



IBM Software Group

WebSphere Development Studio Client for iSeries: The Remote System Explorer **Tooling for RPG/COBOL development** Claus Weiss

WebSphere. software



 e-business software

© 2004 2006 IBM Corporation

Table of contents

Development Studio Client

Remote System Explorer

Subsystems, filters and actions

Editors

Integrated iSeries Debugger

Designer

Summary

1988

**In the beginning, there was
PDM and SEU**

```

Columns . . . :   6  76           Edit           RSELAB01/QRPGLESRC
SEU==>                                     PAYROLLG
FMT *   *. 1 ...+... 2 ...+... 3 ...+... 4 ...+... 5 ...+... 6 ...+... 7 ...+.
0000.45 C*****
0000.46 C*  Housekeeping, clear display fields and reset indicators.
0000.47 C*
0000.48 C           EXSR      MAIN
0000.49 C* If MAIN is done program ends
0000.50 C           eval      *INLR = *on
0000.51 * MAIN SUBROUTINE
0000.52 C      MAIN      BEGSR
0000.53 C           dou      *INKC
0000.54 C           EVAL      *IN60  = *OFF
0000.55 C           EVAL      EMESS  = *BLANK
0000.56 C           EVAL      EMPAPL = *BLANK
0000.57 C           EVAL      PRJAPL = *BLANK
0000.58 C           EVAL      RSNAPL = *BLANK
0000.59 C*
0000.60 C*  Write the SELECT format to display.  If end of job requested,
0000.61 C*

```

1992

And then came CODE/400!*CODE**Not your father's SEU!*

The screenshot displays the CODE/400 development environment. The main window shows a code editor with the following content:

```
File Edit View Actions Options Windows Help
E:\ADTSWIN\LOCAL\samplev2.rpg *
Row 74 Column 33 Replace 1 chang
.....CL0N01N02N03Factor1+++0pcdeFact
000710 C EXCPTADDN
000720 C* Re-access record to bring in
000730 C ACCT CHAINMLGM
000740 C 20 DO
000750 C MOVE 'REA
```

The RPG/400 Help window displays the following table:

CODE	FACTOR 1	FACTOR 2	RESULT FIELD
CHAIN	Search	File name	Data structure

The Navigator window shows a flowchart with the following nodes and connections:

```
graph LR
    MAIN --> SUBPGM
    MAIN --> VALIDT
    SUBPGM --> COD1SR
    SUBPGM --> COD2SR
    SUBPGM --> COD3SR
    SUBPGM --> COD4SR
    VALIDT --> COD1SR
    VALIDT --> COD2SR
    VALIDT --> COD3SR
    VALIDT --> COD4SR
    COD1SR --> RTVMSG
    COD2SR --> DSPMSG
    COD3SR --> SNDADR
    COD4SR --> SNDADR
```

The terminal window shows the following output:

```
1. Work with CU
2. Work with IN
3. Work with PA
4. Work with AD
5. Work with DO
6. Work with PA
70. Sign off
```

2002...

Now, there is RSE in WDS!

Remote System Explorer - PAYROLL - WebSphere Development

File Edit Source Compile Navigate Search Project Run Window Help

Remote Systems

- My Server
 - iSeries Objects
 - Work with libraries...
 - Work with objects...
 - Work with members...
 - Library list
 - User libraries
 - My Library
 - RSELAB01.*lib.test
 - COMPARE.*file.pf-src
 - QCBLLSRC.*file.pf-si
 - QCLSRC.*file.pf-src
 - QCMDSRC.*file.pf-src
 - QDDSSRC.*file.pf-src
 - QRPGLSRC.*file.pf-s
 - PAYROLL.rpgle
 - PAYROLLG.rpgle
 - QRPGLSRC.*file.pf-src
 - iSeries Commands
 - iSeries Jobs
 - IFS Files

Properties

Property	Value
Attribute	SRC
Name	PAYROLLG
Number of ...	0
Source	RSELAB01/QRPGLSRC
Status	OK

Welcome

Row 47 Column 1 Replace

```

.....1.....2.....3.....4.....5...
004600 C* Housekeeping, clear display fields and re
004700 C*
004800 C EXSR MAIN
004900 C* If MAIN is done program ends
005000 C eval *INLR = *on
005100 * MAIN SUBROUTINE
005200 C MAIN BEGSR
005300 C dou *inkc
005400 C EVAL *IN60 = *OFF
005500 C EVAL EMESS = *BLANK
005600 C EVAL EMPAPL = *BLANK
005700 C EVAL PRJAPL = *BLANK
005800 C EVAL RSNAPL = *BLANK
005900 C*
  
