



Integrated Application Development for z/VSE based on Eclipse

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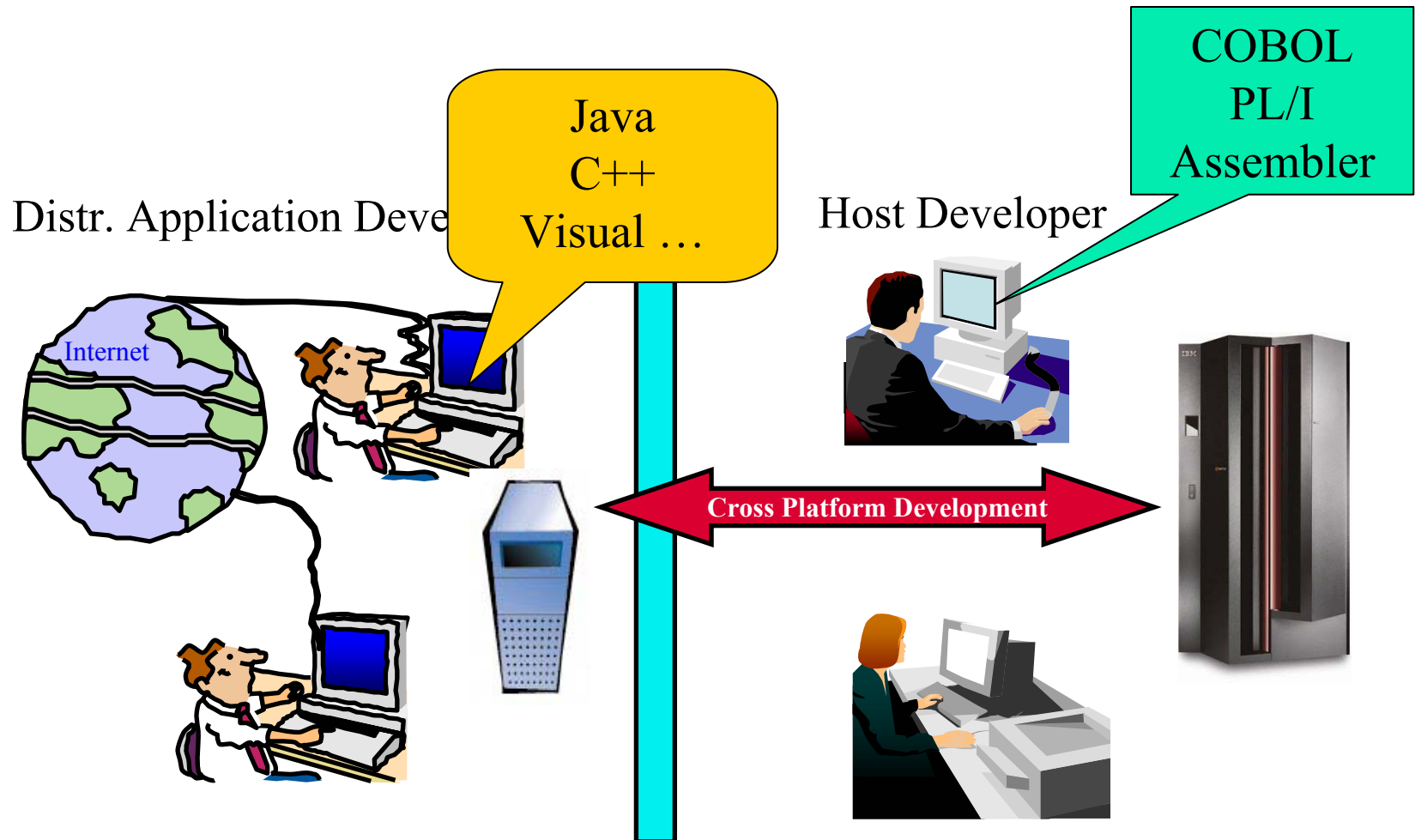
Development objectives !!!

- **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

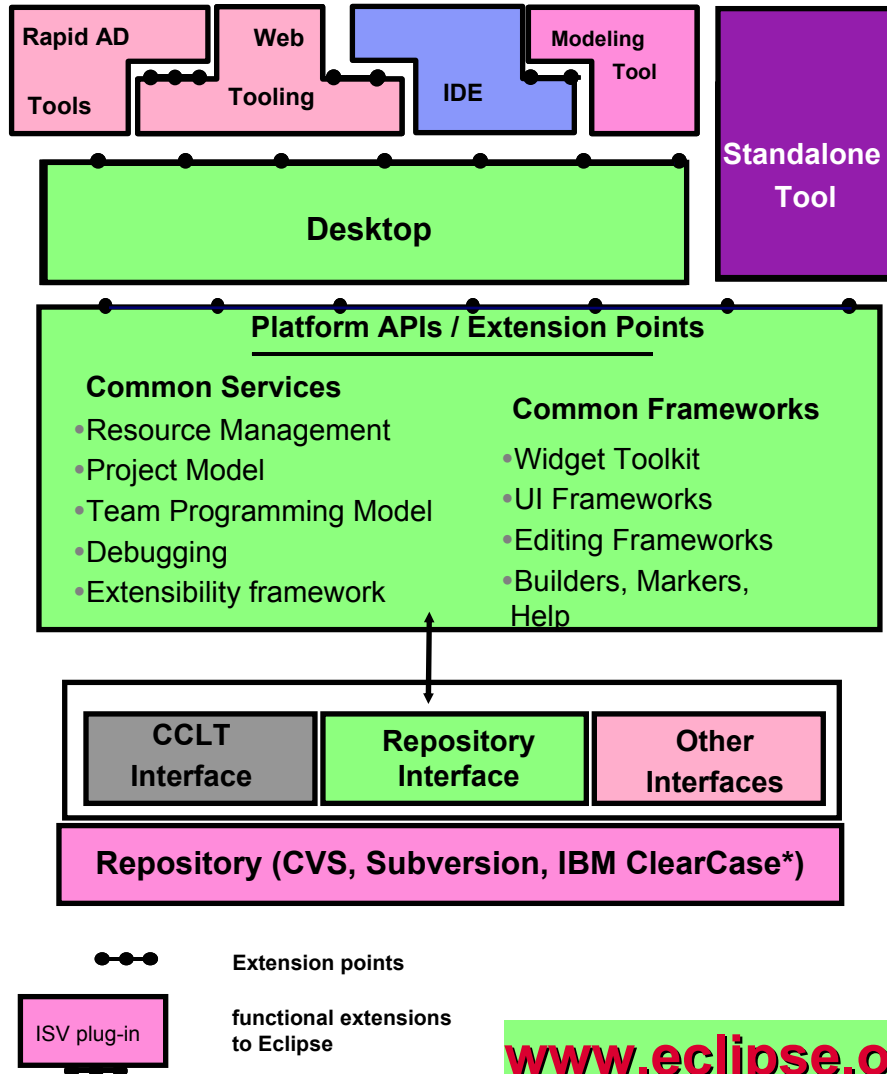
- **Develop for multiple platforms**
 - common framework for the enterprise instead of multiple unique platform dependent tools
 - same basic tool set for open systems and mainframe

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

'Distributed' Development Landscape...



