Integrated Application Development for z/VSE based on Eclipse

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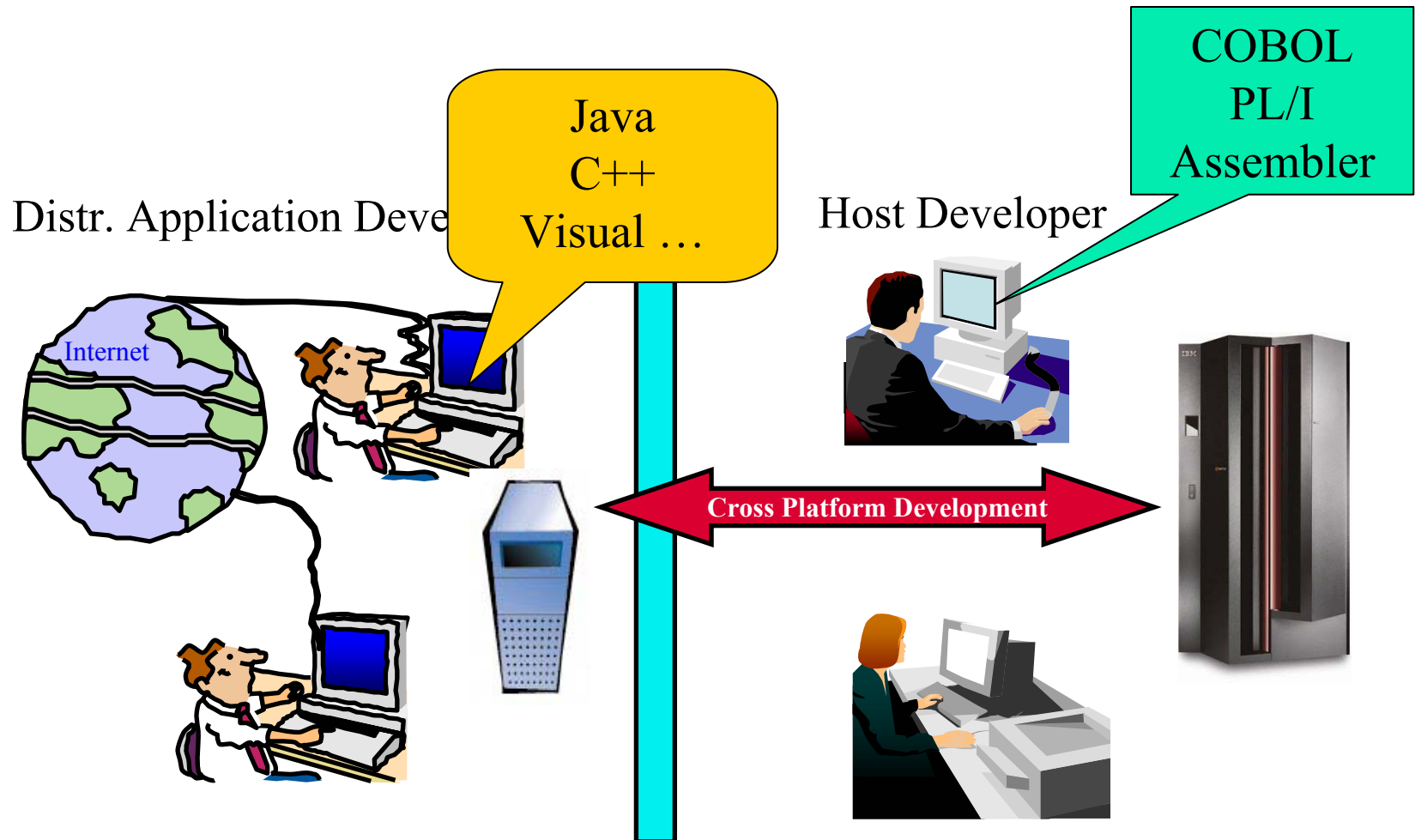ACUCORP is a registered Trademark of ACUCORP Corporation

Development objectives !!!

- **Tools for managing existing z/VSE source code and changes**
  - COBOL, ASM, PL/I, C
  - increased productivity for changes and new development
  - flexibility in versioning
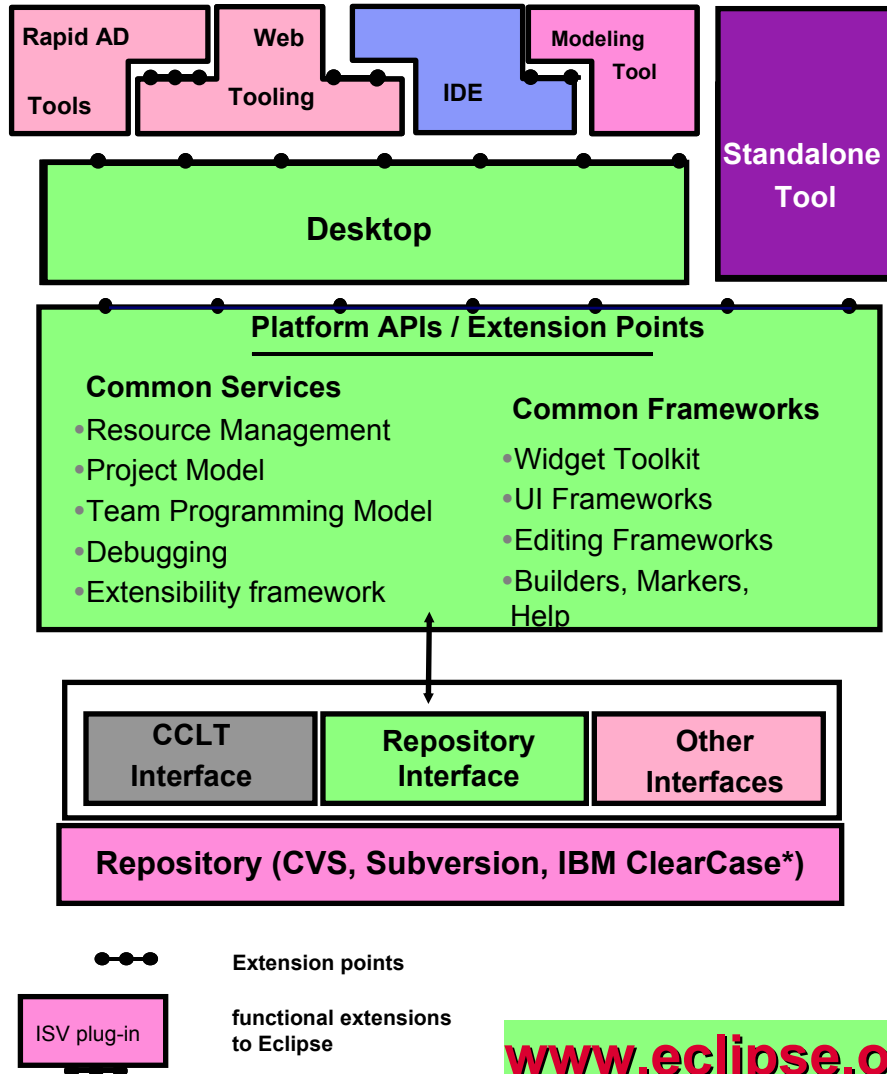 - effective group development control