```

Outline

- Global Definition
 - Files
 - *IN50
 - *INLR
 - Fields
 - Main Procedure
 - Subroutines
 - ACDESR
 - ADDCE
 - CHGCE
 - DELCE
 - EDITSL
 - EMPTAG
 - INVCDE
 - MAIN
 - PRJTAG
 - RSNTAG

Library RSELAB01 (20 Objects)

Name	Type	Attribute	Text	Status
CLC1	*PGM	CLLE	debuggable, calls Payroll, parm workstation num	OK
CLR1	*PGM	CLLE	debuggable, calls Payroll, parm workstation num	OK
MYCOMPILE	*PGM	CLLE		OK
PAYROLLD	*PGM	CBLE	no errors	OK

Command Normal

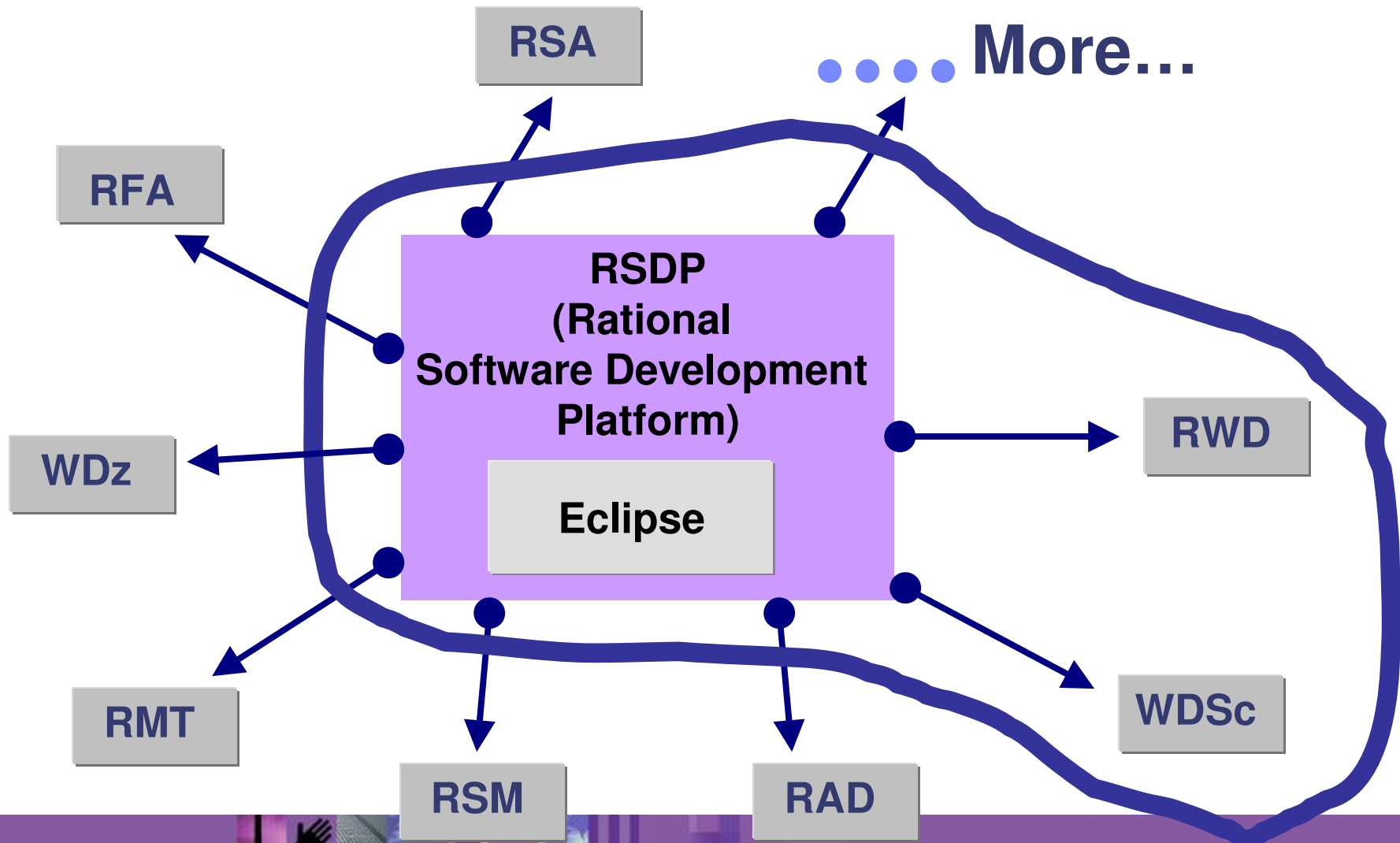
Messages

Prompt... Run

Details... Show Log...

