



Modern Eclipse based Development Environments for z/VSE

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IBM Germany

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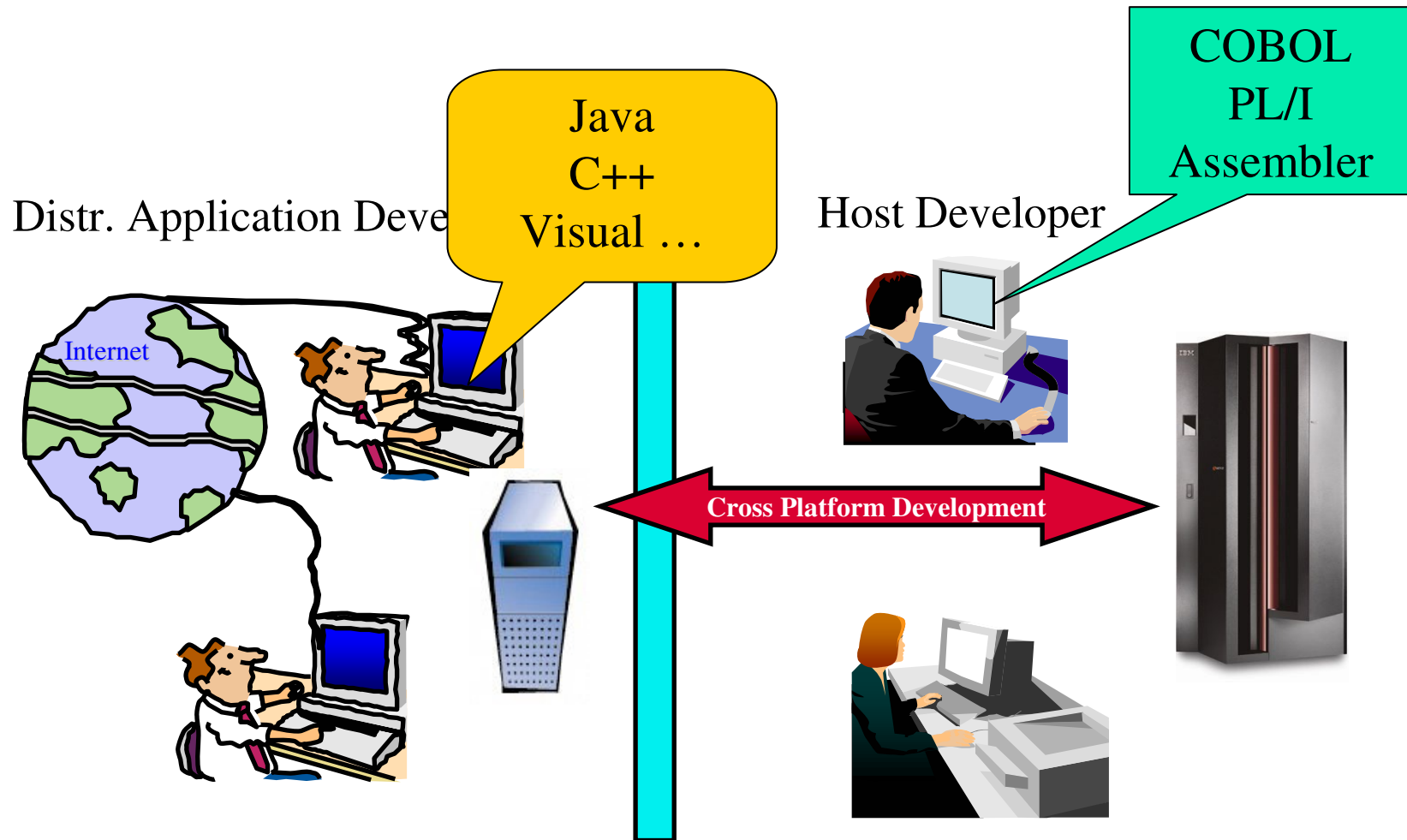
Development objectives !!!

- 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

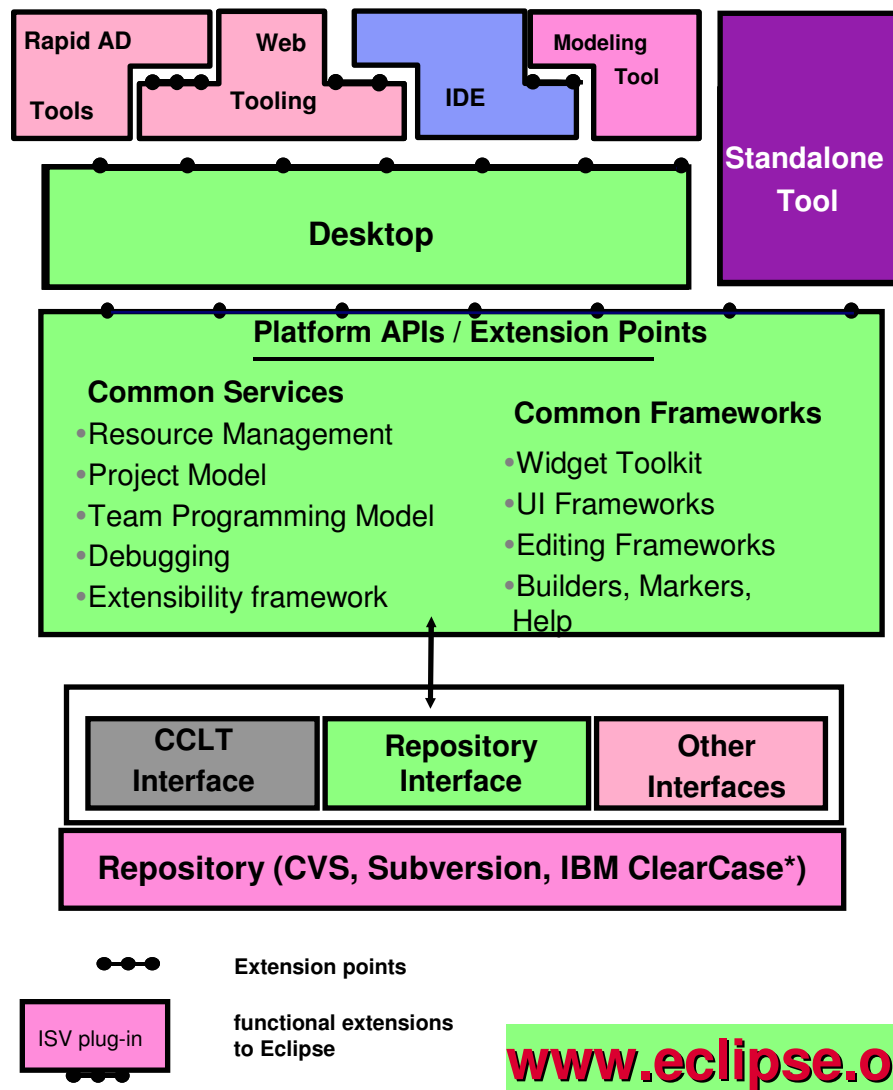
- Develop for multiple platforms
 - common framework for the enterprise instead of multiple unique platform dependent tools
 - same basic tool set for open systems and mainframe

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

'Distributed' Development Landscape...



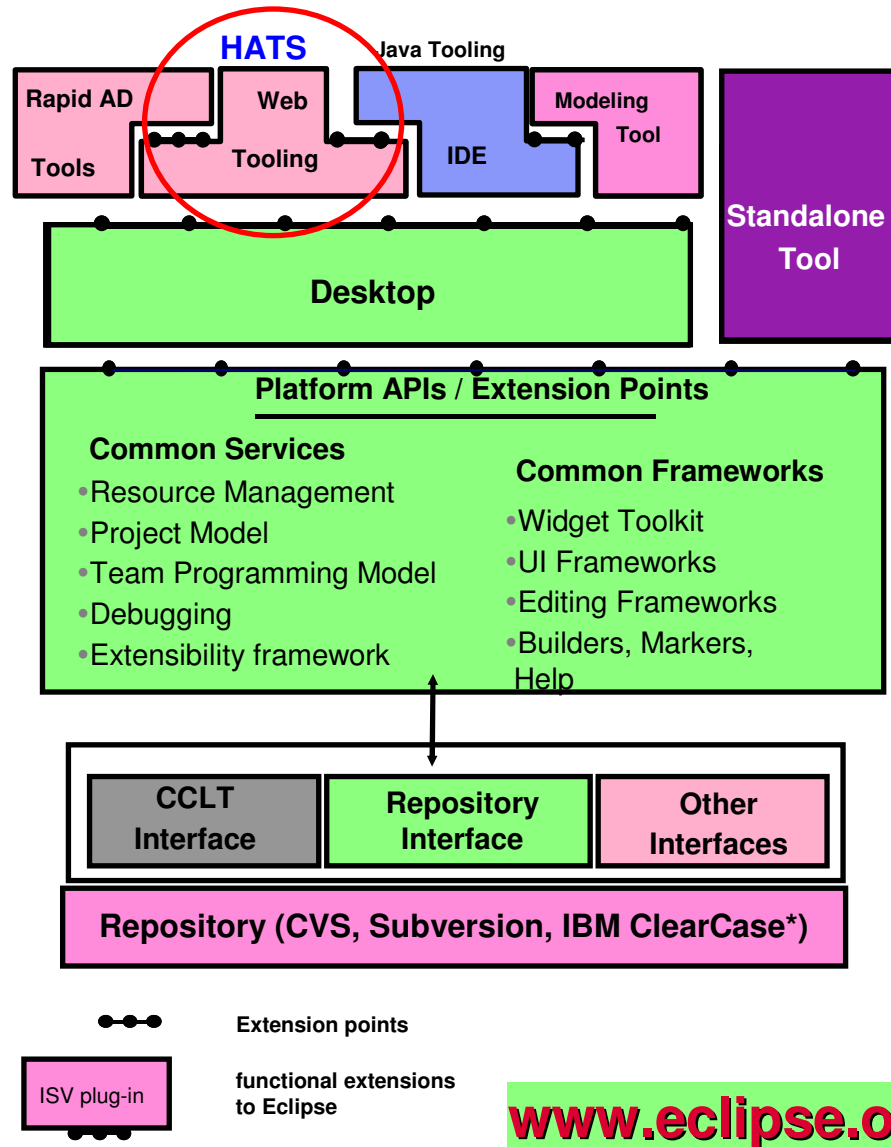
Eclipse – the open Standard for application development