- **Develop for multiple platforms**
  - common framework for the enterprise instead of multiple unique platform dependent tools
  - same basic tool set for open systems and mainframe

- **Open source based technology**
  - tools that students know from school and university communities
  - help new developers adapt to the mainframe

'Distributed' Development Landscape…

Eclipse – the open Standard for application development

Rapid AD Tools

Web Tooling

IDE

Modeling Tool

Standalone Tool

Desktop

Platform APIs / Extension Points

Common Services
- Resource Management
- Project Model
- Team Programming Model
- Debugging
- Extensibility framework

Common Frameworks
- Widget Toolkit
- UI Frameworks
- Editing Frameworks
- Builders, Markers, Help

CCLT Interface

Repository Interface

Other Interfaces

Repository (CVS, Subversion, IBM ClearCase*)

Extension points

ISV plug-in

functional extensions to Eclipse

www.eclipse.org

What is Eclipse about:

- **Open source development framework**
  - with modern Editors
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  - entire source code in central Repository
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    - follow-on to Visual Age Generator

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HATS

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Host Access Transformation Server (HATS)

- **A Web-to-host integrator, HTML emulator ...**

- **rules-based transformation engine, application integration ...**

- **converts green screens to graphical user interfaces in web applications**

- **improves ease-of-use of host applications.**

Benefit: Easily extend existing applications to the web

Modernize Existing Applications with HATS

(2) Integrate existing applications in Web applications – in Java

Rational Application Development + HATS Plug-In

z/VSE Server

TN3270

TCP/IP

LIBR
Power
console

DL/I
ICCF
VSAM

CICS TS

DB2

VSAM
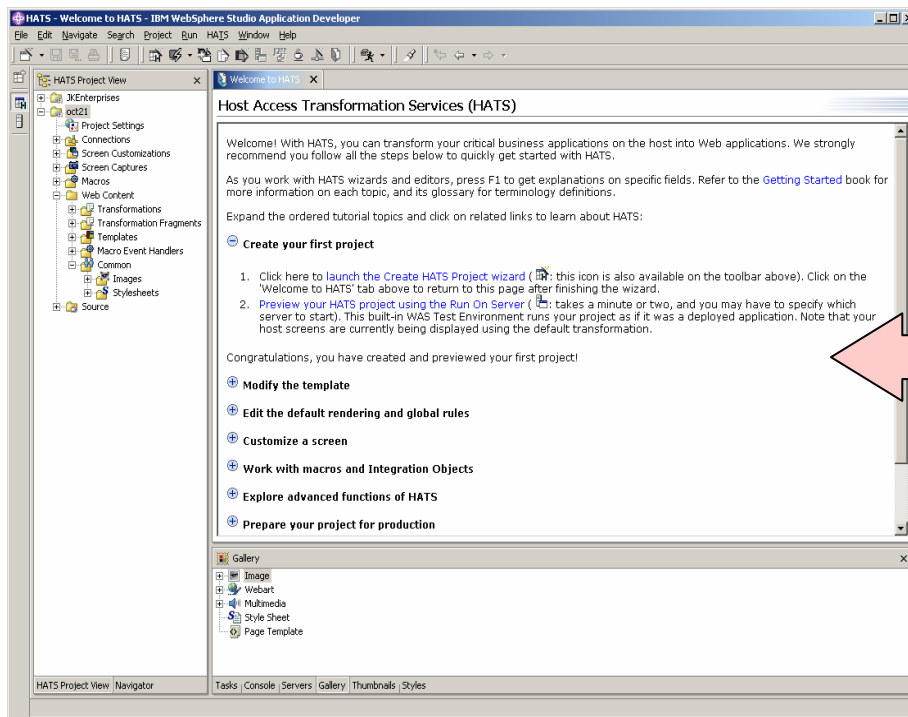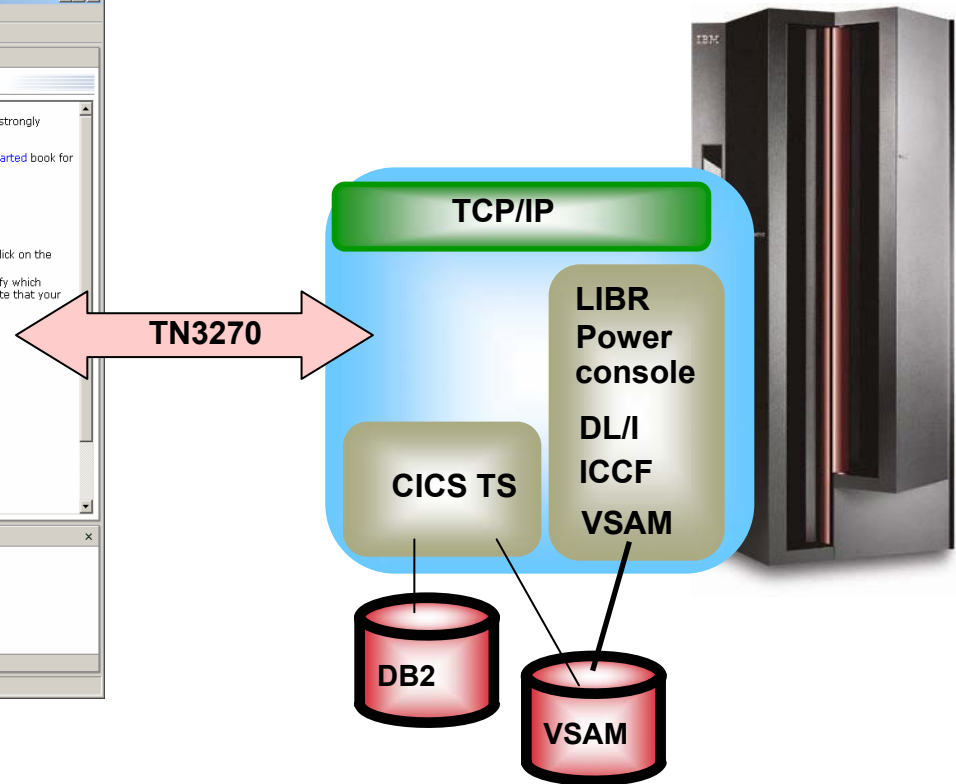
- **Application-Development – in Java**   (i.e. HATS Studio or Eclipse)
- The new application accesses unchanged VSE application and data
- the new application is a web application using internet technologies