Remote System Details Tasks iSeries Table View iSeries Commands Log

WebSphere Development Studio Client



WebSphere Development Studio

Current 5722-WDS customers with software subscription for V5R3, to upgrade to WDS V6.0 use feature #: 2656
Available after GA

RPG

COBOL

C/C++

PDM
SEU
SDA
RLU

Upgrade from WDS 6.0 to 6.0.1 using Rational
Product updater

*Unlimited
Licenses*

New

WDS Lite

Technology preview

iSeries

iSeries

iSeries

iSeries

Web
Facing
WDHT
supportiSeries
Projects+CODE
+VisualAge RPG

Java™

Debug

Struts
WebWeb
Service

RSE

JSF

EGL
Java
generation

Trace

Profiling

DB

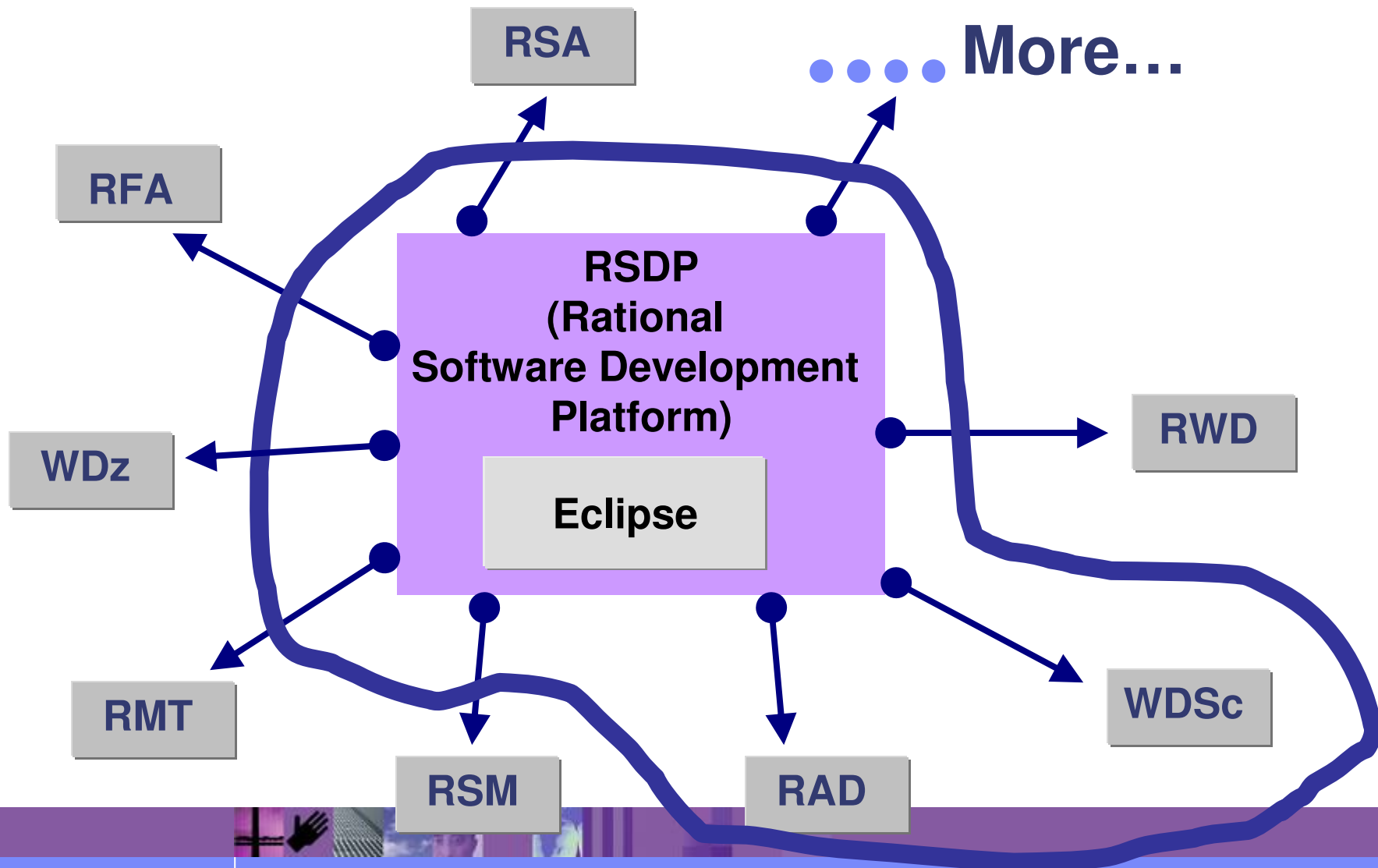
XML

App
ServerHATS
Toolkit

www.ibm.com/software/awdtools/iseries

WebSphere Development Studio Client V6.0.1 based on RWD V6

WebSphere Development Studio Client - Advanced

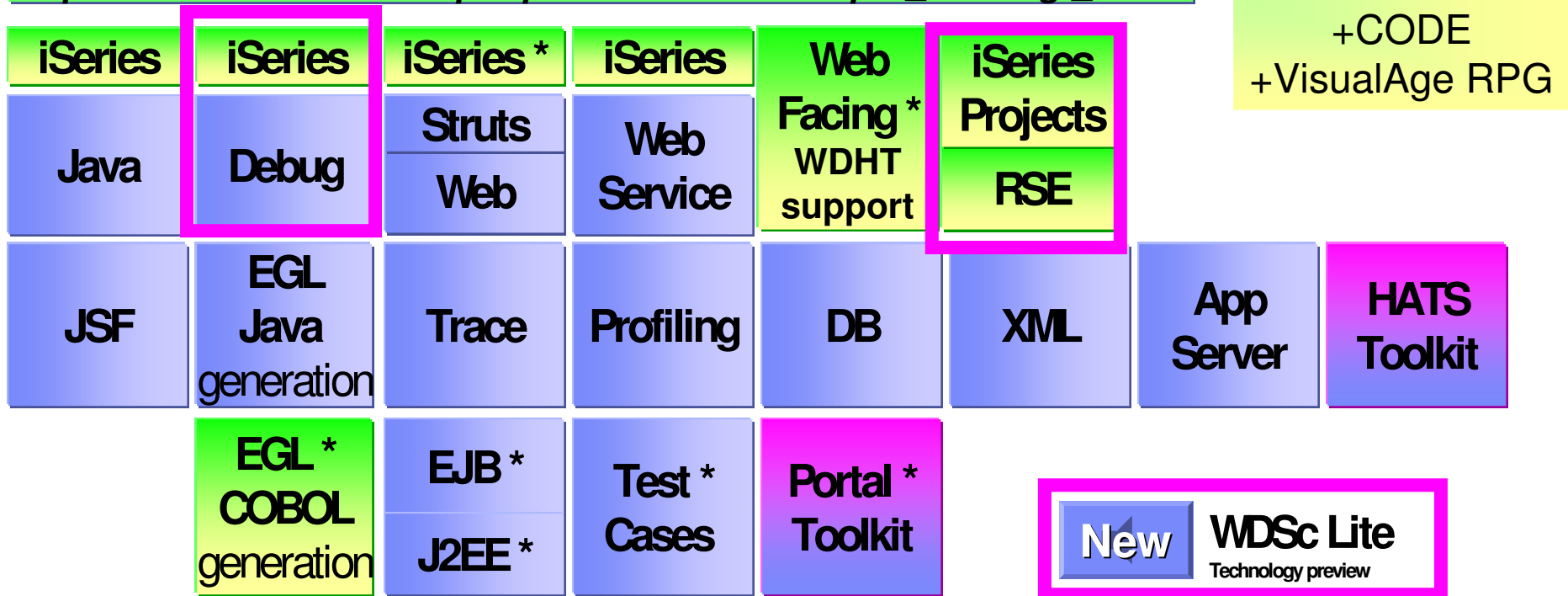


WebSphere Development Studio Client Advanced Edition 6.0.1

Workstation License
