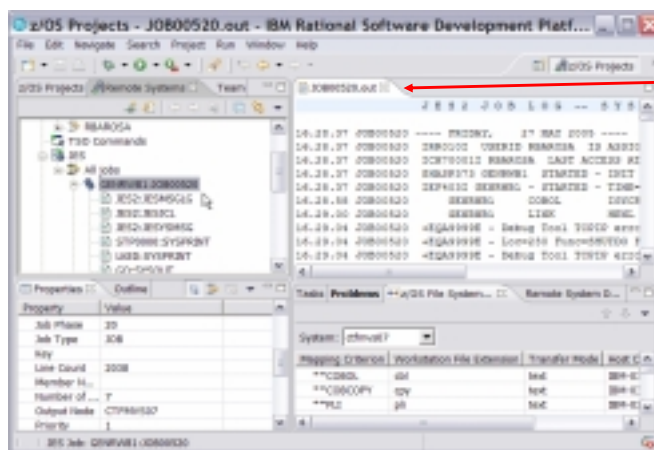
- Edit/Compile/Debug
- Show use of WDz productivity features
 - ▶ Write COBOL code, use Content Assist, syntax Check
 - ▶ Generate JCL for Compile-Link-Go, submit
 - ▶ Use Visual Debugger to walk through code as it executes



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Another Productivity Features for COBOL, PL/1 Programmers: Monitoring Job Output



Output can be seen like local files.. Can use Find, etc..

Benefit: Developers do not have to continually switch between systems to use SDSF. No TSO need.

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Productive Developer Tools for SOA Solutions

How about support for newer technologies like Web pages, Web Services and SOA?



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Remember, we already used WebSphere Developer for System z to help build parts of that external broker solution.

WDz includes Rational Application Developer which is our primary tool for developing J2EE in the distributed world.



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WebSphere Developer for System z Dramatically Lowers the Cost of Development for System z

- Productivity Increases over ISPF:
 - ▶ COBOL and PL/I Traditional Development
 - + 5% in program understanding
 - +10% in edit activities
 - +44% in compile/debug activities
 - ▶ Web Services and SOA development
 - +300% in programmer productivity

NEW! An independent study from the Branham Group

- Workstation based edit, compile, debug saves mainframe cycles
 - 80% reduction in cost of compiles

Based on customer studies at
Fiducia, Deutsche Bank AG,
Nationwide, etc.

http://www.branhamgroup.com/wdz_study

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Business Problem Solved

I am glad to see you have reduced our programming costs and our application backlog



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CEO

Increased productivity using WSAA and WDz made this possible. I didn't need to hire more System z development skills.



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A Look at Rational Enterprise Generation Language (EGL)

- New development tool supports high level, Enterprise Generation Language
 - ▶ A simplified high level programming language that lets developers write full-function applications quickly
- Code in higher level language, then generate to language of choice (Java or COBOL)
 - ▶ Tight integration with Java Server Faces
- Well suited for “business oriented developers”
 - ▶ Who are used to using Oracle Forms, Informix 4GL, Visual Basic, and RPG
- Learn and use quickly and easily

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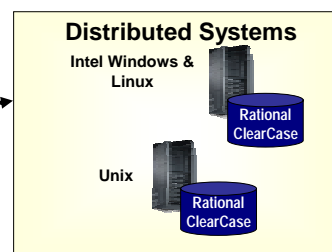
Team Development: How Can Mainframe and Distributed Development Teams Work Together?

- Rational provides a comprehensive set of products that support team development across different platforms
- Software Configuration Management
 - ▶ System z only Scenario
 - SCLM Advanced Edition
 - ▶ System z and Distributed Scenarios
 - Federated Management
 - Common Repository with z/OS Extensions

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System z and Distributed Scenario 1: Federated Management



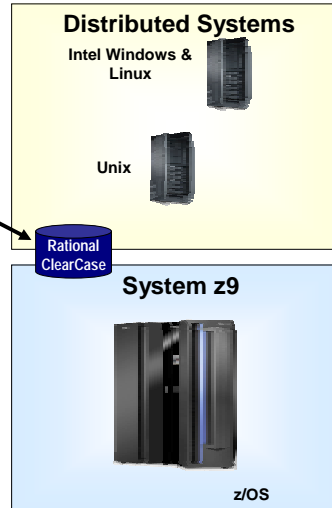
- Use Rational ClearQuest as a single point of control
 - ▶ Assets in ClearCase and SCLM repositories
 - ▶ Coordinated build and promote activities between ClearCase and SCLM



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System z and Distributed Scenario 2: ClearCase is the Common Repository



- Rational ClearCase/ClearQuest repository for asset management
 - ▶ Single point of control, single point of management, single repository of knowledge, single set of user interfaces, consistent process paradigm