Web application for z/VSE applications with 3270 interface

HATS Advantages:

- Combine / Integrate

MASTER INDEX INQUIRY

LAST NAME: smith??   MID: ?

    FIRST: john???????????   MIDDLE: TITLE: ?

 AKA: ?

 AKA: NAME CNT:

    DATE OF BIRTH: SEX: TELEPHONE:

ADDRESS: ADDR CNT:

DATE OF DEATH:

STATE ID: SSN:

EMPLOYER NAME:

COMMENTS:

RELATED CASE ID   CASE TITLE   NO. OF REL. CASES:

                         PF2 - RESTART INQUIRY   PAGE: OF
    PA1 - PAGE FORWARD   PF3 - AKA SUMMARY   OPID:
    PA2 - PAGE BACKWARD PF4 - RETURN TO SUMMARY   MOD DATE:
              JSH207 - MID RECORD DOES NOT EXISTS.   TIME:
              JSH208 - SET ADDITIONAL SEARCH PARAMETERS.
              JSH209 - CANCEL TASK WITH CLEAR KEY.

JSHIM51

Hawai'i State Judiciary

Hawai'i State Judiciary's Public Access to Court Information

Search Option #1 - Enter the full case ID below.

Case ID

[ ] Search

Search Option #2 - Search on a person or business' name.

Last or Business Name   First Name

[ ]   [ ]   Search

Search Option #3 - Choose from the selections below and enter the case number as indicated. (Suffix is optional)

Circuit	Case Type		Year	Century	Case Number	Suffix	
Oahu ▼	Civil ▼		▼	2000's ▼		01 ▼	Search

Civil
Circuit Court Criminal
District Court Regular Civil Claim
District Court Small Civil Claim
District Court Temporary Restraining Order
Equity
Family Court Appeal
Family Court Criminal
Divorce
Family Court Domestic Abuse
Family Court Miscellaneous
Guardianship
Land (after 1997)
LAW - initiated prior to statehood w/ activity after 1984
Mechanic's and Materialman's Lien
Probate
Small Estate (before 1995)
Small Guardianship (before 1995)
Special Proceedings
Special Prisoner Proceedings