order through Passport Advantage

http://www.lotus.com/services/passport.nsf/WebDocs/Passport_Advantage_Home

Upgrade from WDSC 6.0 to 6.0.1 using Rational
 Product updater

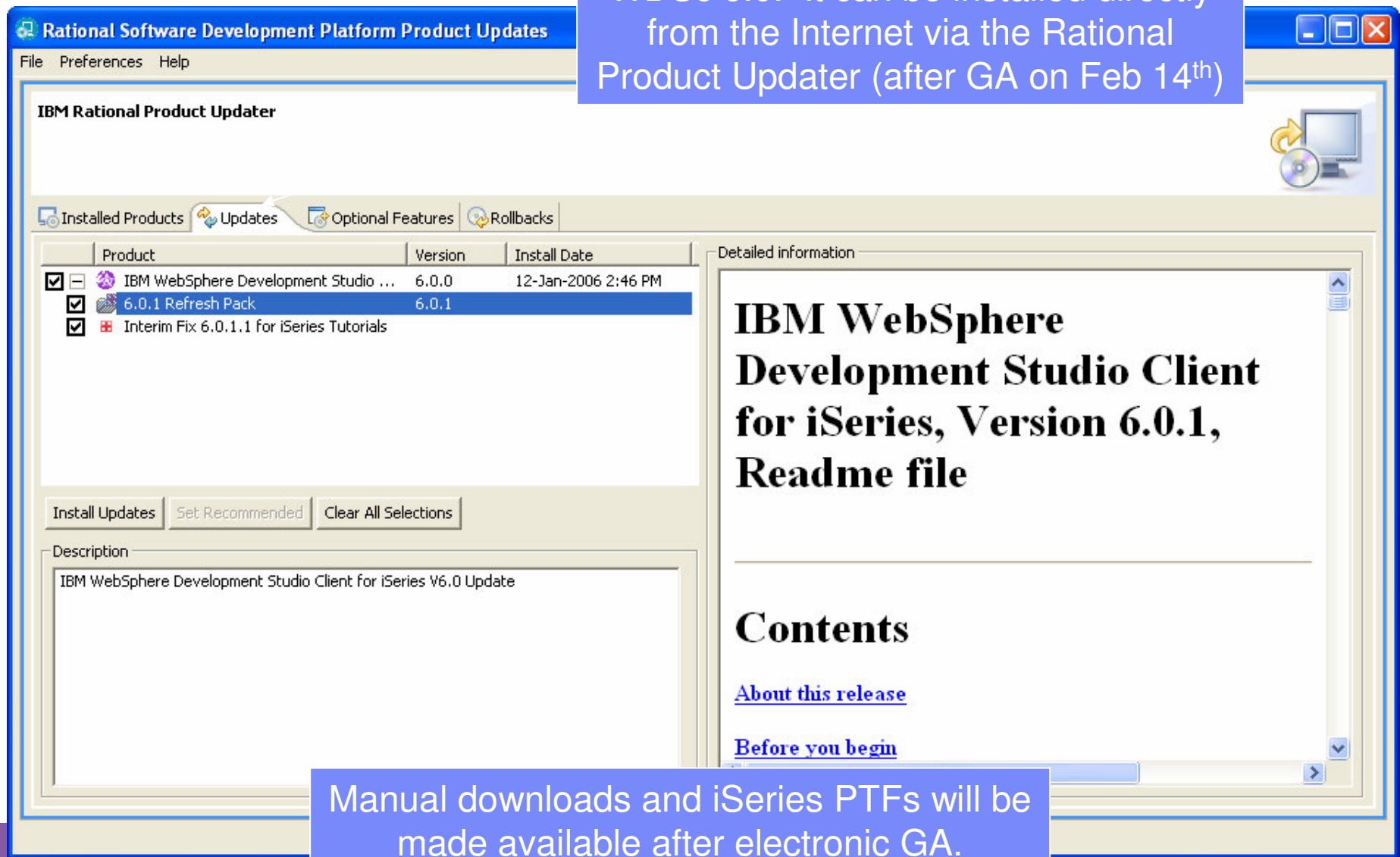


www.ibm.com/software/awdtools/iseries

WebSphere Development Studio Client V6.0.1 based on RAD V6

Installation

WDS 6.0.1 is an electronic update to WDS 6.0. It can be installed directly from the Internet via the Rational Product Updater (after GA on Feb 14th)