What is Eclipse about:

- Open source development framework
 - with modern Editors
 - syntax help & check
 - semantic check
- Centralized source code maintenance
 - entire source code in central Repository
 - cross platform project administration
- Versioning software interface
 - CVS, Subversion, or IBM ClearCase
 - automatic Workgroup-control
 - i.e. development groups, system group
- Open for ISVs development Plug-Ins
 - **Integrated Development Environments (IDE)**
 - for System z (RDz)
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 - Analyze the applications and workflows with graphical correlations
 - IBM HATS Development Plug-In
 - develop new front-ends to 3270 applications
 - IBM EGL development for z/VSE (RBD)
 - follow-on to Visual Age Generator

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www.eclipse.org

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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.

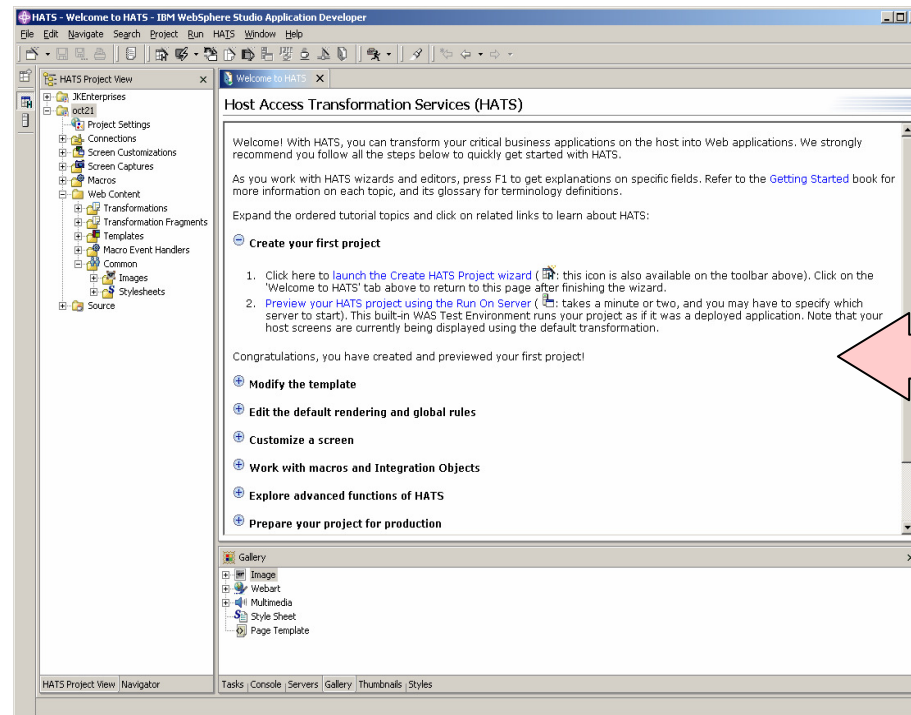
The image illustrates the Host Access Transformation Server (HATS) in action. It shows two windows side-by-side. The left window is a terminal emulator displaying a green-screen style report for 'JK Enterprises'. The report lists various sports equipment items with their part numbers and names. The right window is a Microsoft Internet Explorer browser displaying the transformed web application. The web interface includes a header with the company name 'JK Enterprises', a navigation menu, and a main content area with several sections: 'Information on JK Enterprises', 'Inventory Table' (a table listing items and stock), 'Inventory Graph' (a bar chart showing stock levels), and 'Delivery Schedule' (a calendar for August 2002). The browser address bar shows the URL 'http://localhost:8080/seriesd/hats'.

Benefit: Easily extend existing applications to the web

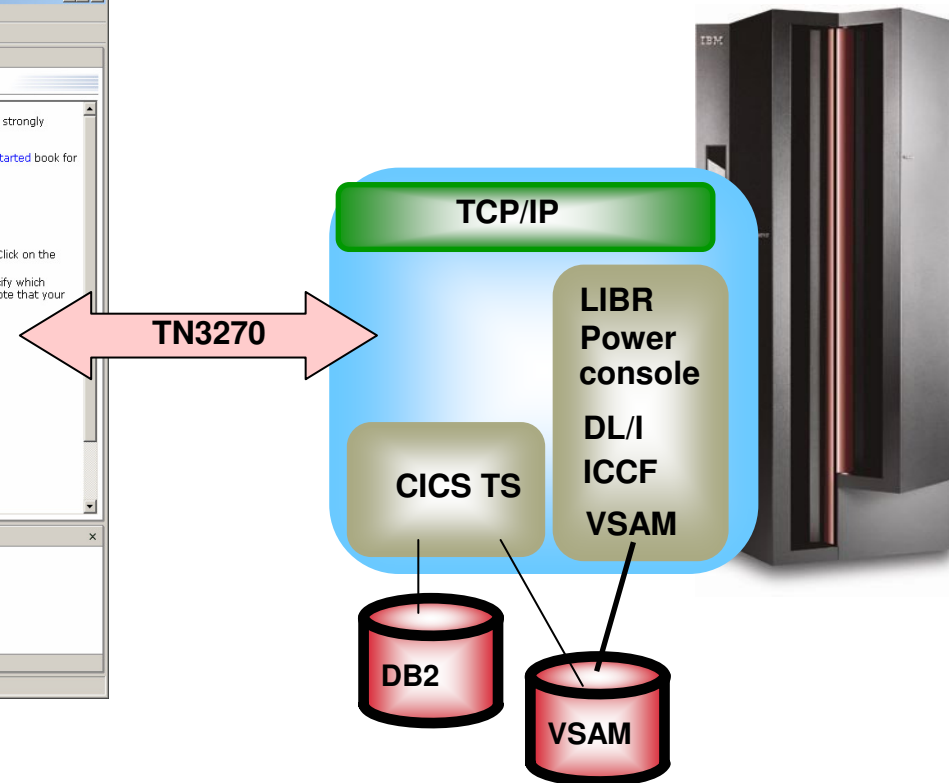
Modernize Existing Applications with HATS

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

Rational Application Development + HATS Plug-In



z/VSE Server



- **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

```

HodConn:localhost:localhost:server1:ubsdemo.ear#1
SC4103      Check Entitlement by Customer number
           5/16/02  10:13:31

Support Center/400 library . . . . . DEMOBOX20

Type choices, press Enter.

Customer number . . . . .
Location code . . . . .
Support Center/400 problem number . . . . .
Associated problem . . . . .

F2=Search Customer database  F3=Exit  F6=Create profile  F10=Messages
F12=Cancel                  F14=Inventory search  F20=Support services
    
```

```

HodConn:localhost:localhost:server1:ubsdemo.ear#5
200      Search Results

For a record, press a function key -or- type an Action Code and press Enter.
A=Address  B=Backup  C=C-list  D=Dept title  F=Feedback
I=Show Ids  J=JobResp (press)  K=Calendar  L=Local data  O=Update/Open
P=Phone  R=Pages-To-All  T=To-All  U=Pages-Chain  W=Show record

Columns 42 to 81 of 69
Line# 1 to 7 of 69
AREA04 AREALL ASSIGNED ATLANTA ATLA00 AUSTIN BETHESDA BOCA BOULDER BURLINGOT
CHARLOTT CHICAGO CT DALA00 DALLAS DAYTON FISHKILL ISSCA00 KP LEX LOTUS LOU002
Name Act Tie-line EmpSt Node User ID Mail
Carter-Willis, A. P. (Antoinette) 596-3739 Reg IBMUSM25 ACARTERW WEZA1
Willis Jr, Albert F. (Al) 799-7224 Reg IBMUSM24 AFWILLIS B-HAM
Willis, Al L. 293-2768 Mgr IBMUSM08 ALW883 P524
Willis, Andre R. (Dre) 888-5081 Sup IBMUSM22 AWILLIS H07R1
Willis, Andy B. 419-1518 Reg IBMUSM49 ANDYWILL 022D
Willis, Art *CONTRACTOR* 000-0000 Contr IBMUSM38 AWILLIO B676/C
Willis, Arthur W. (Wayne) Reg IBMUS WILLISW na

Command ===>
F12=Help  F2=Set  F3=Edit  F4=Send note  F5=Pages-To-All  F6=Show dept/team
F7=Backward  F8=Forward  F9=Command  F10=Actions  F11=Dist list  F12=Cancel
    
```

```

09/23/2003 02:21 PM <DIR> Wwillisac
11/28/2003 02:22 PM <DIR>
01/05/2004 09:24 AM <DIR> wslckh
03/03/2004 10:40 AM <DIR> NIND008
10/16/2003 09:26 AM <DIR> win_jce_121
01/05/2004 04:42 PM <DIR> wad51
04/23/2003 05:21 AM <DIR> wpxdrive
03/03/2004 10:40 PM 14,496 Mpamin.log
14 File(s) 4,175,621 bytes
93 Dir(s) 22,888,359,792 bytes free

C:\Documents and Settings\Administrator_
    
```

Market Update

| | | |
|------------|---------|-------|
| Dow Jones | 9959.71 | 37.85 |
| NASDAQ | 1918.26 | 13.61 |
| S&P 500 | 1062.24 | 3.19 |
| 30 Yr Bond | 5.191 | 0.04 |

Data from 5250 Source

SC4103 Check Entitlement by Customer number 5/16/02 10:13:31

Support Center/400 library DEMOBOX20

Type choices, press Enter.