Print   Help   Exit

Application Integration with Host Access Transformation Services

- Not invasiv

- No software download to the client

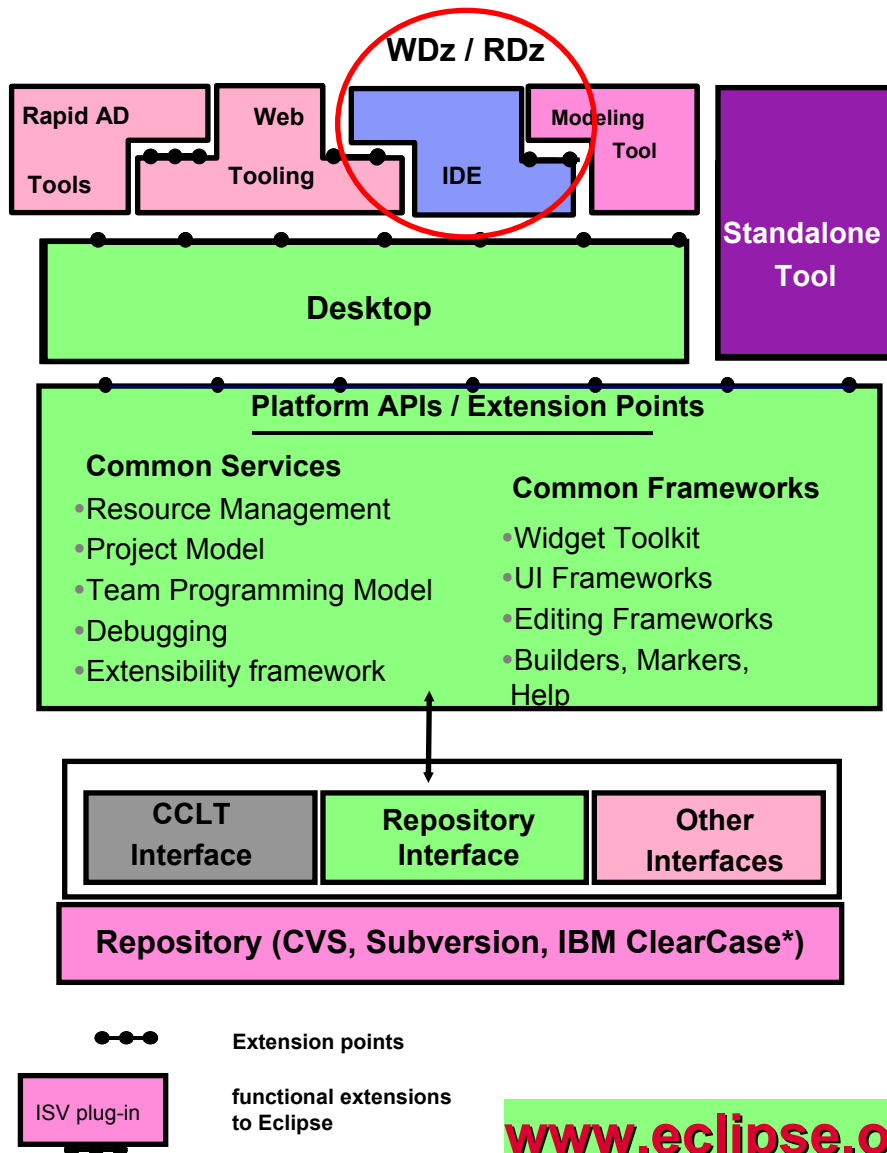- Web Services on the fly

- Integration with distributed applications

3270 or 5250
data stream

Windows/
Linux
DB2
ORACLE

DB2
UDB
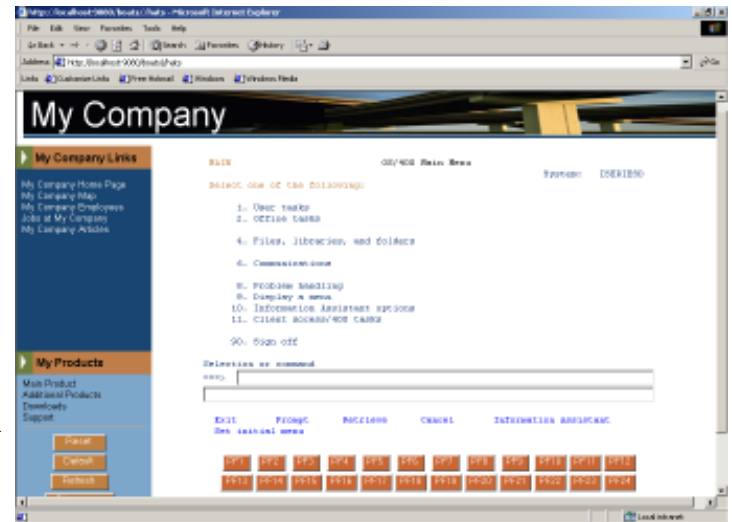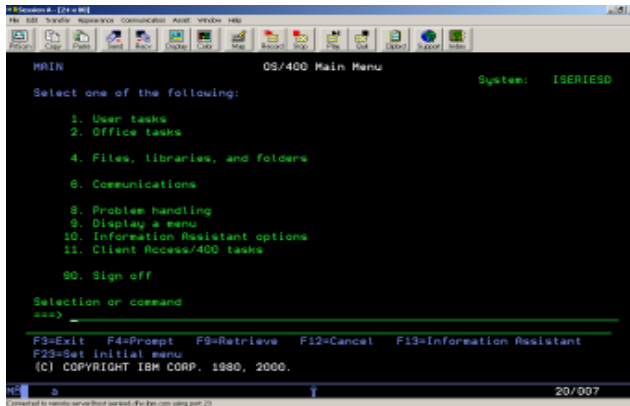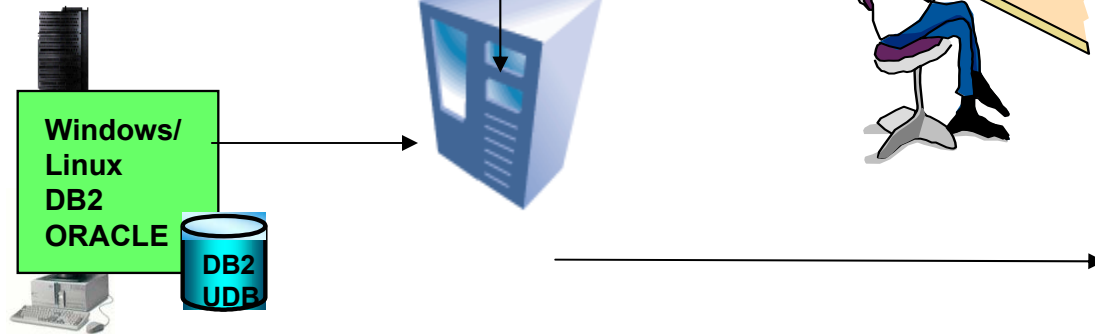
Screen transformation rules running on
WebSphere Application Server

HTML in a Browser

# Eclipse – the open Standard for application development

WDz / RDz

| Rapid AD Tools | Web Tooling | IDE | Modeling Tool | | Standalone Tool |

Desktop

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| CCLT Interface | Repository Interface | Other Interfaces |

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ISV plug-in | functional extensions to Eclipse

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IBM Developer tools based on Eclipse technology

IBM

Rational Developer for System z

Rational Application Developer

Eclipse

- z/OS Application Development
- XML Services for the Enterprise
- Service Flow Modeler
- BMS Map Editor
- COBOL and PL/I

z/VSE

+ (1)VSE Develop. Plug-In
+ (2)VSE EGL Plug-In for COBOL Generation

- J2EE/EJB & Portal Development
- Component Testing
- Code Review & Runtime Analysis
- UML Visual Editors
- Configuration Management