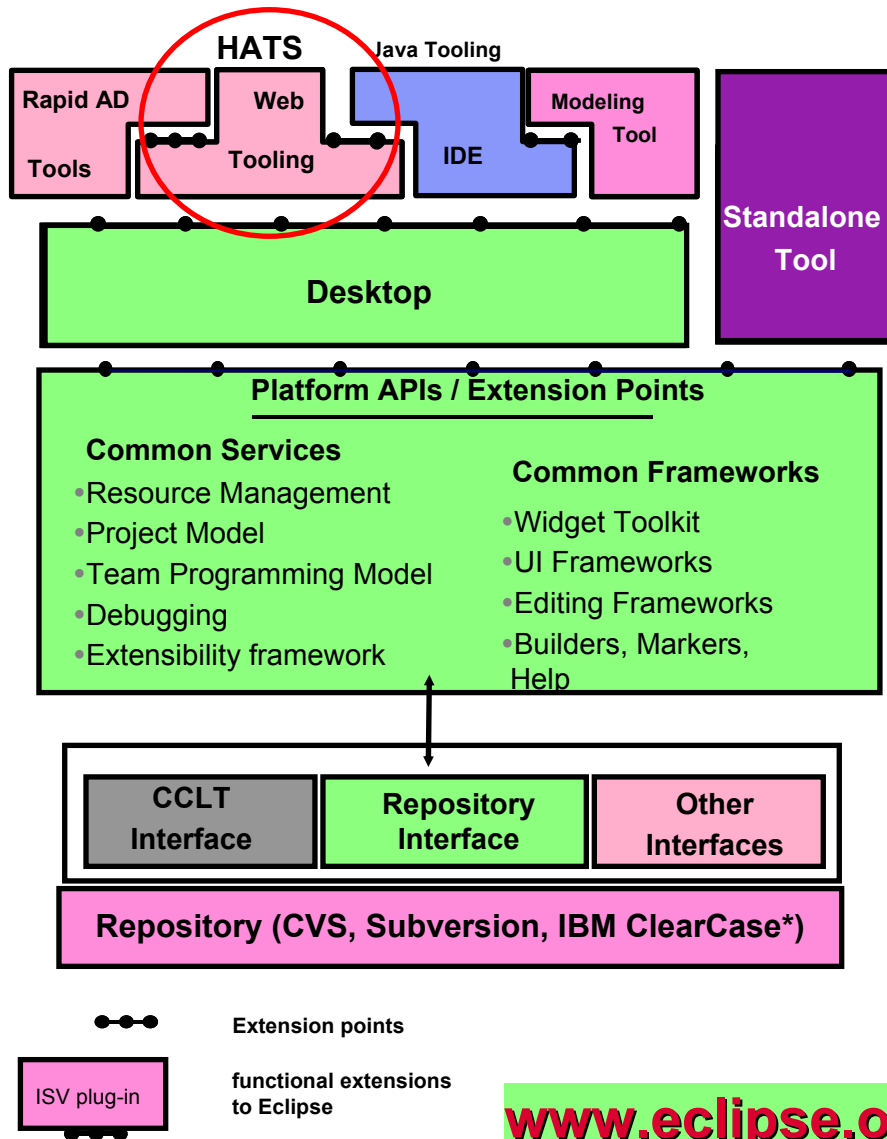
Eclipse – the open Standard for application development



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 (WDz, RDz)
 - for Java, COBOL, PL/I, ASM,C
 - **Application analysis and optimization**
 - Analyze the applications and workflows with graphical correlations
 - **IBM HATS Development Plug-In**
 - develop new front-ends to 3270 apps.
 - **IBM EGL development Plug-In for z/VSE**
 - follow-on to Visual Age Generator

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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 application. The right window is a Microsoft Internet Explorer browser displaying the same application's data rendered as a modern web page.

Terminal Window (Left): Shows a 'Display Report' for 'JK Enterprises'. The data is presented in a text-based format with columns for 'PART NUMBER' and 'PART NAME'. The report lists various sports equipment items such as Baseball gloves, Catcher's mit, Baseball bat, Football, Basketball, Tennis balls, Golf balls, and Ice Skates.

Web Browser Window (Right): Shows the same data rendered as a modern web page. The page has a header for 'JK Enterprises' and a navigation menu. The main content area includes an 'Inventory Table' with a 'Number in Stock' column, an 'Inventory Graph' showing a bar chart of stock levels, and a 'Delivery Schedule' calendar for August 2002. A 'Current Order' table at the bottom lists items with their quantities and photo buttons.

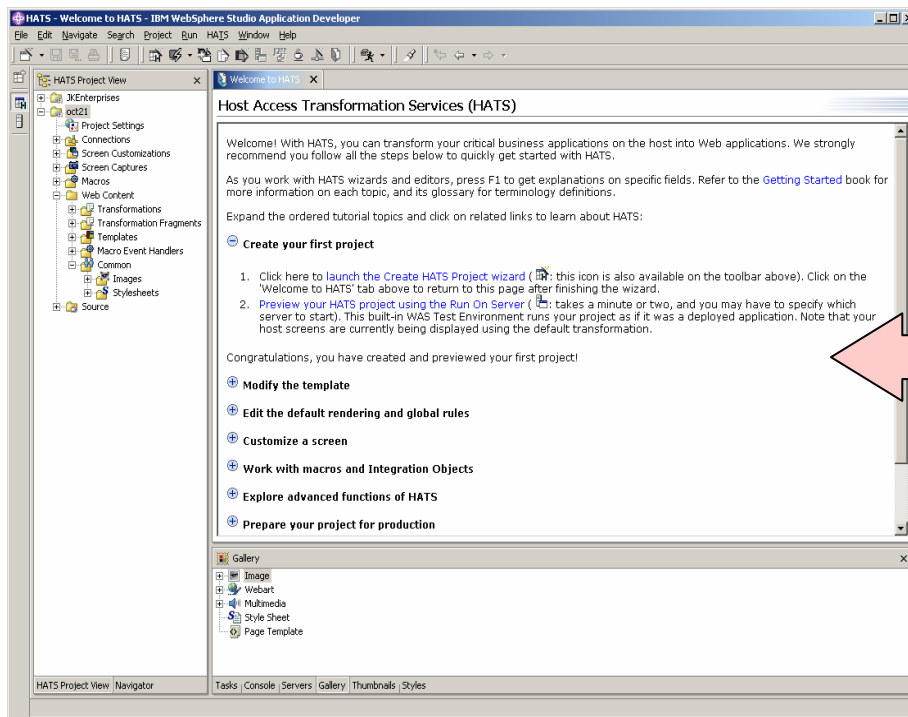
Description	Number in Stock
Baseball glove	35
Catcher's mit	20
Baseballs - 1 doz.	40
Baseball bat	45
Football	35
Basketball	41
Tennis balls - 1 doz.	41
Golf balls - 1 doz.	27
Ice Skates	17

Benefit: Easily extend existing applications to the web

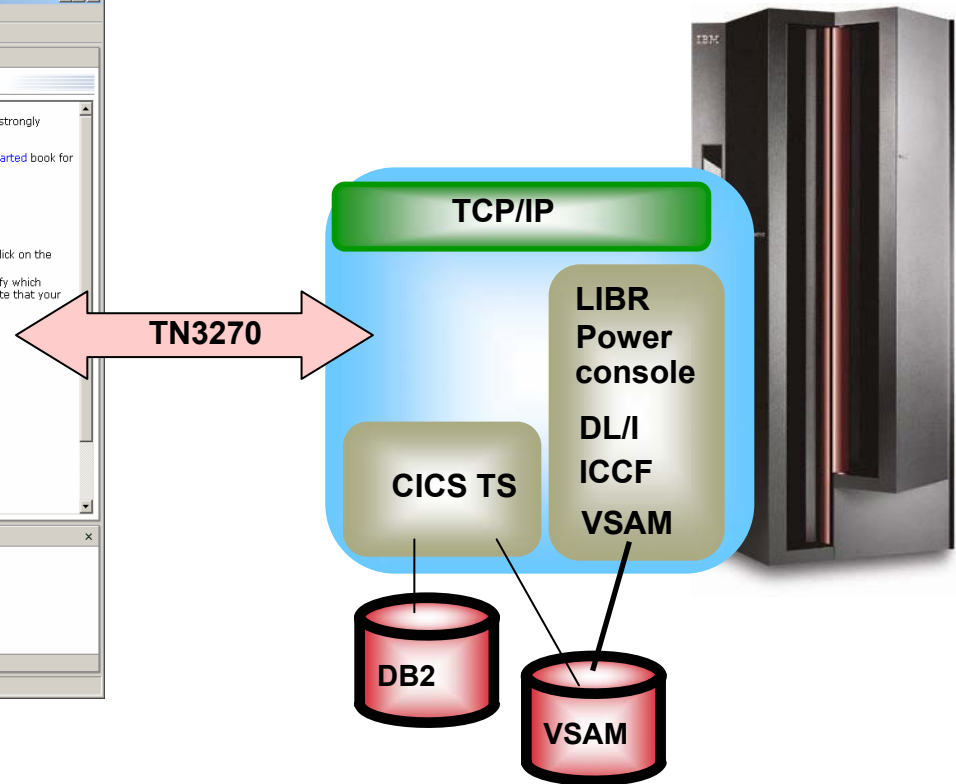
Modernize Existing Applications with HATS

(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      RALYSC1
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
File Distribute Inquire Options Help
200      Search Results

For a second, press a function key -or- type an Action Code and press Enter.
A=Address  B=Backup  C=CC-list  E=Dept title  F=Feedback
I=Show Id  J=JobResp(peer)  K=Calendar  L=Local data  O=Op.date/Opn.
P=Phone  R=Spec-To-All  T=To-list  W=Spec-Chain  Y=View record