Customer number

Location code

Support Center/400 problem number

Associated problem

Login

UserName

Password

Go

→ First Time

→ Enroll

→ Tour

Highlights

- Think Year-End Planning
- JK Funds reports third quarter net profit of \$2.243 million
- Read the NASD's June 25, 2003 Investor Alert Regarding Class B Mutual Fund Shares
- Read the NASD's Investor Alert Regarding Mutual Fund Breakpoint Discounts
- View Current CD Rates

Career Opportunities

- Financial Advisor Careers
- Career Opportunities

Data from 3270 Host

| Name | Phone | Type | Node | User | Mail |
|-----------------------------------|----------|-------|----------|----------|--------|
| Carter-Willis, A. P. (Antoinette) | 596-3739 | Reg | IBMUSM25 | ACARTERW | WEZA1 |
| Willis Jr, Albert F. (Al) | 799-7224 | Reg | IBMUSM24 | AFWILLIS | B-HAM |
| Willis, Al L. | 293-2768 | Mgr | IBMUSM08 | ALW883 | P524 |
| Willis, Andre R. (Dre) | 888-5081 | Sup | IBMUSM22 | AWILLIS | H07R1 |
| Willis, Andy B. | 419-1518 | Reg | IBMUSM49 | ANDYWILL | 022D |
| Willis, Art *CONTRACTOR* | 000-0000 | Contr | IBMUSM38 | AWILLIO | B676/C |
| Willis, Arthur W. (Wayne) | | Reg | IBMUS | WILLISW | na |

Results from VT Data Source

Query Directory: c:\

93 Dir(s) 22,888,359,792 bytes free

14 File(s) 4,175,691 bytes



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

Oahu

Case Type

Civil

Year

Century

2000's

Case Number

Suffix

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



Start



Pr...

67...

87...

3a...

Ha...

C...

Ca...

Pr...

Se...

C...

ky...

zill...

Ho...

ess

Go

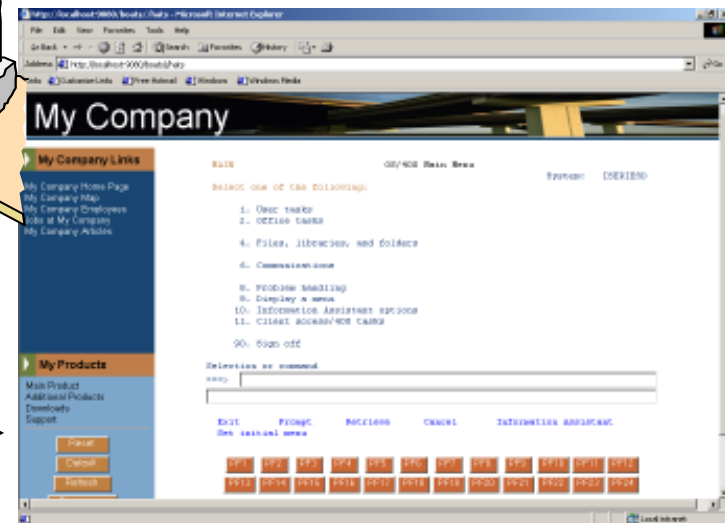
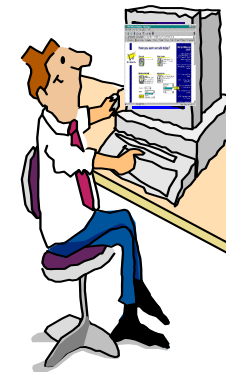
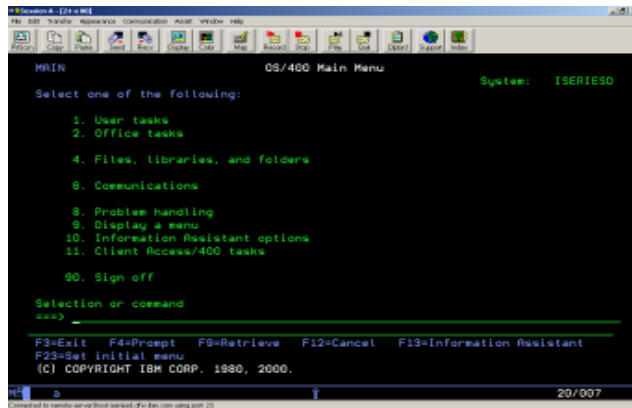
99%

3:16 PM

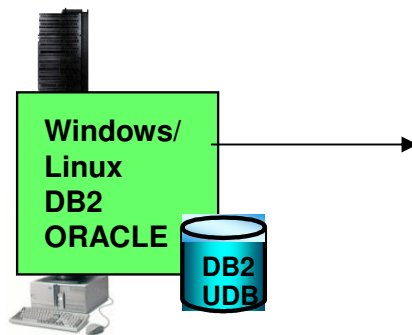
System tray icons: volume, network, etc.

Application Integration with Host Access Transformation Services (HATS)

- Not invasive
- No software download to the client
- Web Services on the fly
- Integration with distributed applications



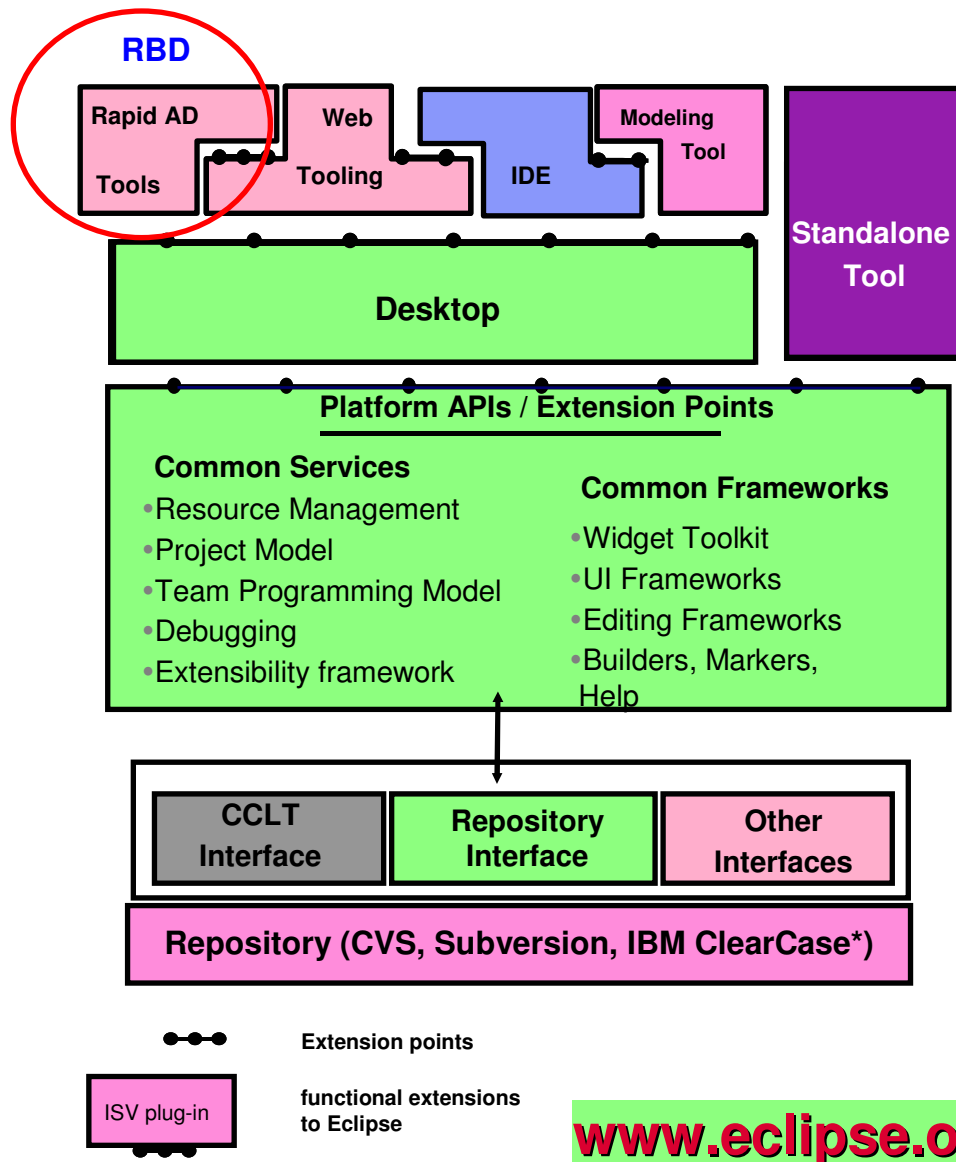
3270 or 5250 data stream



Screen transformation rules running on WebSphere Application Server

HTML in a Browser

Eclipse – the open Standard for application development



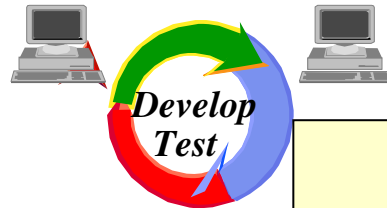
www.eclipse.org

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 - **EGL Plug-In for zVSE**
 - **follow-on to Visual Age Generator**

(2) Cross Platform Solution development Approach with 4GL Language (EGL)

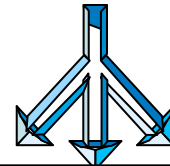
**Rapid
Development**



IBM 4GL history:
CSP (~1981) -> VAGen (~ 1994) -> EGL (~2003)
Migration-Options available ...