+ VSE EGL Plug-In for COBOL Generation

z/VSE

The IBM Development environment for the enterprise

WebSphere Developer for System z (WDz)
Rational Developer for System z (RDZ)
with z/VSE Development Plug-in
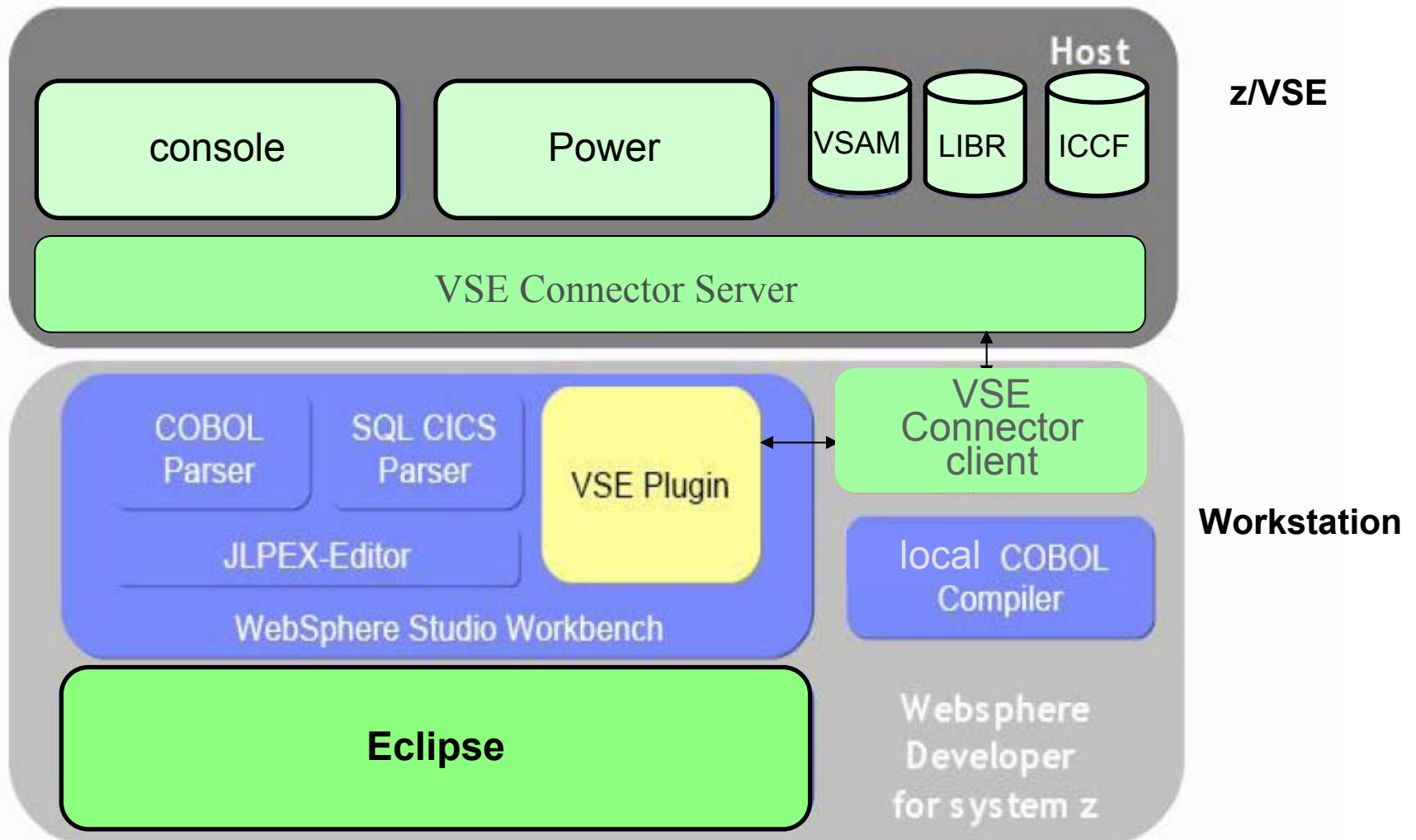
RDz functions for z/VSE and z/OS development

- **Enhanced Eclipse tools with mainframe development functions**
  - special editor functions for mainframe languages
  - local COBOL compiler
  - support for COBOL, ASM, PL/I, C
  - editor for CICS BMS maps
  - support for SQL generation
  - functions for remote processing and mainframe deployment

- **Integrated test environment**
  - full functional test within the development environment
  - debug possibility via z/VSE emulation window

RDz Development Process

1

Check Out/
Load File

Repository

System z

SQL/CICS Pre-
Processor

2

Full Parse
Highlight

Language
Compiler

8

7

Build Remote

Error Feedback

3

Edit

Errors

Remote Debug

4

Increm.Parse
Highlight/
Code Assist

6

Syntax Errors

RDz

5

Syntax Check

Local Build
and Debug
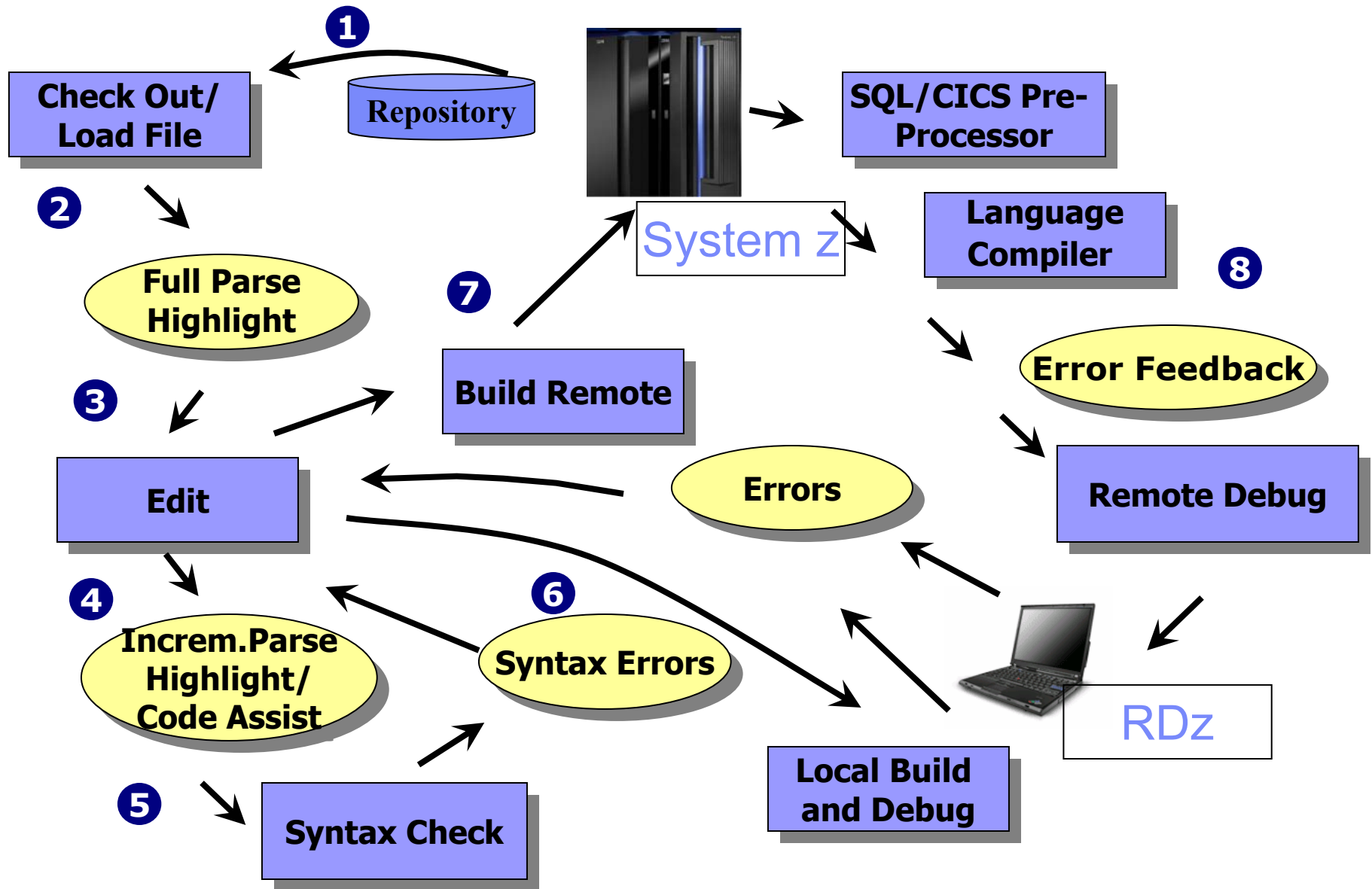
(1) Development of COBOL applications in RDz
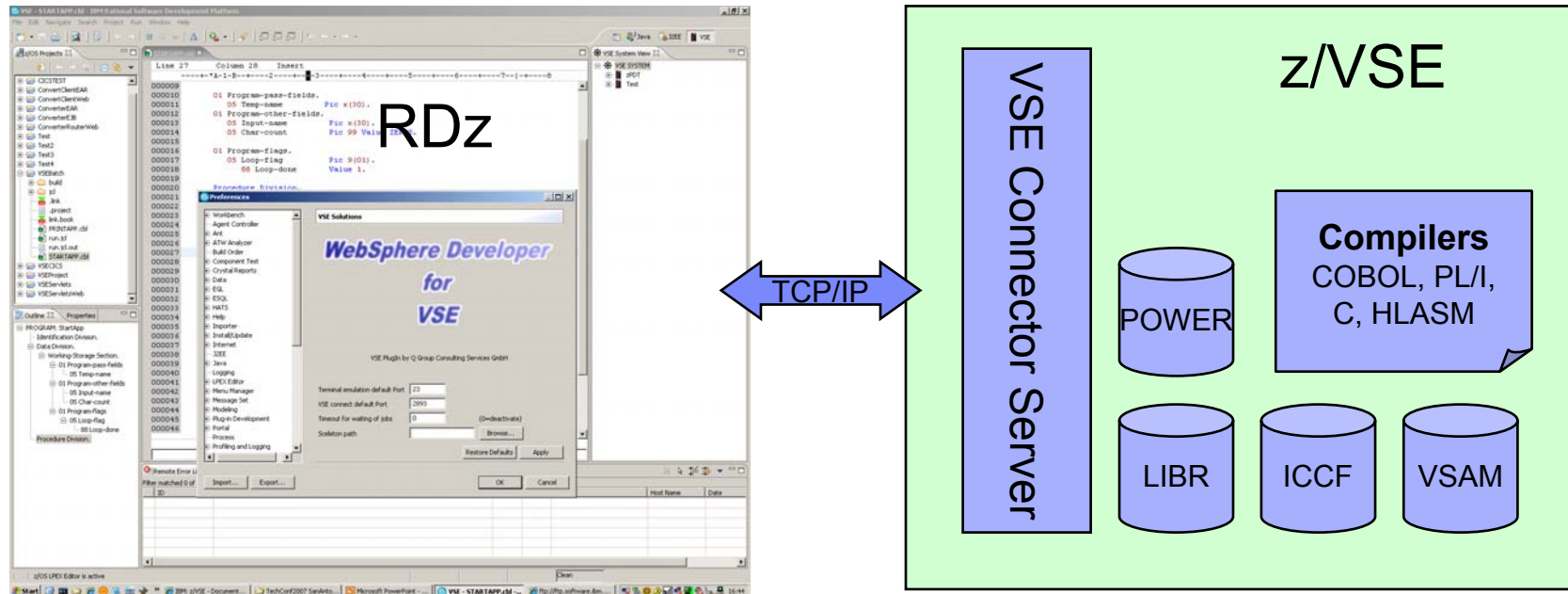
- **Development of COBOL**
    - **- batch and CICS application**
  - Source code editing/checking
  - Access to z/VSE within the tool (console and 3270 access)
  - Compile, Link and error feedback from z/VSE