Column _02 To 01 of 60
AREA04 AREAL ASSIGNW ATLANTA ATL06 AUSTIN BETHESDA BOCA BOULDER BURLINGOT
CHARLOTT CHICAGO CT DALAI0 DALLAS DAYTON FISHKILL ISSCAMPO KP LEX LOTUS LOHRES
Name          Act  Tit-line  EmpSt  Mode  User  ID  Mail
Carter-Willis, A. P. (Antoinette)  -  596-7939  Reg  IBMUSM13  ACARTERW  WEZA1
Willis, Jr, Albert F. (Al)        -  799-7224  Reg  IBMUSM14  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 menu
F1=Help  F2=Set  F3=Basic  F4=Send note  F5=Spec-To-All  F6=Show dept/room
F7=Backward  F8=Forward  F9=Command  F10=Actions  F11=Dist list  F12=Cancel
  
```

```

09/23/2003 02:21 PM <DIR> 0nullines
11/28/2003 02:23 PM <DIR> 0videoc
01/05/2004 09:24 AM <DIR> 0vslick
01/03/2004 10:40 AM <DIR> 0WINDOWS
10/16/2003 09:26 AM <DIR> 0win_je_131
01/05/2004 04:42 PM <DIR> 0wsad51
04/23/2003 05:21 PM <DIR> 0wsgdrive
01/03/2004 10:40 AM 14,496 SysAdmin.log
01/03/2004 14 File(s) 4,175,691 bytes
98 Dir(s) 22,888,353,792 bytes free