Generation

Generate



GUI, Java, HTML, C++, COBOL, PL/I

z/VSE(CICS, Batch)

Execution

Execute



AIX



NT



HP/UX



Solaris



Linux

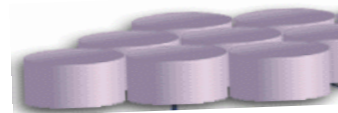


OS/400



z/OS, (CICS, IMS, Batch)

- Multiple platforms
- Client /Server Applications
- Java applets/servlets or standalone
- Multiple database/file support apps

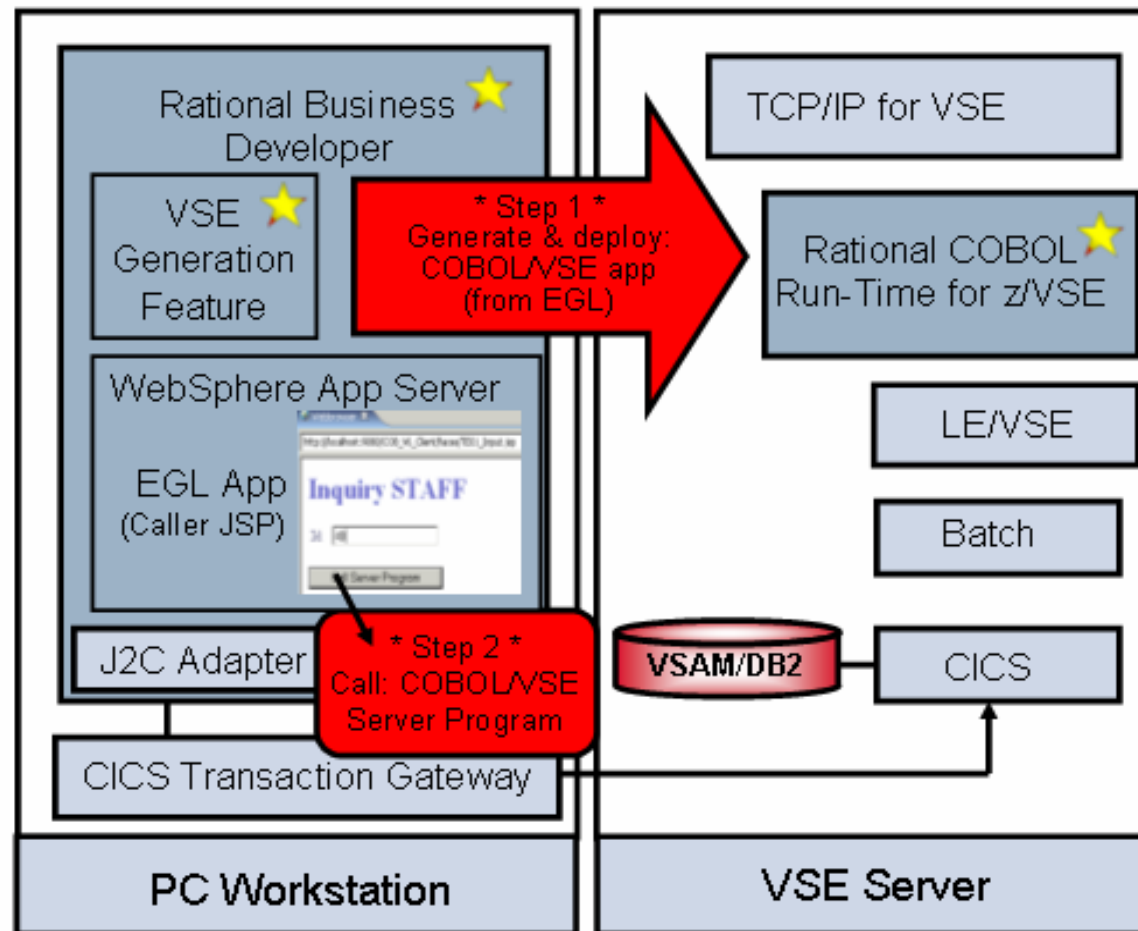


DB2 UDB VSAM ODBC
Oracle DLI, IMS/DB

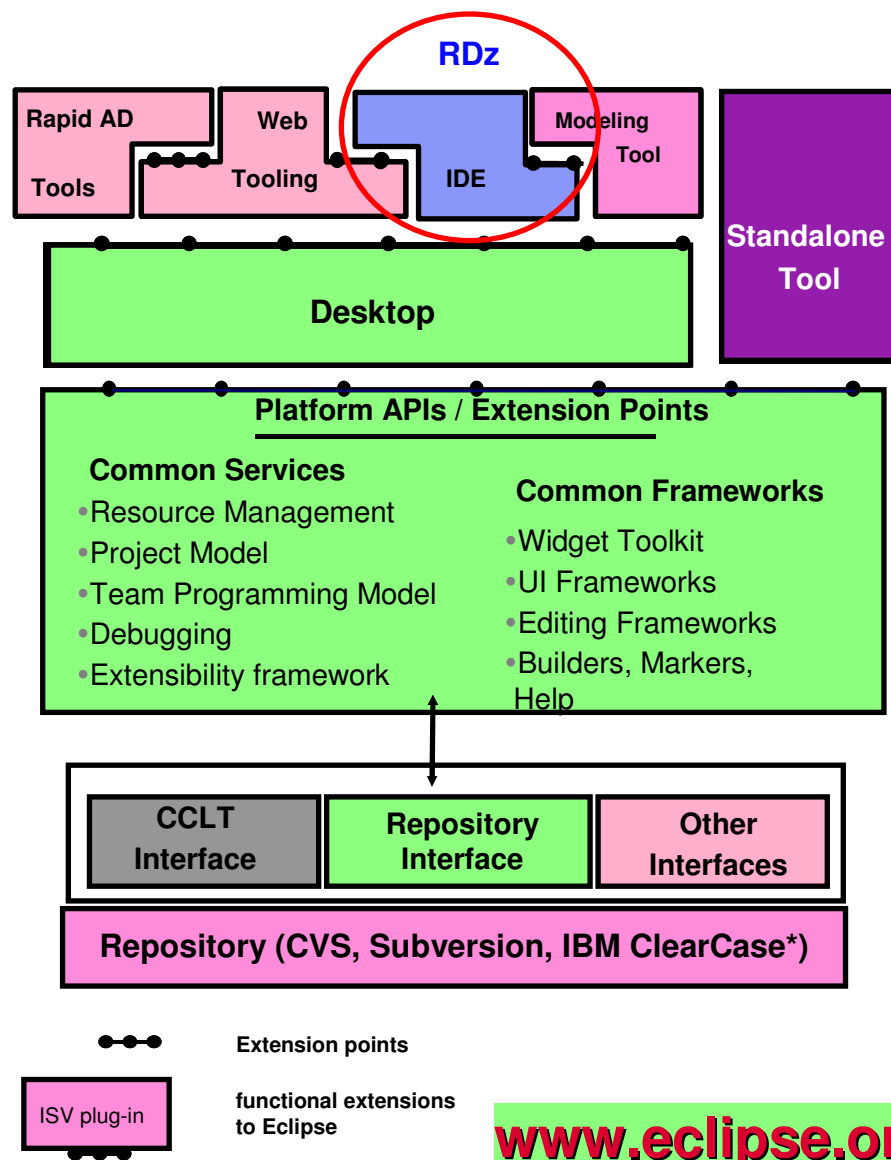
Modern development environment with RBD - IBM Rational Business Developer

- Since December 2008, continued 4GL support for z/VSE is available:
 1. z/VSE host component **IBM Rational COBOL Runtime for z/VSE (V7.5)**
(replaces the Visual Age Generator Server for VSE)
 2. PC tool for development: **IBM Rational Business Developer (RBD V7.5.1)**
and the associated components
 - **IBM Rational Business Developer Extension for VSE V7.5.1**
 - COBOL Code generation for z/VSE
 - Generation for System z (z/OS)
- J2C-Tools (Java EE Connector)
- **IBM CICS Transaction Gateway (optional – for CICS access only)**

RBD – functional view (Generate COBOL applications on z/VSE using EGL)