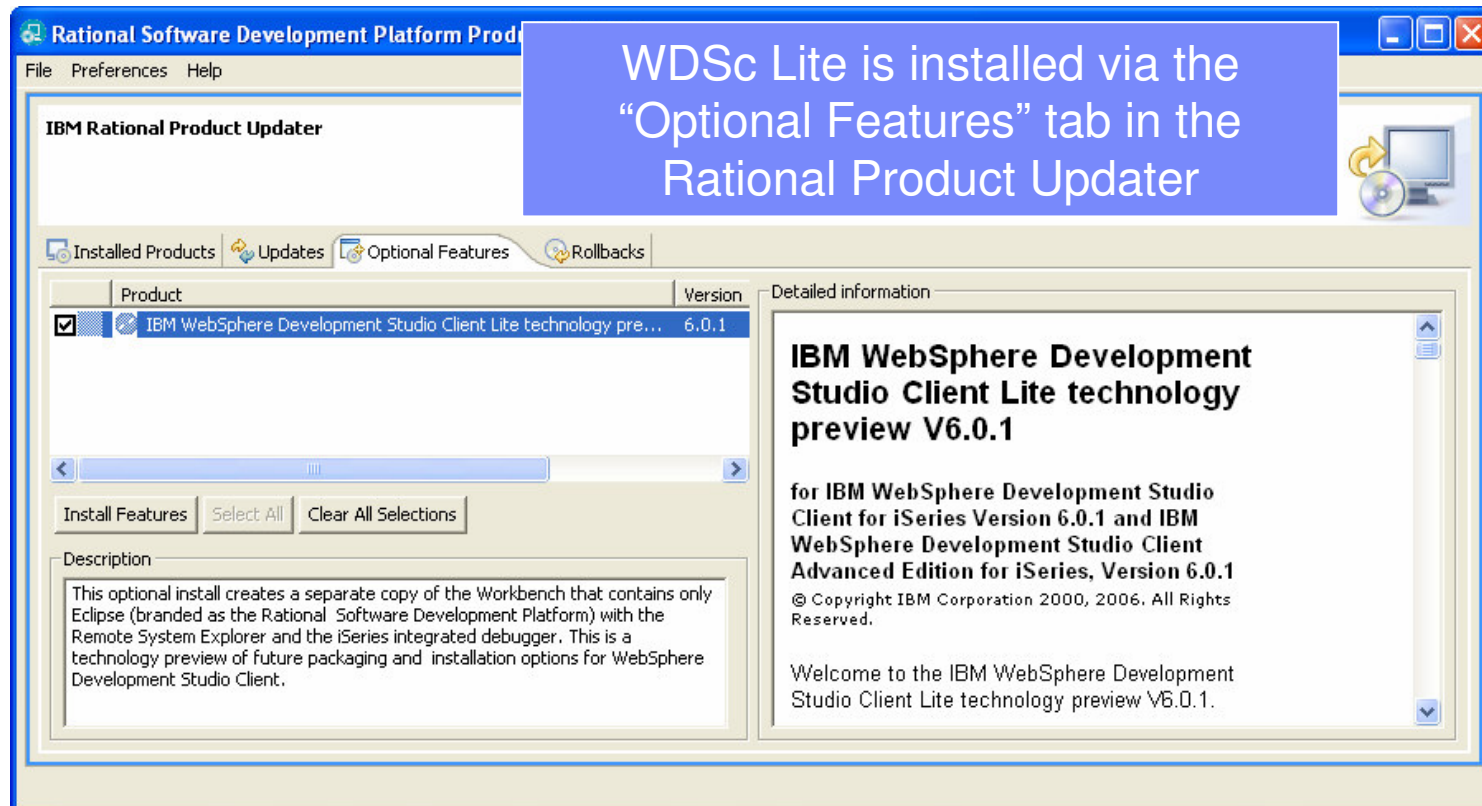
Manual downloads and iSeries PTFs will be made available after electronic GA.

WDS Sc Lite – Technology Preview

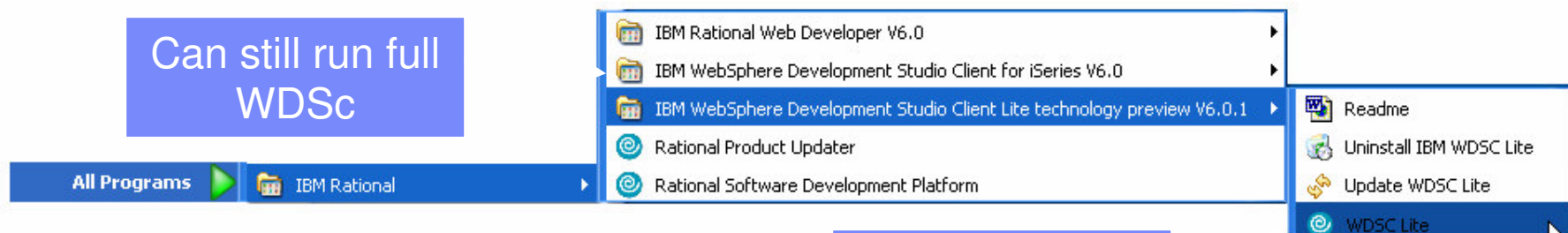
- WDS Sc Lite is a slimmed down workbench with only the:
 - Eclipse workbench (branded as the Rational Software Development Platform)
 - Remote System Explorer
 - iSeries Projects
 - iSeries Integrated Debugger
- Requires only 256 MB RAM !!!
- Optional installation feature for 6.0.1
 - Must already have full WDS Sc 6.0.1 installed
 - Creates a second copy of the workbench
- Fully supported technology preview
 - Preview of future packaging directions ☺