C:\Documents and Settings\Administrator\
  
```

JK Funds Homepage > About Wealth Management in the US > Home

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 RALYSC1 5/16/02 10:13:31

Support Center/400 library DEMOBOX20

Type choices, press Enter.

Customer number

Location code

Support Center/400 problem number

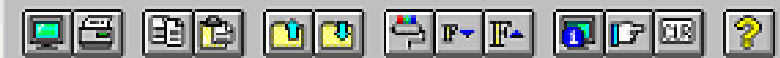
Associated problem

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) 22,888,353,792 bytes free
14 File(s) 4,175,691 bytes



MASTER INDEX INQUIRY

LAST NAME: smith?? MID: ?
 FIRST: John???????????????? MIDDLE: TITLE: ?
 AKA: ?
 AKA: ?
 DATE OF BIRTH: SEX: TELEPHONE: NAME CNT:
 ADDRESS: ADDR CNT:
 DATE OF DEATH:
 STATE ID: SSN:
 EMPLOYER NAME:
 COMMENTS:

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

PA1 - PAGE FORWARD PF2 - RESTART INQUIRY PAGE: OF
 PA2 - PAGE BACKWARD PF3 - AKA SUMMARY OPID:
 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

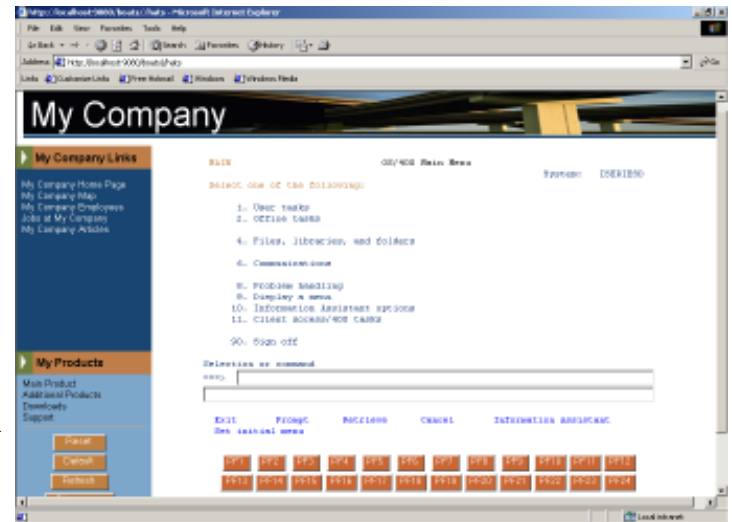
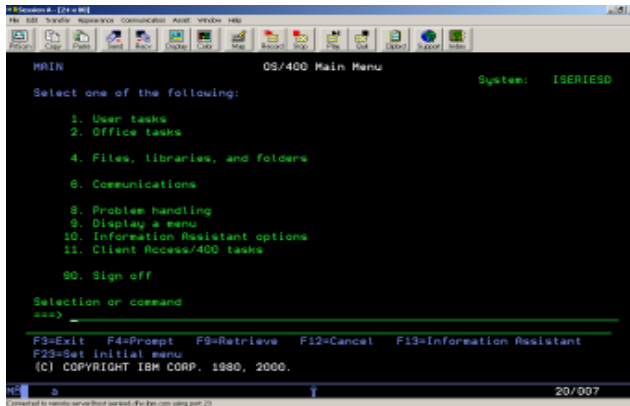
Print

Help

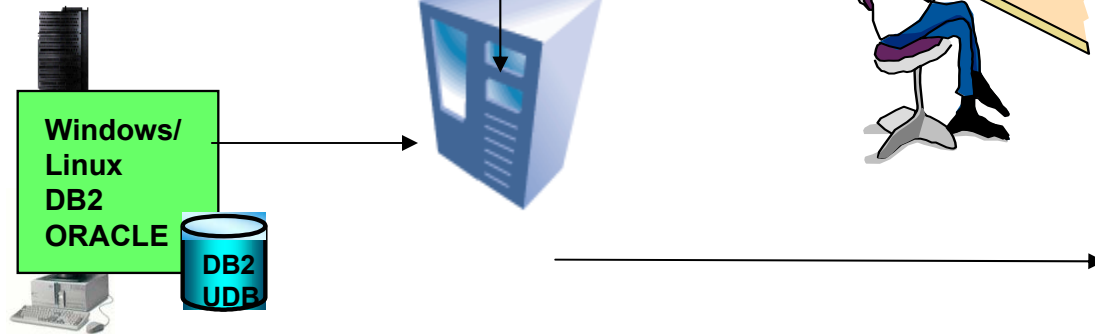
Exit

Application Integration with Host Access Transformation Services

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



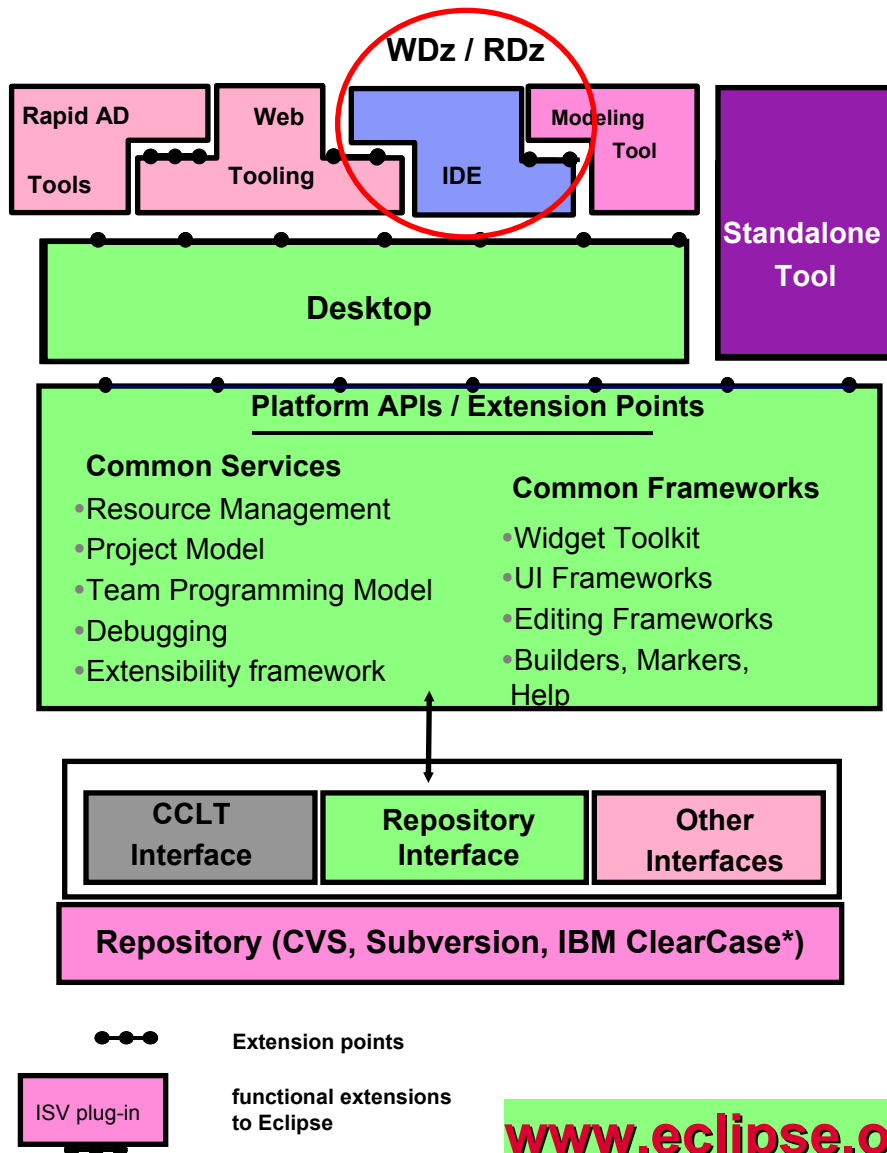
3270 or 5250
data stream



Screen transformation rules running on
WebSphere Application Server

HTML in a Browser

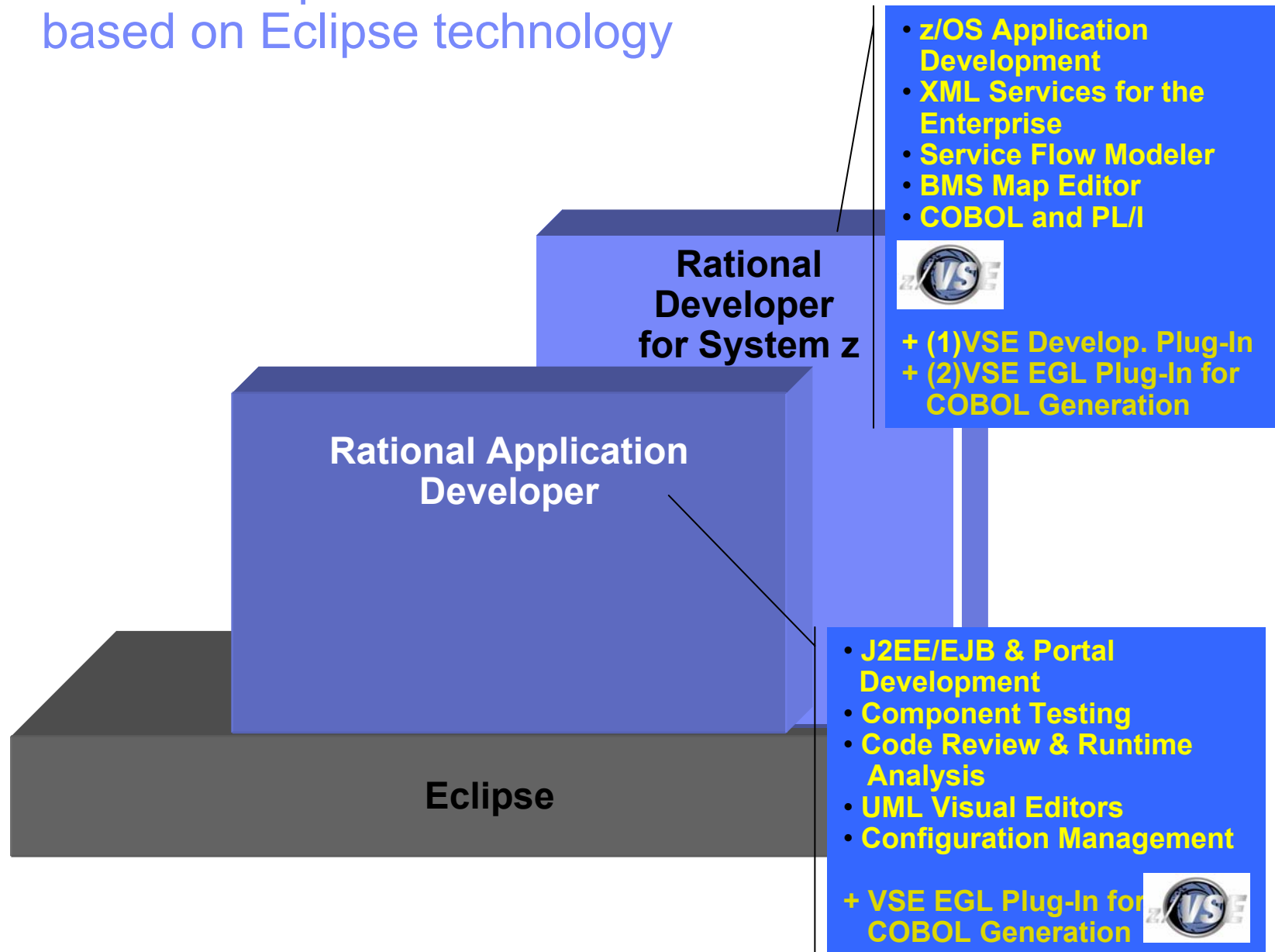
Eclipse – the open Standard for application development



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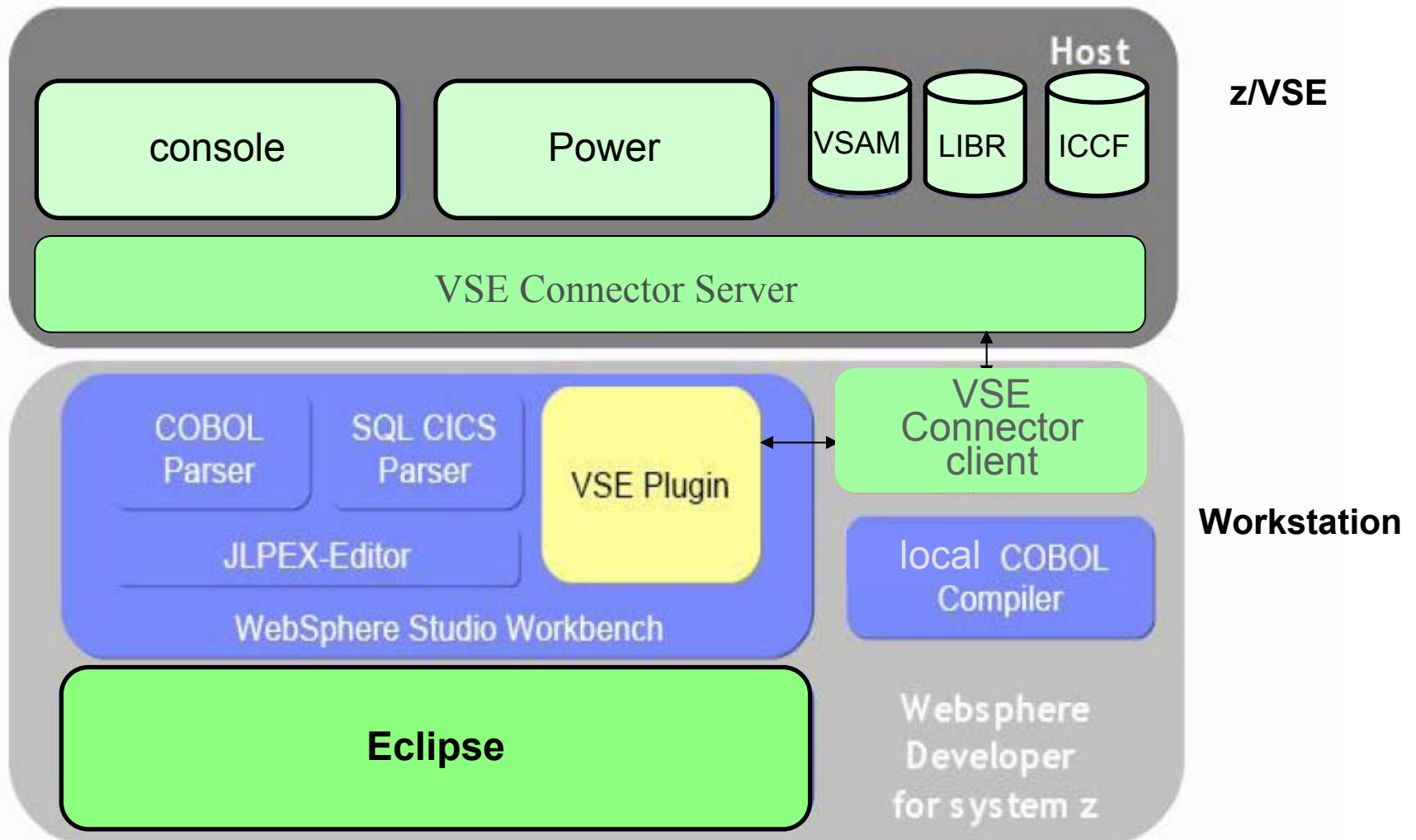
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IBM Developer tools based on Eclipse technology



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

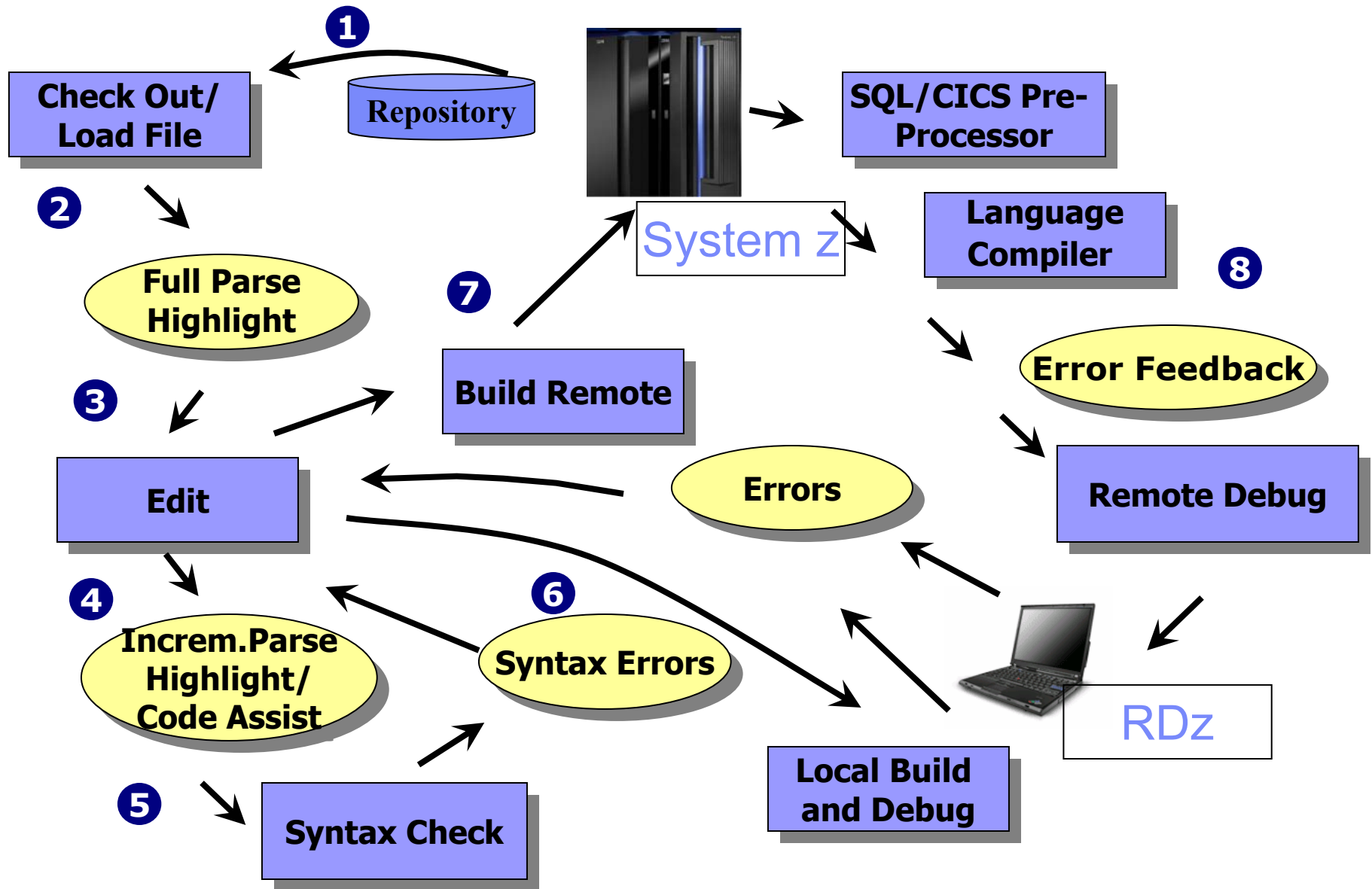


RDz functions for z/VSE and z/OS development

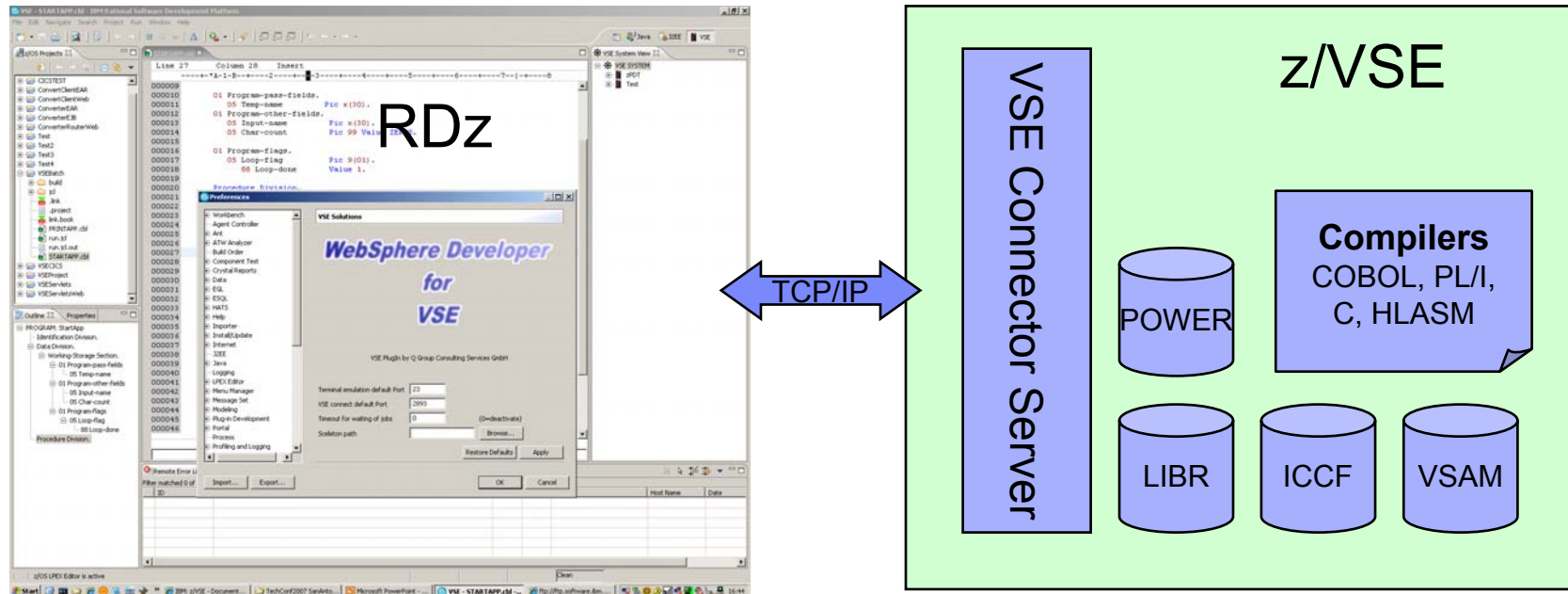
- **Enhanced Eclipse tools with mainframe development functions**
 - special editor functions for mainframe languages
 - local COBOL compiler
 - support for COBOL, ASM, PL/I, C
 - editor for CICS BMS maps
 - support for SQL generation
 - functions for remote processing and mainframe deployment

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

RDz Development Process



(1) 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