Eclipse – the open Standard for application development

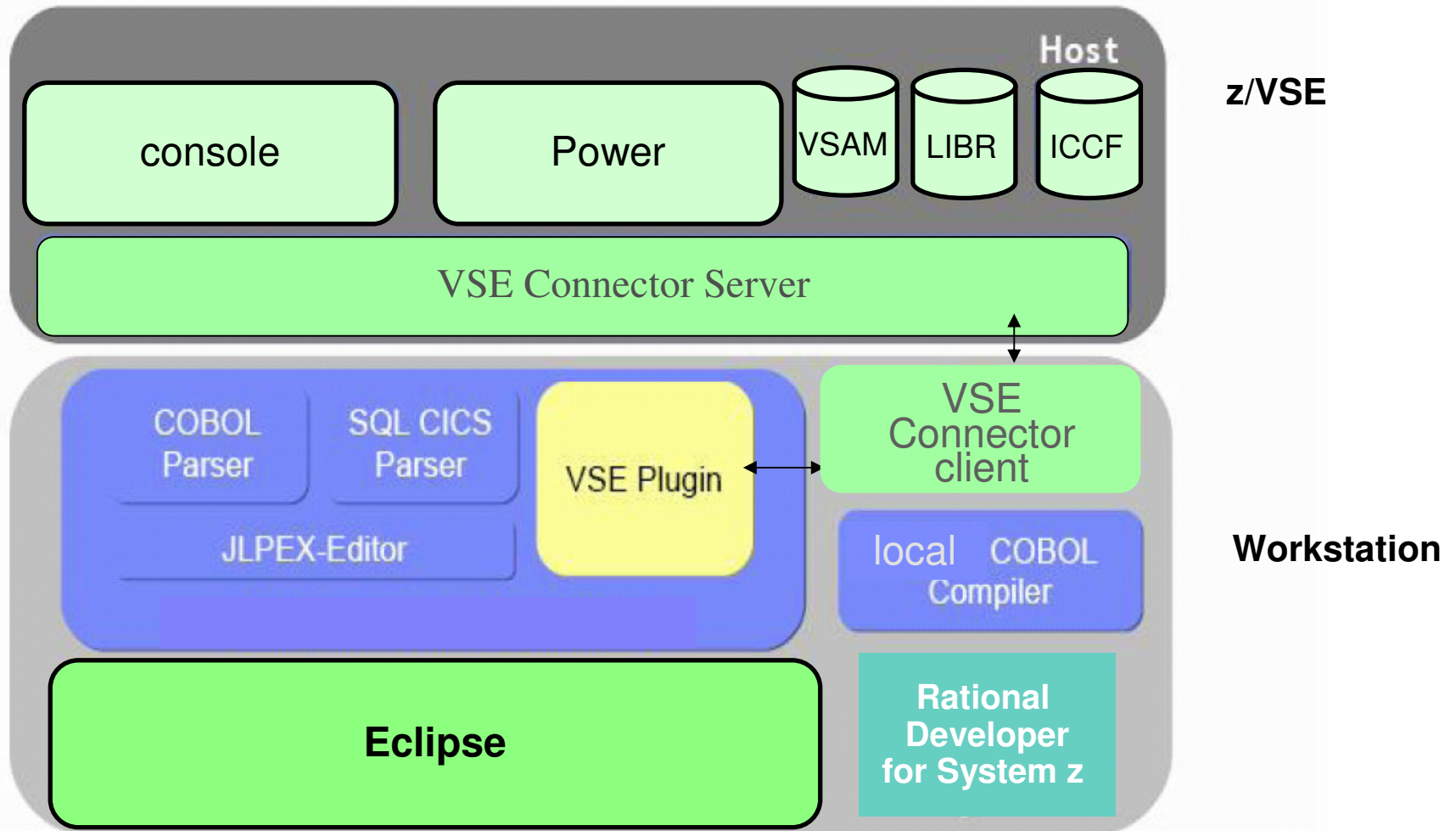


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 - RTW – Rational Trasformation Workbench
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The IBM Development environment for the enterprise
Rational Developer for System z (RDz 7.5)
 with **z/VSE Development Plug-in for RDz 7.5**



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

Rational Developer (RDz) in z/VSE perspective

The screenshot shows the IBM Rational Software Development Platform (RDz) interface for z/VSE. The main editor window displays a COBOL program named PRINTAPP.cbl. The program is divided into sections: Identification Division, Data Division, Working-Storage Section, Linkage Section, and Procedure Division. The Procedure Division contains logic for moving data and calculating character counts. Annotations 1 through 6 highlight specific features: 1. Perspective (the overall window), 2. View (the VSE System View tree on the right), 3. Projects (the z/OS Projects tree on the left), 4. Editor (the central code editor), 5. Outline View (the Outline and Properties windows at the bottom left), and 6. VSE Console (the VSE Console window at the bottom right showing a MAP command output).

1. Perspective

2. View

3. Projects

4. Editor

5. Outline View

6. VSE Console

```
Line 7      Column 1      Insert
-----*A-1-B-----2-----3-----4-----5-----6-----7-----8
000001      Identification Division.
000002      Program-ID.  PRINTAPP.
000003
000004      Data Division.
000005      Working-Storage Section.
000006      01 Work-Parms.
000007          05 In-Len          PIC S9(4) BINARY.
000008          05 Char-count      Pic 99 Value ZEROS.
000009          05 Out-Name       PIC X(100).
000010
000011      Linkage Section.
000012      01 Recvd-Parms.
000013          05 In-name         Pic x(30).
000014
000015
000016      Procedure Division using Recvd-Parms.
000017          Move spaces to Out-Name.
000018
000019          Move 0 to Char-count
000020          Inspect Function Reverse (In-Name)
000021          Tallying Char-count For Leading Spaces
000022          Compute In-Len = 30 - Char-count
000023
000024          Move 'Thanks to ' to Out-Name (1:10).
000025          Move In-name (1:In-Len) to Out-Name (11:In-Len)
000026          Move ' for succeeding!' to Out-Name ((11 + In-Len):16).
000027          Display Out-name.
000028          Goback.
000029
The quick mark was set at the cursor location.
```

| MAP | SPACE | AREA | V-SIZE | GETVIS | V-ADDR | UNUSED | NAME |
|---------|-------|--------|--------|--------|---------|--------|-------------|
| AR 0015 | S | SUP | 716K | | 0 | | \$\$A\$SUPI |
| AR 0015 | S | SVA-24 | 1888K | 1748K | B3000 | 768K | |
| AR 0015 | 0 | BG V | 1280K | 4864K | 500000 | 45056K | |
| AR 0015 | 1 | F1 V | 1024K | 4096K | 500000 | OK | POWSTART |
| AR 0015 | 2 | F2 V | 2048K | 49152K | 500000 | OK | CICSICCF |
| AR 0015 | 3 | F3 V | 600K | 14760K | 500000 | OK | VTANSTRT |
| AR 0015 | 4 | F4 V | 2048K | 18432K | 500000 | OK | |
| AR 0015 | 5 | F5 V | 768K | 256K | 500000 | OK | |
| AR 0015 | 6 | F6 V | 256K | 256K | 500000 | OK | |
| AR 0015 | 7 | F7 V | 1024K | 19456K | 500000 | OK | TCPIP00 |
| AR 0015 | 8 | F8 V | 2048K | 49152K | 500000 | OK | |
| AR 0015 | 9 | F9 V | 256K | 256K | 500000 | OK | |
| AR 0015 | A | FA V | 256K | 256K | 500000 | OK | SECSESV |
| AR 0015 | B | FB V | 256K | 256K | 500000 | OK | |
| AR 0015 | S | SVA-31 | 7588K | 6748K | 3700000 | | |

Rational Developer (RDz) in z/VSE perspective

The screenshot displays the IBM Rational Software Development Platform interface for z/VSE. The main window shows a terminal window with a z/VSE login prompt and a system view on the right. Below the terminal is a VSE console window displaying a memory map (MAP) table. Callouts in ovals identify key components: 1.Perspective (the main window), 2.View (the system view), 3.Projects (the project browser), 4.Outline View (the program outline), 5.VSE Terminal (the terminal window), 6.VSE Console (the console window), and 7.VSE Terminal (the terminal window).

1.Perspective

2.View

3.Projects

4.Outline View

5.VSE Terminal

6.VSE Console

7.VSE Terminal

```
MAP
AR 0015 SPACE AREA      V-SIZE  GETVIS  V-ADDR  UNUSED  NAME
AR 0015 S  SUP          716K      0          0          $$$SUI
AR 0015 S  SWA-24      1888K      1748K    B3000    768K
AR 0015 0  BG V        1280K    4864K    500000   45056K
AR 0015 1  F1 V        1024K    4096K    500000   0K
AR 0015 2  F2 V        2048K    49152K   500000   0K
AR 0015 3  F3 V         600K    14760K   500000   0K
AR 0015 4  F4 V        2048K    18432K   500000   0K
AR 0015 5  F5 V         768K     256K    500000   0K
AR 0015 6  F6 V         256K     256K    500000   0K
AR 0015 7  F7 V        1024K    19456K   500000   0K
AR 0015 8  F8 V        2048K    49152K   500000   0K
AR 0015 9  F9 V         256K     256K    500000   0K
AR 0015 A  FA V         256K     256K    500000   0K
AR 0015 B  FB V         256K     256K    500000   0K
AR 0015 S  SWA-31      7588K    6748K    3700000  0K
AR 0015 S  SECSEVR     256K     256K    500000   0K
```

■ Develop a z/VSE project

The screenshot displays the VSE - DEMOVSE.hce application interface. The main window shows a terminal window with the following text:

```

IESADM001          VSE/ESA ONLINE
                    5609-2V3 and Other Materials (C) Copyright IBM Corp. 2004 and other dates

                    ++
                    ++  VV  VV  SSSSS  EEEEEEE
                    ++  VV  VV  SSSSSSS  EEEEEEE
                    ***** ++  VV  VV  SS  EE
                    ***** ++  VV  VV  SSSSSS  EEEEEEE
                    **  ++  VV  VV  SSSSSS  EEEEEEE
                    **  ++  VV  VV  SS  EE
                    ***** ++  VVV  SSSSSS  EEEEEEE
                    ***** ++  VV  SSSSS  EEEEEEE

Your terminal is A001 and its name in the network is D1080001
Today is 01/26/2007 To sign on to DEBCCICS -- enter your:

USER-ID..... = _____ The name by which the system knows you.
PASSWORD..... Your personal access code.

PF1=HELP      2=TUTORIAL      4=REMOTE APPLICATIONS
                          10=NEW PASSWORD
USE ONLY THE ENTER KEY OR ONE OF THE KEYS LISTED ABOVE.
    
```

A 'New' menu is open, showing 'MVS Project...' and 'VSE Project' options. The right sidebar shows a 'VSE System View' tree with folders like 'DEMOMOVE', 'Power', and 'VSAM'. The bottom of the window shows a Windows taskbar with the application running.