WDS Sc Lite – Installation and Startup



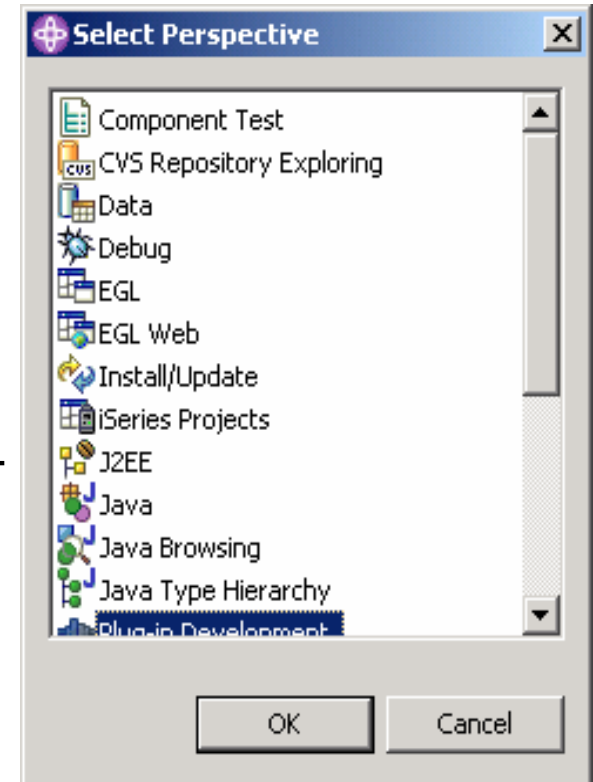
Can still run full WDS Sc



Run WDS Sc Lite

Eclipse User Interface – Select Perspective

- Users work with **perspectives**
 - Collection of **editor** and **views**
 - Tools for a particular task
 - Allows for role-based development
 - Many perspectives are pre-supplied for specific tasks like Java, Web, XML, RPG/CBL
 - Users can create their own perspectives
- The user interface is very Windows-like
 - Eg: views can be re-sized and re-positioned through drag 'n drop



Eclipse User Interface – Perspective

Active persp'v

Other open persp'vs

Editor

View

View

View

Other open views

Name	Type	Attribute	Text	Status
QSYS	*LIB	PROD-SYS	System Library	OK
QHLP SYS	*LIB			OK
QUSR SYS	*LIB		System Library for Use	
RSELAB01	*LIB	TEST-COR	Library of RSELAB user	
RSELAB01	*LIB	TEST-USB	Library of RSELAB user	

Remote System Details | Tasks | iSeries Table View | iSeries Commands Log

Table of contents

Development Studio Client

Remote System Explorer

Subsystems, filters and actions

Editors

Designer

Integrated iSeries Debugger

Summary

RSE Perspective – PDM Drill down, Filtered Access

- iSeries QSYS artifacts
libraries, objects, members, records, fields, modules, etc
- iSeries Jobs
- iSeries IFS Folders and Files, and QShell Cmds
- Local Folders, Files and Cmds
- Remote Unix, Windows, Linux Folders, Files and Cmds



RSE Perspective

Expand to create new "connection"

"Local" connection is pre-defined

New Remote iSeries System Connection

Define connection information

Parent profile: Phil

Connection name: My Server

Host name: TORAS07M

Description:

☒ Verify host name

< Back Next > Finish Cancel

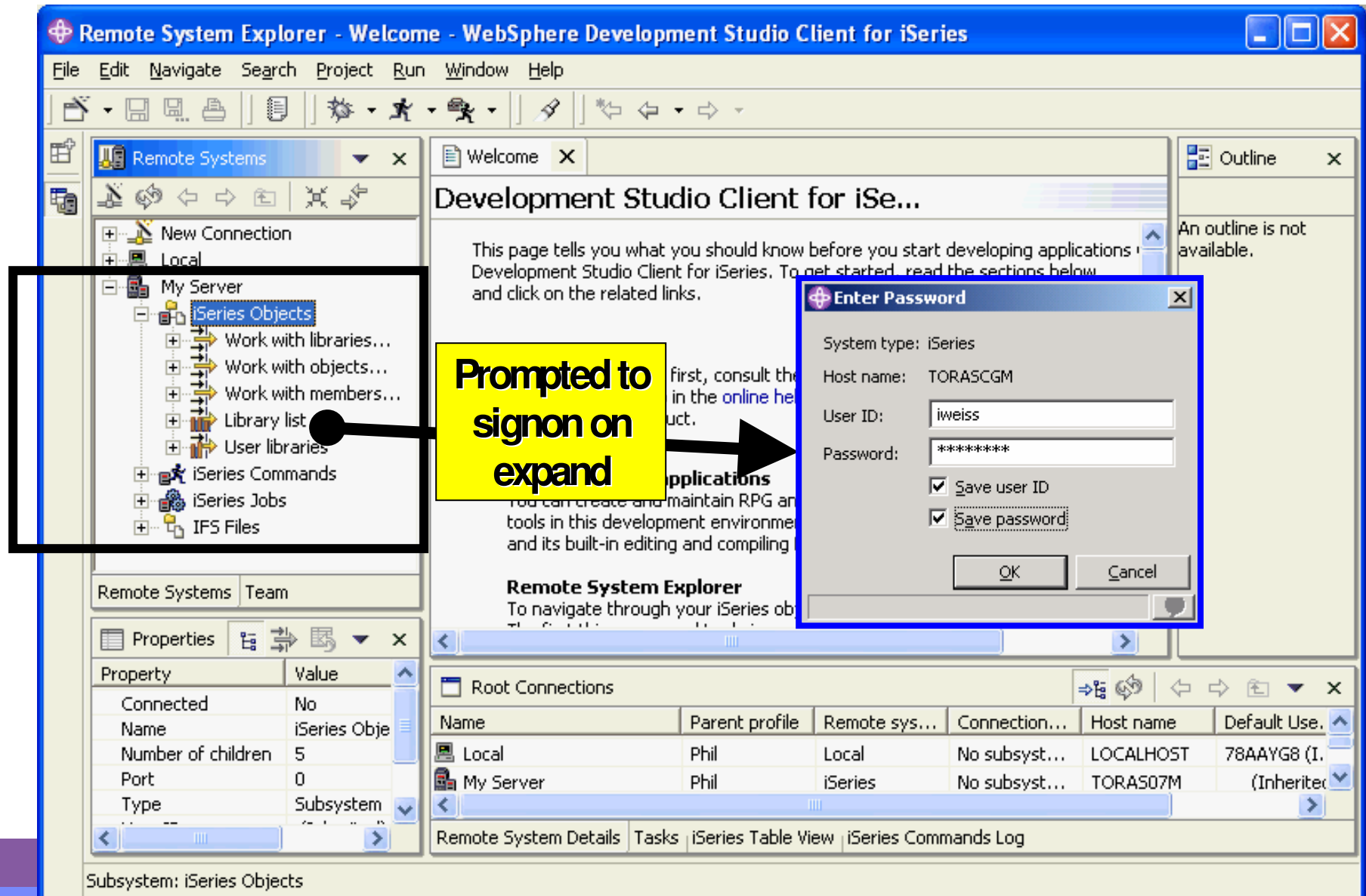
Property	Value
Name	iSeries...
Number of children	0
Type	A prompt for a

Name	Parent p
Local	Phil

Remote System Details

A prompt for a new connection: iSeries...

RSE Perspective



RSE Perspective

Remote System Explorer - Welcome - WebSphere Development Studio Client for iSeries

File Edit Navigate Search Project Run Window Help

Remote Systems

- New Connection
- Local
- My Server
 - iSeries Objects
 - Work with libraries...
 - Work with objects...
 - Work with members...
 - Library list**
 - QSYS.*lib.prod-sys
 - QSYS2.*lib.prod-sys
 - QHLPYS.*lib.prod-sys
 - QUSRSYS.*lib.prod-sys
 - COULTHAR.*lib.prod-c
 - QTEMP.*lib.test-usr
 - POPA1TP270.*lib.prod-
 - POPA1TD270.*lib.prod-
 - POPA1RP270.*lib.prod-
 - POPA1RR.*lib.prod-usr
 - QGPL.*lib.prod-usr
 - POPA1RS270.*lib.prod-
 - GUITEST.*lib.prod-usr

Library RSELAB01 (20 Objects)

Name	Type	Attribute	Text	Status
CLC1	*PGM	CLLE	debuggable, calls Payrollid, parm workstation num	OK
CLR1	*PGM	CLLE	debuggable, calls Payrollg, parm workstation num	OK
MYCOMPILE	*PGM	CLLE		OK
PAYROLLD	*PGM	CBLL	no errors	OK
PAYROLLG	*PGM	CBLL		OK

Command: Normal Prompt... Run

Messages: Details... Show Log...

Icon changes when connected

The screenshot illustrates the RSE Perspective in the WebSphere Development Studio Client for iSeries. A yellow callout box with the text "Icon changes when connected" points to the icon of the "Library list" in the Remote Systems tree. The icon is a small book with a green cross, indicating it is connected. Another arrow points from the callout box to the icon of the "Library RSELAB01" in the bottom pane, which also has a green cross, indicating it is connected. The bottom pane displays a table of objects in the library, including CLC1, CLR1, MYCOMPILE, PAYROLLD, and PAYROLLG, with their respective types, attributes, and status.

What is an RSE “Connection”?

- Represents a remote system
 - Given an arbitrary name
 - Multiple connections to one system permitted
- Contains environment info
 - Such as library list and environment variables
 - Specified in properties dialogs of connection
- Used in many Development Studio Client for iSeries tools
 - RSE, iSeries Projects, Java Tools, Web Tools, WebFacing