The screenshot shows the IBM Rational Developer (RDz) interface in z/VSE perspective. The main editor window displays the source code for a program named PRINTAPP. The code is annotated with callouts 1 through 6. Callout 1 points to the 'VSE' tab in the top toolbar. Callout 2 points to the 'VSE System View' tree on the right. Callout 3 points to the 'z/OS Projects' tree on the left. Callout 4 points to the main code editor. Callout 5 points to the 'Outline' view at the bottom left. Callout 6 points to the 'VSE Console' window at the bottom right, which displays a memory map (MAP) table.

1.Perspective

2.View

3.Projects

4.Editor

5.Outline View

6.VSE Console

The VSE Console window displays the following memory map (MAP) table:

AR	0015	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	B5 V	1280K	4864K	500000	45056K	
AR	0015	1	F1 V	1024K	4096K	500000	0K	POWSTART
AR	0015	2	F2 V	2048K	49152K	500000	0K	CICSICCF
AR	0015	3	F3 V	600K	14760K	500000	0K	VTAMSTRT
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	TCPIP00
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	SECSERV
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 is titled "VSE - PRINTAPP.cbl - IBM Rational Software Development Platform". The interface is divided into several panes:

- 1.Perspective:** The top menu bar and toolbar.
- 2.View:** The "VSE System View" tree on the right side, showing a hierarchical structure of VSE components like VSE SYSTEM, VSE Lab, VSE Workshop, VSE Mainframe, and various libraries and datasets.
- 3.Projects:** The "z/OS Projects" tree on the left side, showing project files like .link, .project, .link.book, PRINTAPP.cbl, STARTAPP.cbl, TIMEZONE.cbl, and Timezone.
- 5.Outline View:** The "Outline" pane at the bottom left, showing a tree view of the program structure for "PROGRAM: PRINTAPP", including divisions like Identification, Data, Working-Storage, and Linkage.
- 6.VSE Console:** The "VSE Console" pane at the bottom, displaying a table of memory usage (MAP) with columns for address, space, area, size, and name.
- 7.VSE Terminal:** The central terminal window showing a VSE/ESA ONLINE login prompt with a graphical logo and a list of user options.

The VSE Console output is as follows:

MAP	AR	0015	SPACE	AREA	V-SIZE	GETVIS	V-ADDR	UNUSED	NAME
	AR	0015	S	SUP	716K		0		\$\$\$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	0K	POWSTART
	AR	0015	2	F2 V	2048K	49152K	500000	0K	CICSICCF
	AR	0015	3	F3 V	600K	14760K	500000	0K	VTAMSTRI
	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	TCPIP00
	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	SECSERV
	AR	0015	S	SVA-31	7588K	6748K	3700000		

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

- Develop a z/VSE project

The screenshot shows the IBM VSE IDE interface. The main window displays a terminal session with the following text:

```

IEBADM01          VSE/ESA ONLINE
5609-ZV3 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  SSSSSSS EEEEEEE
          ++      VV  VV  SSSSSSS EEEEEEE
          ++      VV  VV  SS      EE
          ++      VV  VV  SSSSS  EEEEEEE
          ++      VV  VV  SS      EE
          ++      VV  VV  SSSSSSS EEEEEEE
          ++      VV  VV  SSSSS  EEEEEEE

Your terminal is A001 and its name in the network is D1080001
Today is 01/26/2007 To sign on to DEDCCICS -- 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 context menu is open over the terminal window, showing options for "New" projects:

- MVS Project...
- VSE Project

The right-hand pane shows the "VSE System View" tree structure:

- VSE SYSTEM
 - DEMOVSE
 - Librarian
 - All
 - Cobol
 - Power
 - Reader
 - List
 - Punch
 - Transmit
 - VSAM
 - VSAM.MASTE
 - DB2.USER.CA
 - VSESP.USER.
 - #VSAM.#CIC
 - ICCF
 - 1 Demo
 - 2
 - 10
 - 11
 - 12
 - 14
 - 20
 - 21
 - 22

The bottom of the IDE shows a "Remote Error List" table with the following columns:

ID	Message	Se...	Line	Location	Host Name	Date
Filter matched 0 of 0 messages						

The Windows taskbar at the bottom shows the system tray with the date and time: 4:29 PM, Friday, 1/26/2007. The taskbar also displays the Start button, several application icons, and the taskbar buttons for "Command Prompt", "Plug-in Development...", "VSE - DEMOVSE.hce", and "ViewICCFLabel.JPG - ...".

COBOL Syntax checking and highlighting

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

- Editor Window:** Displays COBOL code for 'IGZTMATH.CBL'. The code includes:


```

02 Condition-Token-Value. 00027000
COPY CEEIGZCT. 00028000
03 Case-1-Condition-ID. 00029000
04 Severity PIC S9(4) BINARY. 00030000
04 Msg-No PIC S9(4) BINARY. 00031000
03 Case-2-Condition-ID 00032000
REDEFINES Case-1-Condition-ID. 00033000
04 Class-Code PIC S9(4) BINARY. 00034000
04 Cause-Code PIC S9(4) BINARY. 00035000
03 Case-Sev-Ctl PIC X. 00036000
03 Facility-ID PIC XXX. 00037000
02 I-S-Info PIC S9(9) BINARY. 00038000
00039000
PROCEDURE DIVISION. 00040000
00041000
PARA-MHSLOG. 00042000
MOVE 5.65 TO ARG1RS. 00043000
CALL 'CEESSLOG' USING ARG1RS, FC, RESLTRS. 00044000
00045000
00046000
      
```
- Remote Error List:** Shows 3 messages:

ID	Message	Se...	Line	Location	Host Name	Date
IGYP2106	IGYP2106-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
IGYP2106	"DIVI" WAS FOUND IN THE "VALUE" STATEMENT. ...	2	40	IGZTMATH.C	DEMOVSE	Jan 26, 2007 4:41:09 PM
- System Tray:** Shows 'z/OS LPEX Editor is active', 'Clean' button, and system status (98% battery, Friday 1/26/2007).

z/VSE local and remote Compile

The screenshot displays the VSE IDE interface for the project `DEMOVSE`. The main editor window shows the source file `IGZTMATH.cbl` with the following code snippet:

```

Line 40      Column 81      Insert
--*A-1-B-----2-----3-----4-----5-----6-----7--|-----8
02 Condition-Token-Value.          00027000
COPY CEEIGZCT.                    00028000
03 Case-1-Condition-ID.            00029000
04 Severity      PIC S9(4) BINARY. 00030000
04 Msg-No        PIC S9(4) BINARY. 00031000
03 Case-2-Condition-ID.            00032000
                                00033000
                                REDEFINES Case-1-Condition-ID.
04 Class-Code    PIC S9(4) BINARY. 00034000
04 Cause-Code    PIC S9(4) BINARY. 00035000
Case-Sev-Ctl     PIC X.             00036000
Facility-ID      PIC XXX.           00037000
Info             PIC S9(9) BINARY. 00038000
                                00039000
VI SION.         00040000
                                00041000
.                00042000
.                00043000
5 TO ARG1RS.     00044000
ESSLOG' USING ARG1RS, FC, RESLTRS. 00045000
*****          00046000

```

A context menu is open over the `IGZTMATH.cbl` file in the `DEMOVSE` project. The menu items are:

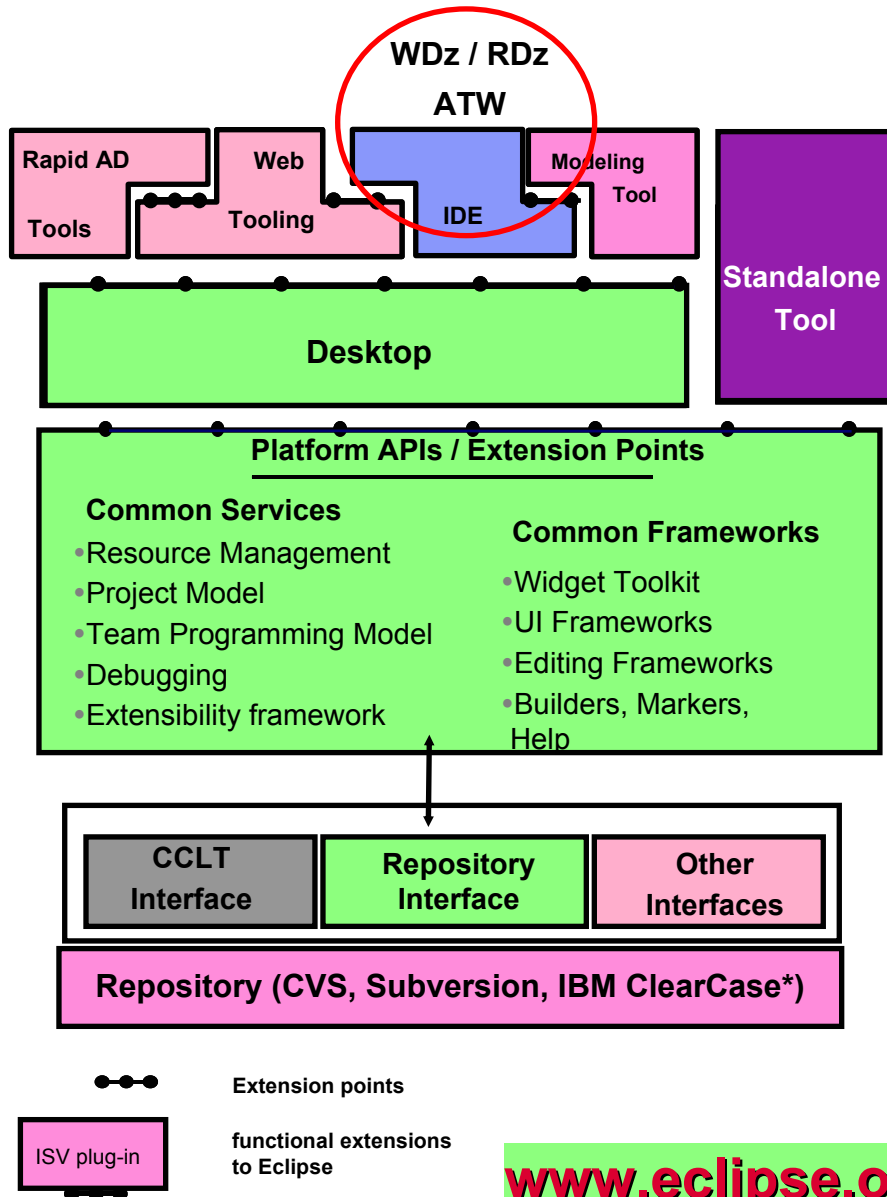
- New
- Go Into
- Go To
- Open
- Open With
- Refresh
- Expand
- Collapse
- Rename...
- Copy
- Move...
- Delete...
- Search...
- Run
- Debug
- Team
- Compare With
- Replace With
- VSE
 - RemoteCompile
 - Info
 - Upload
- Host Connection Emulator Support
- Local Syntax Check
- Nominate as Entry Point(B)
- Open Welcome Page(O)
- Properties(Z)

The `Problems` window at the bottom shows a syntax error:

Page	Se...	Line	Location	Host Name	Date
2		40	/DEMOVSE/IGZTMATH...	Local	Jan 26, 2007 4:39:27 PM

The Windows taskbar at the bottom shows the system clock as 4:40 PM on Friday, 1/26/2007, and the CPU usage is at 98%.