- **Additional supported languages: PL/I, ASM, C, BSM Maps**

Rational Developer (RDz) in z/VSE perspective

Rational Developer (RDz) in z/VSE perspective

For a live demo of these functions, join the next LVC on March 27, 2008

Develop a z/VSE project

COBOL Syntax checking and highlighting

z/VSE local and remote Compile

Eclipse – the open Standard for application development

WDz / RDz ATW

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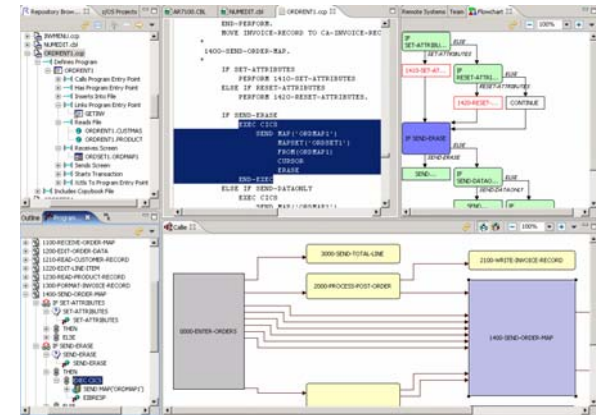# (2) Analysis of applications and workflow

(ATW) Asset Transformation Workbench Analyzer for Eclipse

- **Program analysis**
  - Program understanding: structure, relationships, logic flow
  - Data impact analysis: within and between programs

- **Find code patterns and anti-patterns**
  - Measure complexity
  - uses the source code in the central repository

- **Integrated with WebSphere Developer for System z (WDz)**
  - Adds ATW perspective to WDz
  - Synchronized with the LPEX editor in WDz

- **Built on the technology of Asset Transformation Workbench**
  - A core set of developer-oriented analysis tools
  - Can populate, share, or use an existing ATW repository

Multiple synchronized views of the program helps developers to zero in on the code that matters
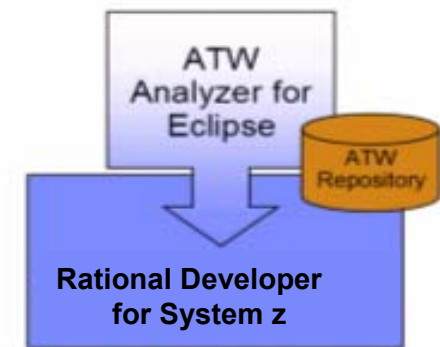
ATW Analyzer for Eclipse adds five analysis views to Rational Developer for System z

(2) Analysis of applications and workflow (sample)