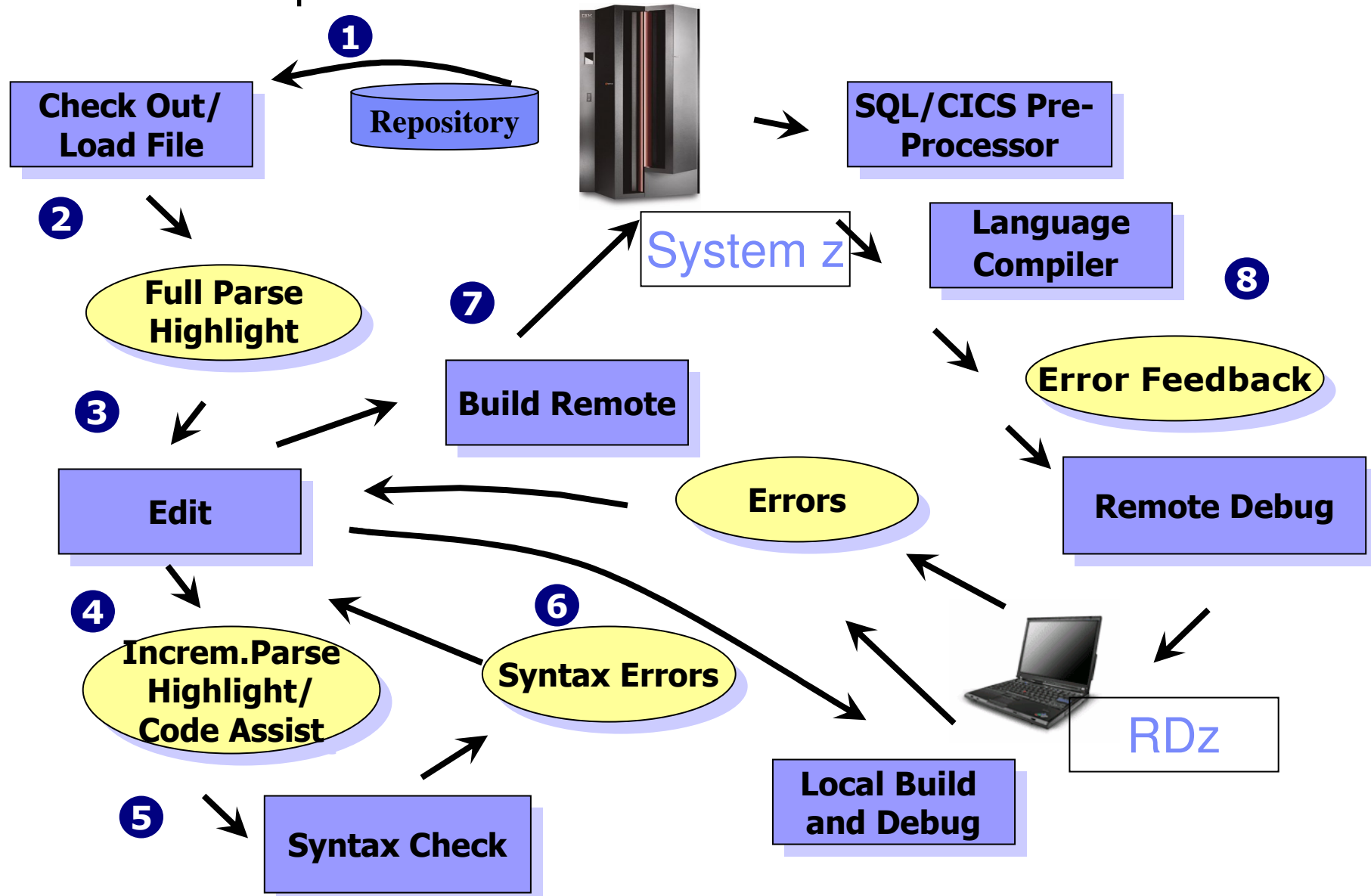
■ COBOL Syntax checking and highlighting

The screenshot shows the VSE IDE interface with the following components:

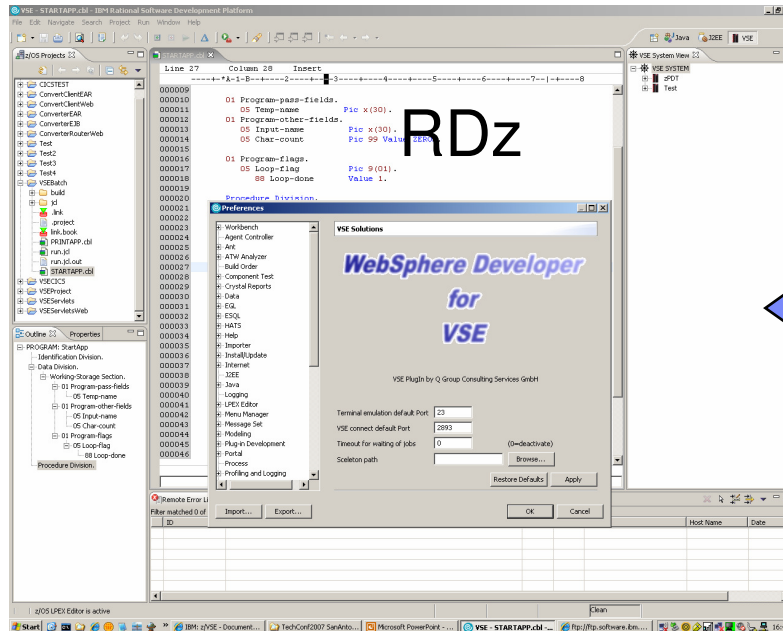
- File Explorer:** Shows a project structure with folders like .TmpVseRemote, DEMOVSE, build, BuildOutput, jcl, .project, and files CEEIGZCT.cbl and IGZTMATH.cbl.
- Code Editor:** Displays COBOL code for IGZTMATH.cbl. Line 40 contains a VALUE statement with a typo: `VALUE 'DIVI'...`. The error is highlighted in red.
- Remote Error List:** A table showing error messages:

| ID | Message | Se... | Line | Location | Host Name | Date |
|-----------|---|-------|------|----------------------|-----------|-------------------------|
| IGYPS2106 | IGYPS2106-S "DIVI" was found in the "VALUE" stat... | 2 | 40 | /DEMOVSE/IGZTMATH... | Local | Jan 26, 2007 4:39:27 PM |
| IGYOS4027 | THE SYSTEM OPTION "SYM" IS INTERPRETED AS "... | 0 | -1 | IGZTMATH.C | DEMOVSE | Jan 26, 2007 4:41:09 PM |
| IGYPS2106 | "DIVI" WAS FOUND IN THE "VALUE" STATEMENT. ... | 2 | 40 | IGZTMATH.C | DEMOVSE | Jan 26, 2007 4:41:09 PM |