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 (WDz, RDz)
 - for Java, COBOL, PL/I, ASM,C
 - **Application analysis and optimization**
 - Analyze the applications and workflows with graphical correlations
 - **IBM HATS Development Plug-In**
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 - **IBM EGL development Plug-In for z/VSE**
 - follow-on to Visual Age Generator

(2) Analysis of applications and workflow

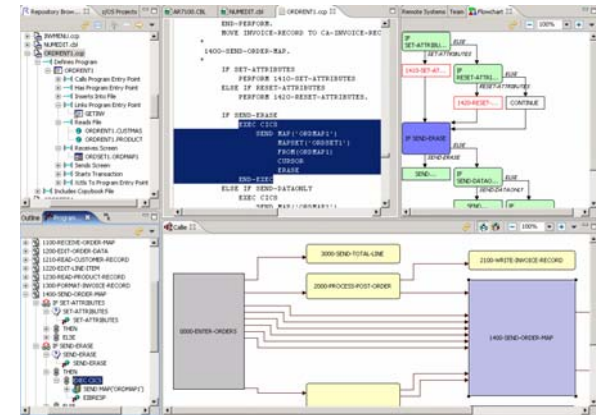
(ATW) Asset Transformation Workbench Analyzer for Eclipse

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

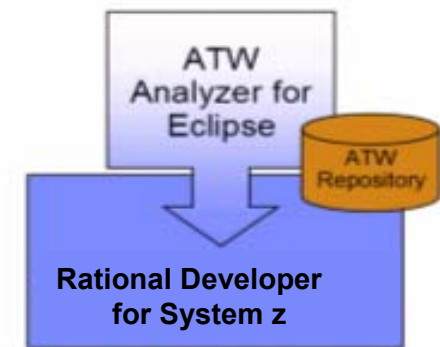
- **Find code patterns and anti-patterns**
 - Measure complexity
 - uses the source code in the central repository

- **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)

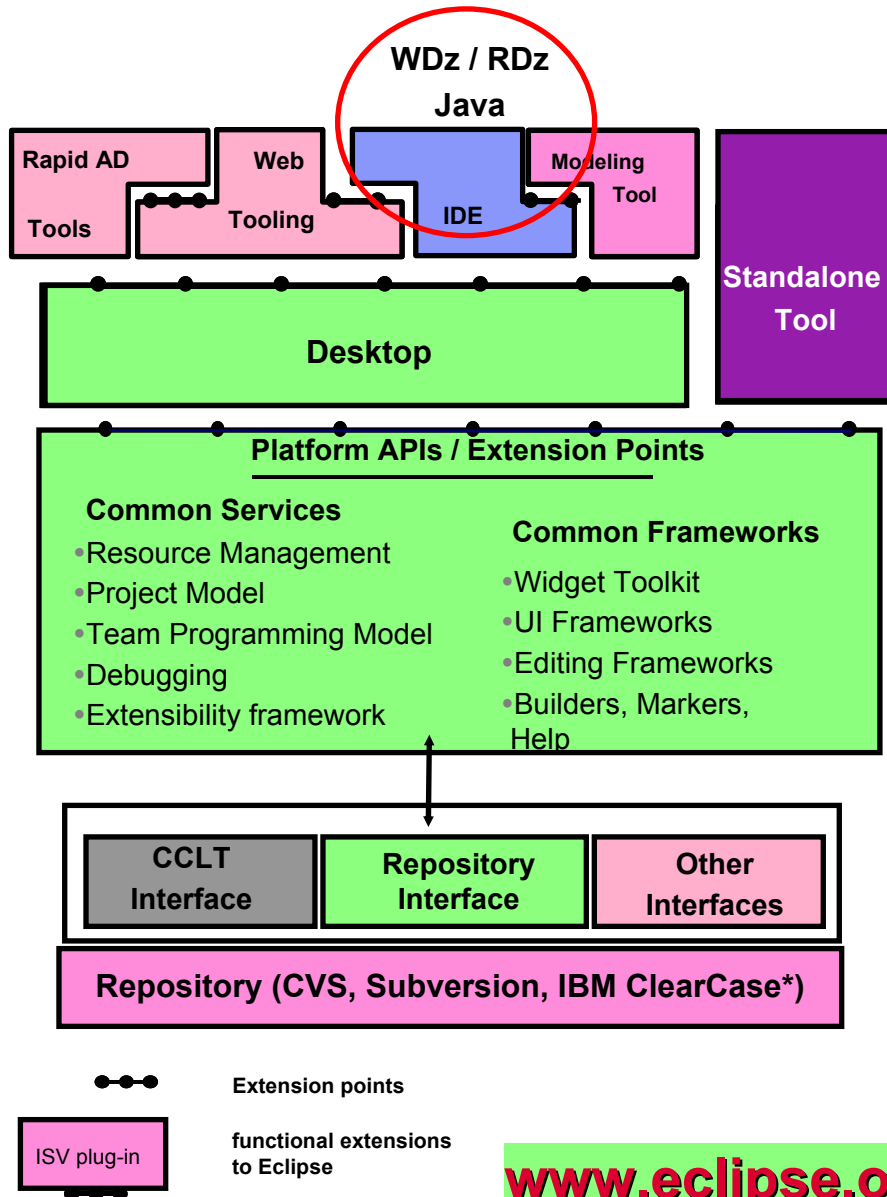
The screenshot displays the IBM z/OS development environment with three main windows:

- Repository Browser (Left):** Shows a project tree for 'ORDRENT1.ccp' under 'z/OS Projects'. The tree includes 'Defines Program' and 'ORDRENT1' with various actions like 'Calls Program Entry Point', 'Has Program Entry Point', 'Inserts Into File', 'Links Program Entry Point', 'GETINV', 'Reads File', 'ORDRENT1.CUSTOMAS', 'ORDRENT1.PRODUCT', 'Receives Screen', 'ORDSET1.ORDMAP1', 'Sends Screen', 'Starts Transaction', 'Xctls To Program Entry Point', and 'Includes Copybook File'.
- Code Editor (Top Middle):** Displays COBOL code for 'ORDRENT1.ccp'. The code includes:

```
END-PERFORM.  
MOVE INVOICE-RECORD TO CA-INVOICE-REC  
*  
1400-SEND-ORDER-MAP.  
*  
IF SET-ATTRIBUTES  
    PERFORM 1410-SET-ATTRIBUTES  
ELSE IF RESET-ATTRIBUTES  
    PERFORM 1420-RESET-ATTRIBUTES.  
  
IF SEND-ERASE  
    EXEC CICS  
        SEND MAP('ORDMAP1')  
        MAPSET('ORDSET1')  
        FROM(ORDMAP1)  
        CURSOR  
        ERASE  
    END-EXEC  
ELSE IF SEND-DATAONLY  
    EXEC CICS  
        SEND MAP('ORDMAP1')
```
- Flowchart (Top Right):** A flowchart titled 'Remote Systems Team Flowchart' showing logic for attribute setting and sending. It starts with 'IF SET-ATTRIBU...', leading to '1410-SET-AT...', then 'IF RESET-ATTRI...', leading to '1420-RESET-...', which then leads to 'CONTINUE'. Another path goes from 'IF SEND-ERASE' to 'SEND...', then 'IF SEND-DATAO...', leading to 'SEND...' and 'IF'.
- Outline (Bottom Left):** A detailed outline of the program structure, including:
 - 1100-RECEIVE-ORDER-MAP
 - 1200-EDIT-ORDER-DATA
 - 1210-READ-CUSTOMER-RECORD
 - 1220-EDIT-LINE-ITEM
 - 1230-READ-PRODUCT-RECORD
 - 1300-FORMAT-INVOICE-RECORD
 - 1400-SEND-ORDER-MAP
 - IF SET-ATTRIBUTES
 - SET-ATTRIBUTES
 - THEN
 - ELSE
 - IF SEND-ERASE
 - SEND-ERASE
 - THEN
 - EXEC CICS
 - SEND MAP('ORDMAP1')
 - EIBRESP
 - ELSE

- Callie (Bottom Right):** A Callie diagram showing the flow between modules. A large grey box '0000-ENTER-ORDERS' has arrows pointing to '3000-SEND-TOTAL-LINE', '2000-PROCESS-POST-ORDER', and '1400-SEND-ORDER-MAP'. '3000-SEND-TOTAL-LINE' and '2000-PROCESS-POST-ORDER' also have arrows pointing to '2100-WRITE-INVOICE-RECORD'. '1400-SEND-ORDER-MAP' has arrows pointing to '2100-WRITE-INVOICE-RECORD' and another yellow box.