Eclipse – the open Standard for application development
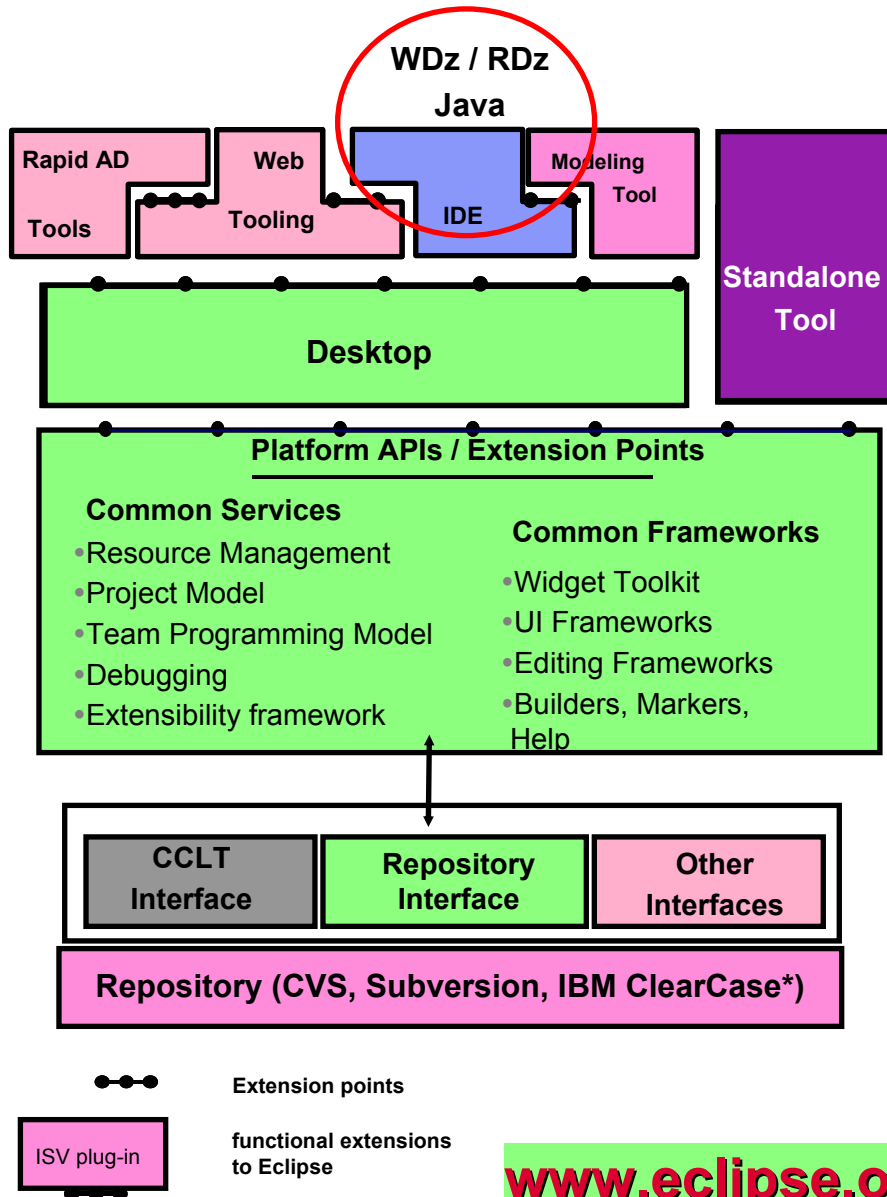
IBM

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WDz / RDz Java IDE

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(3) Development of Java applications in RDz
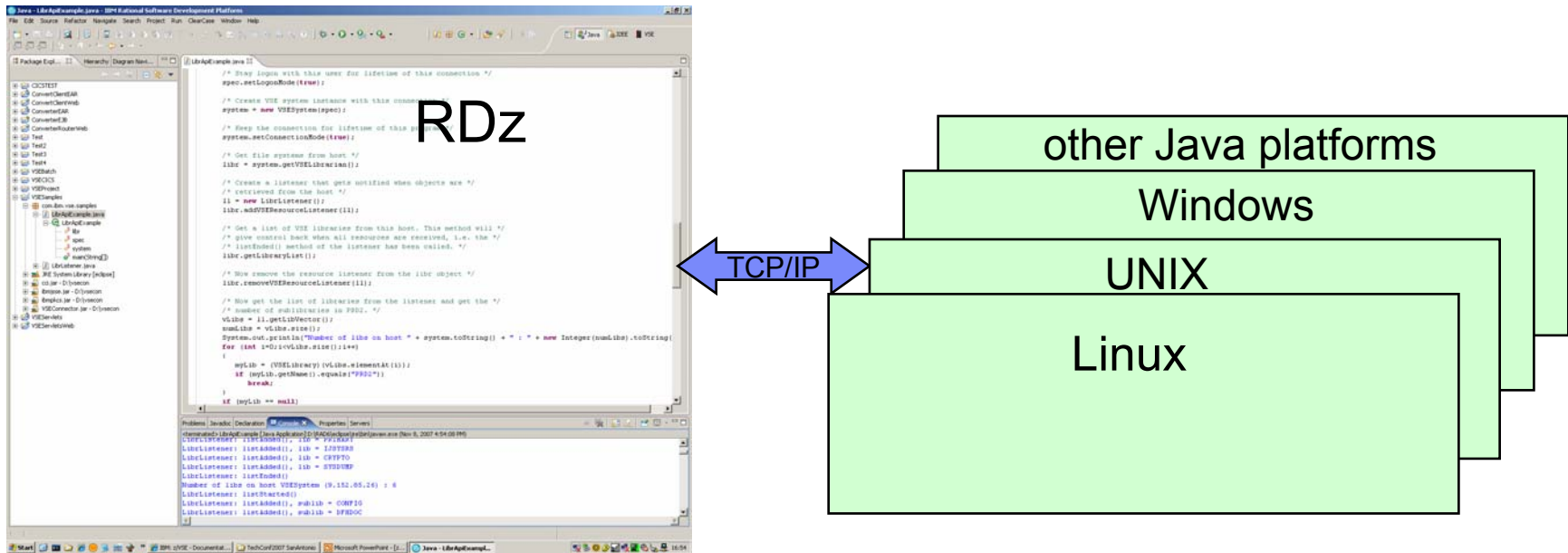
- **Development of native Java applications**
  - for systems like UNIX, Linux, Windows or other Java platforms
  - Edit, compile and Build
  - Test the Java application in the integrated WebSphere test environment and access z/VSE resources
  - additional supported languages are C, C++, REXX
- **Development of Java applications to access z/VSE resources**
  - use of z/VSE Java-Based Connectors
  - develop SOA components to access z/VSE services