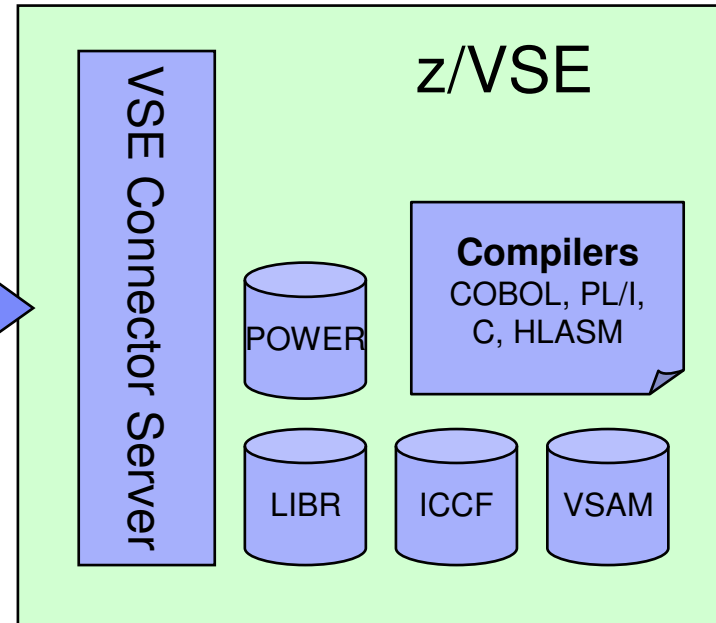
RDz Development Process



(1) Development of COBOL applications in RDz

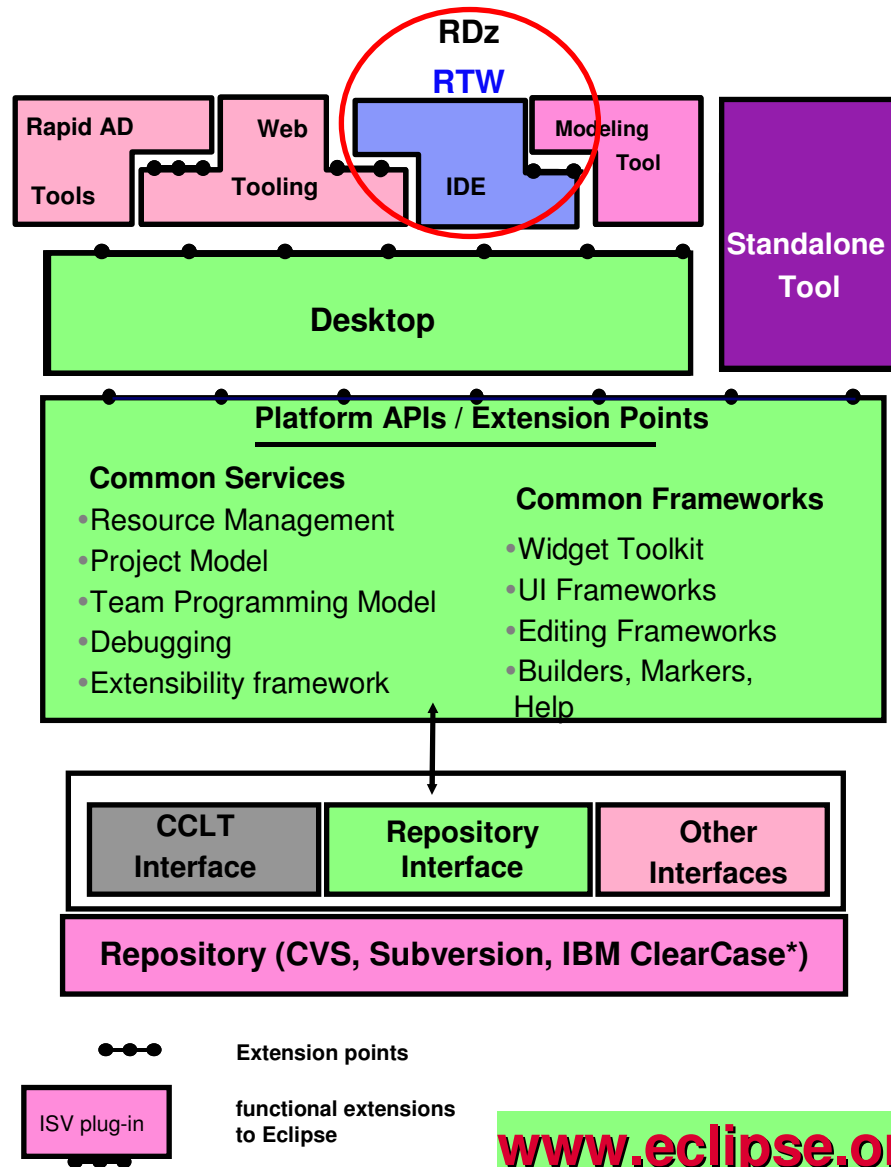


TCP/IP



- 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

Eclipse – the open Standard for application development



www.eclipse.org

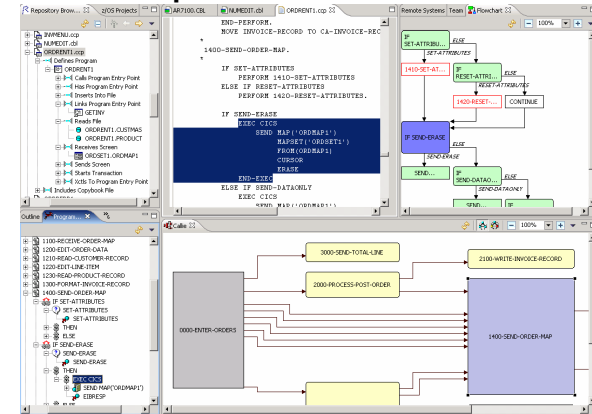
What is Eclipse about:

- Open source development framework
 - with modern Editors
 - syntax help & check
 - semantic check
- Centralized source code maintenance
 - entire source code in central Repository
 - cross platform project administration
- Versioning software interface
 - CVS, Subversion, or IBM ClearCase
 - automatic Workgroup-control
 - i.e. development groups, system group
- **Open for ISVs development Plug-Ins**
 - **Integrated Development Environments (IDE)**
 - for System z (RDz)
 - for Java, COBOL, PL/I, ASM,C
 - **Application analysis and optimization**
 - RTW – Rational Transformation Workbench, to analyze applications and present them in graphical correlations
 - IBM HATS Development Plug-In
 - develop new front-ends to 3270 apps.
 - IBM EGL development for z/VSE (RBD)
 - follow-on to Visual Age Generator

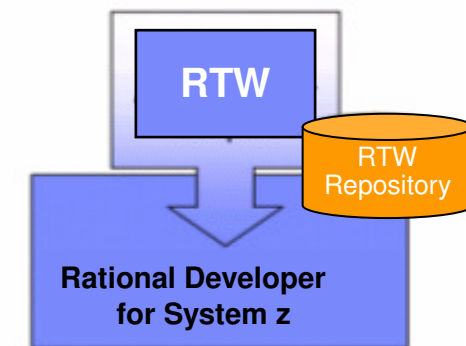
(2) Analysis of applications and workflow

(RTW) Rational 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 (RDz)
 - Adds RTW perspective to RDz
 - Synchronized with the LPEX editor in RDz
- Built on the technology of Asset Transformation Workbench
 - A core set of developer-oriented analysis tools
 - Can populate, share, or use an existing RTW repository



Multiple synchronized views of the program helps developers to zero in on the code that matters



RTW Analyzer for Eclipse adds five analysis views to Rational Developer for System z

(2) Analysis of applications and workflow (sample)

Rational Transformation Workbench Analyzer for Eclipse

The screenshot displays the Rational Transformation Workbench Analyzer for Eclipse interface, which is used for analyzing and transforming code. It is divided into several panes:

- Repository Browser (Top Left):** Shows a project tree for 'ORDRENT1.ccp' containing various components like 'ORDRENT1', 'GETINW', and 'ORDRENT1.CUSTOMAS'.
- Code Editor (Top Middle):** Displays COBOL source code for 'ORDRENT1.ccp'. A section of the code is highlighted in blue:

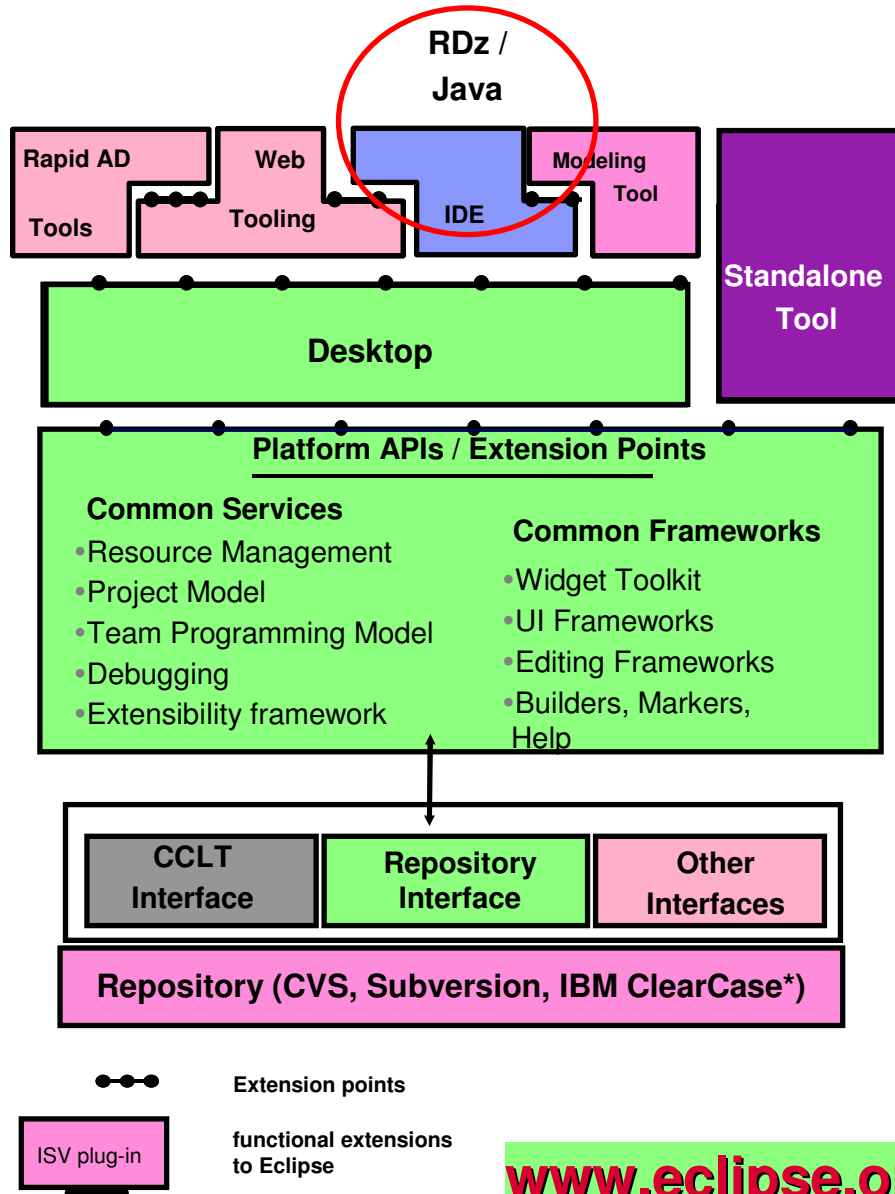

```

                EXEC CICS
                SEND MAP('ORDMAP1')
                MAPSET('ORDSET1')
                FROM(ORDMAP1)
                CURSOR
                ERASE
            END-EXEC
            
```
- Flowchart (Top Right):** A control flow graph showing logic for handling 'SET-ATTRIBUTES', 'RESET-ATTRIBUTES', and 'SEND-ERASE' operations. It includes decision nodes like 'IF SET-ATTRIBU...', 'IF RESET-ATTRI...', and 'IF SEND-ERASE', leading to actions like '1410-SET-AT...', '1420-RESET-...', and 'SEND...'.


```

                graph TD
                A[IF SET-ATTRIBU...] -- SET-ATTRIBUTES --> B[1410-SET-AT...]
                A -- ELSE --> C[IF RESET-ATTRI...]
                C -- RESET-ATTRIBUTES --> D[1420-RESET-...]
                C -- ELSE --> E[CONTINUE]
                B --> F[IF SEND-ERASE]
                D --> F
                F -- SEND-ERASE --> G[SEND...]
                F -- ELSE --> H[IF SEND-DATAO...]
                H -- SEND-DATAONLY --> I[SEND...]
                H -- ELSE --> J[IF]
            
```
- Outline (Bottom Left):** A hierarchical view of the program structure, showing modules like '1100-RECEIVE-ORDER-MAP', '1200-EDIT-ORDER-DATA', and '1400-SEND-ORDER-MAP'. The 'EXEC CICS' block is highlighted in blue.
- Callie (Bottom Right):** A Callie diagram showing the flow of control between modules. A large grey box labeled '0000-ENTER-ORDERS' has arrows pointing to several yellow boxes: '3000-SEND-TOTAL-LINE', '2000-PROCESS-POST-ORDER', and '2100-WRITE-INVOICE-RECORD'. A large blue box labeled '1400-SEND-ORDER-MAP' is also shown, with arrows indicating its interaction with the other modules.