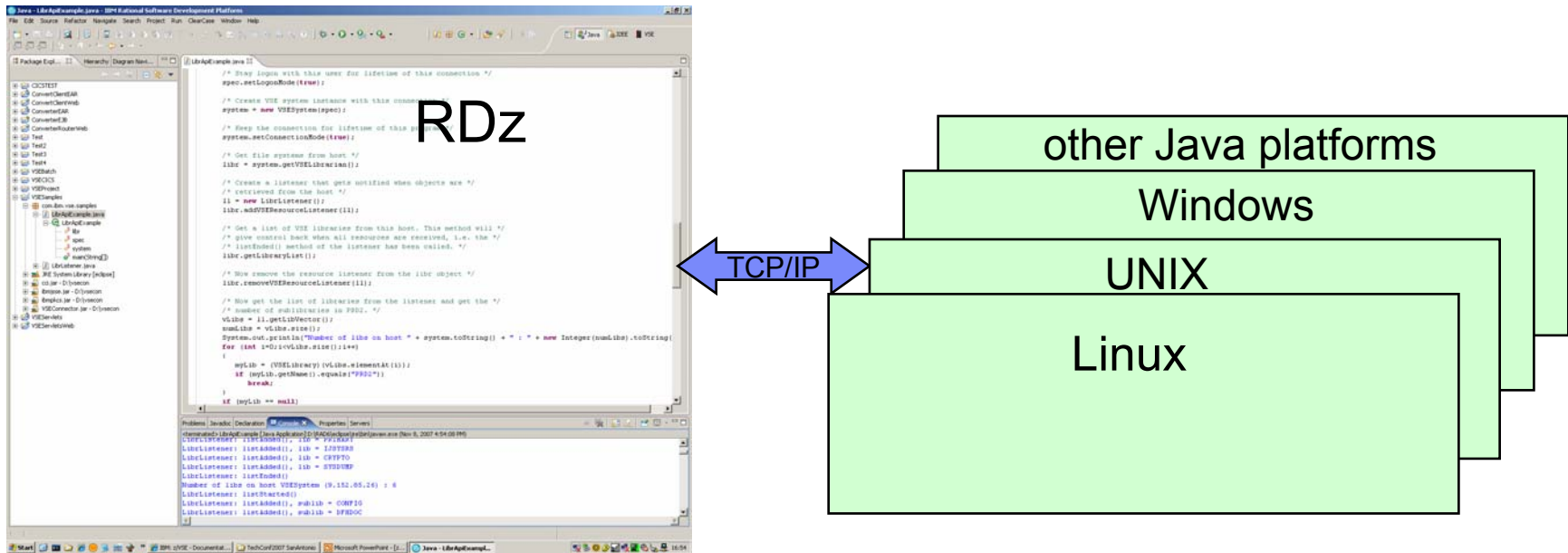
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(3) Development of Java applications in RDz



- **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

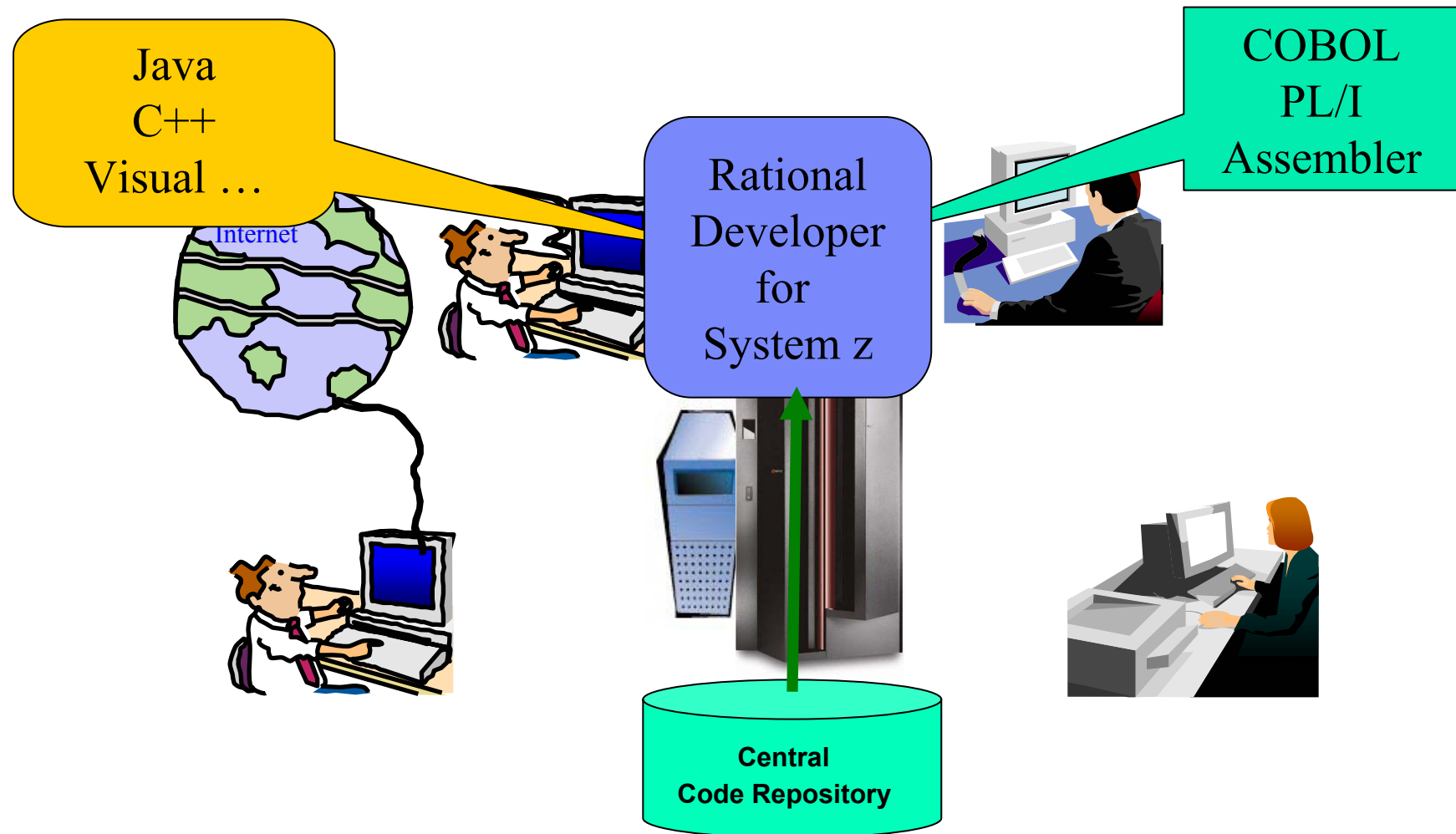
- **A modern tool set to support z/VSE development and maintenance**
 - modern editor for enhanced productivity
 - tools to analyse and optimize existent applications and workflow

- **Common framework for enterprise development**
 - standard for all developers
 - example: z/VSE with COBOL, Linux on System z with Java
 - easy skill transfer

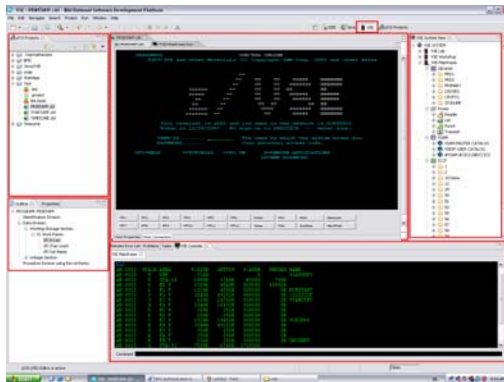
- **Open source framework**
 - commonly thought in schools and universities
 - smooth introduction of new developers to the mainframe

Summary

Eclipse – an open Integrated Development Environment for the enterprise



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>



- 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