Conclusion: Development for all platforms with one tool set

- **A modern tool set to support z/VSE development and maintenance**

  – modern editor for enhanced productivity

  – tools to analyse and optimize existent applications and workflow

- **Common framework for enterprise development**

  – standard for all developers

    • example: z/VSE with COBOL, Linux on System z with Java

  – easy skill transfer

- **Open source framework**

  – commonly thought in schools and universities

  – smooth introduction of new developers to the mainframe

Summary

Eclipse – an open Integrated Development Environment for the enterprise

Java
C++
Visual …

Internet

COBOL
PL/I
Assembler

Rational
Developer
for
System z

Central
Code Repository
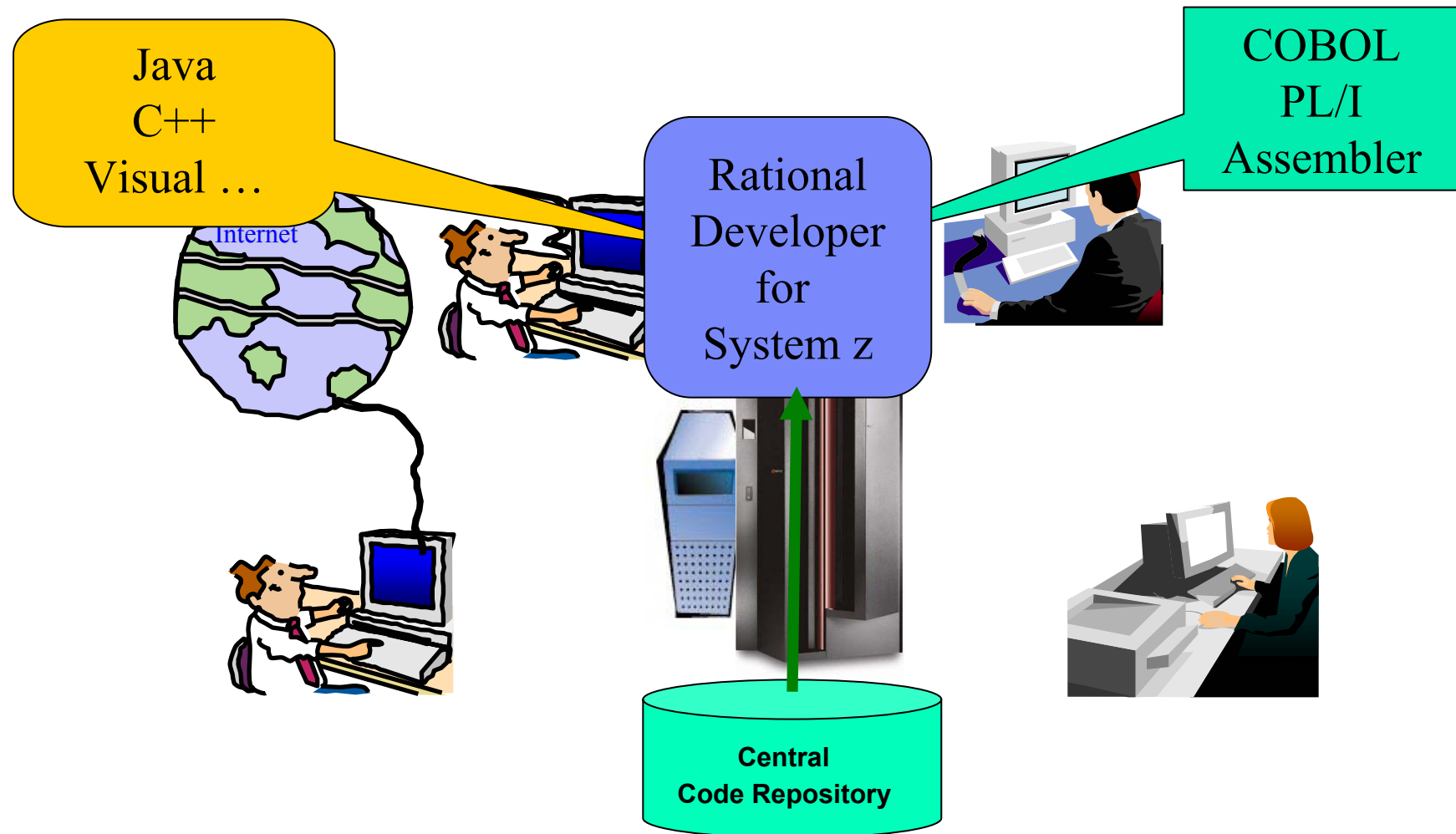
More Details
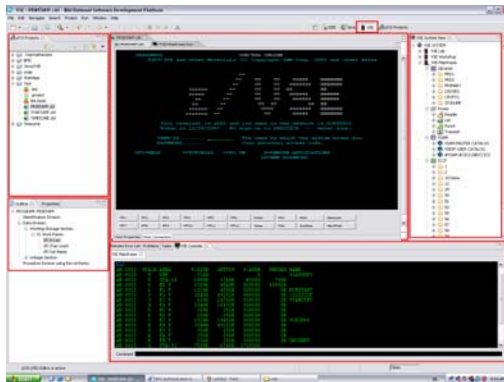
- **Live Virtual Classes**
  - Date: February 21, March 27, 2008
  - Topic: Life Demo of Development for z/VSE
    with WDz / RDz

- **Development sessions at the:**
  WAVV Conference
  - Date: April 18-22, 2008
  - Location: Chattanooga, TN, Marriott Hotel

  - Details on Application Development
  - Demos at our z/VSE booth

z/VSE Additional Information

- z/VSE Home Page

    http://www.ibm.com/servers/eserver/zseries/zvse/

- z/VSE Solutions and Utilities

    http://www-1.ibm.com/servers/eserver/zseries/zvse/solutions/

- WDz

    http://www.ibm.com/software/awdtools/wdzseries/

- WDz Plug-In for VSE

    http://www.qgrp.de/index.php?show=produkte&id=1&detail=wdz

Redbooks

- e-business Solutions for VSE/ESA   SG24-5662

- e-business Connectivity for VSE/ESA   SG24-5950

- CICS Transaction Server for VSE/ESA
    CICS Web Support   SG24-5997

- Handbook For WebSphere (Connectors to z/OS and VSE)   SG24-7042

We appreciate your comments on z/VSE: zvse@de.ibm.com