Eclipse – the open Standard for application development

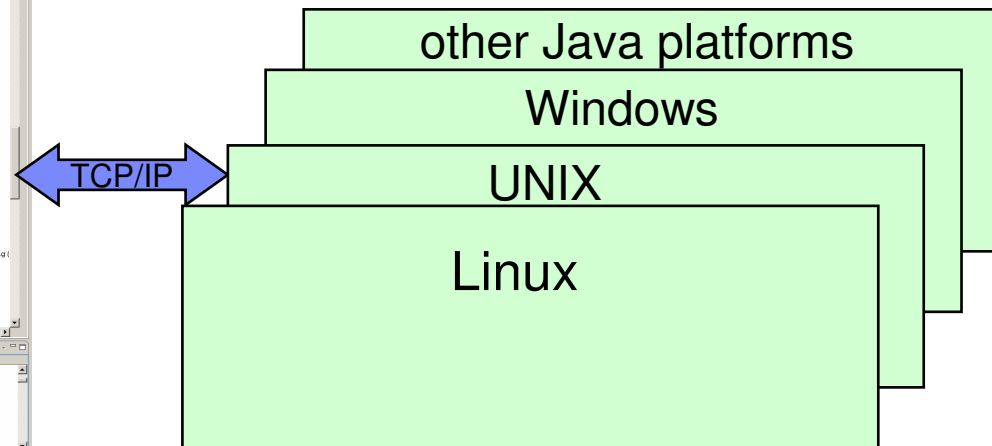
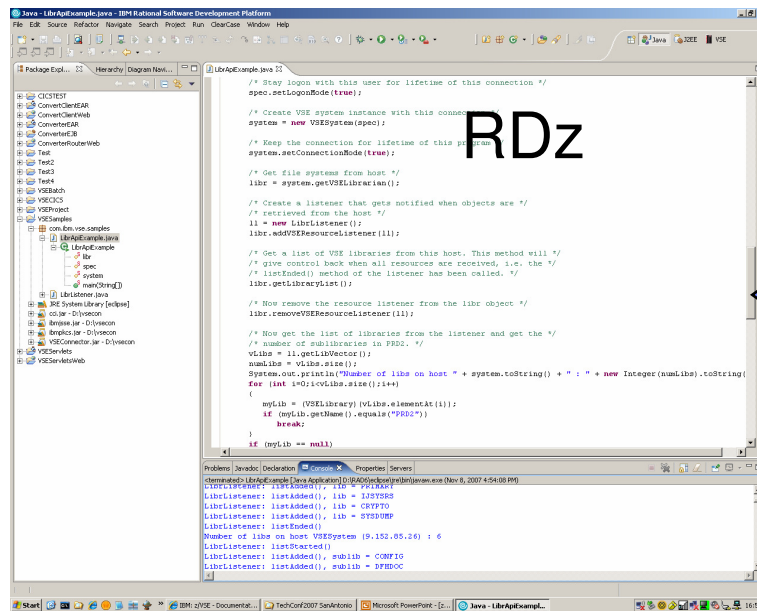


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www.eclipse.org

(3) Development of Java applications in RDz



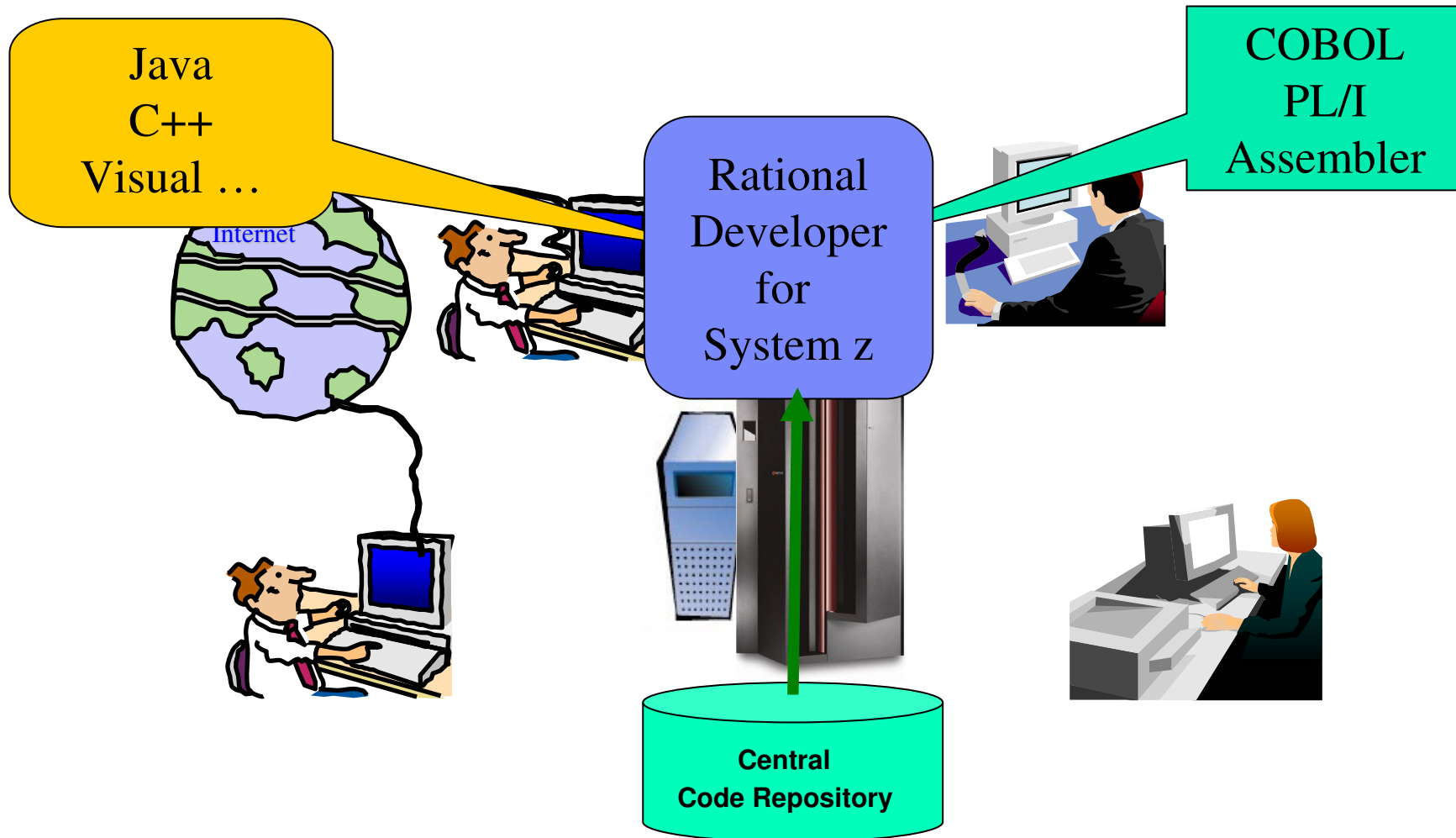
- Development of native Java applications
 - for systems like UNIX, Linux, Windows or other Java platforms
 - Edit, compile and Build
 - Test the Java application in the integrated WebSphere test environment and access z/VSE resources
 - **additional supported languages are C, C++, REXX**
- Development 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



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/>
- RDz
<http://www-01.ibm.com/software/awdtools/rdz/>
- RDz Plug-In for VSE
<http://www.qgrp.de/index.php?show=produkte&id=1&detail=wdz>
- Live Virtual Classes for RDz for VSE
<http://www-03.ibm.com/servers/eserver/zseries/zvse/education/index.html#completed>



- 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