

# WDSc: Changing the face of iSeries Application Development

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## The Changing Face of AD Tools



The screenshot displays the WebSphere Development Studio Client for iSeries interface. The main window shows a code editor with a table of data. The table has columns for 'Column 1' and 'Replace'. The data includes various codes and values, such as 'INKC', 'ACODE', 'IN50', 'ACRE', 'IFEQ', 'ANDEQ', 'MOVE', 'WRITE', 'UPDATE', 'ELSE', 'RCRSN', 'D', and 'C'. The table is titled 'CL0N01Factor1+++++0pcode(E)+Factor2+++++Result+'. The interface also shows a 'Remote System Explorer' window on the left, displaying a tree view of the system structure. The status bar at the bottom indicates 'Autosaving as C:\WDT400\THP\02AA69B0.IRP'.

## Progression of OS/400 AD Tools

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### In the beginning, there were the "green screen" tools

- PDM, SEU, SDA, RLU

### Then came the CODE/400 graphical toolset

- CODE Editor, Designer, Project Organizer, Debugger
  - Packaged with VARPG

### Next was WDT/400 - WebSphere Development Tools

- CODE/400 + VARPG + Webfacing

### Now, there's WDSc - WebSphere Development Studio Client

- Includes the CODE & VARPG toolsets (called "classic" tools)
- Mainstream WDSc tools are fully integrated into the workbench
  - More flexible environment for multi-language, multi-platform and web based development projects
  - Java-based toolset with multiple "perspectives" for different types of development tasks
    - e.g., iSeries projects, database, XML, Java, web
  - Designed to accommodate third party plug-in tools
    - Easily extendable, less reliance on IBM software alone

## For RPGers: Decisions, Decisions ...

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### For host-based RPG/COBOL developers, what to choose?

- Use CODE tools still included in the WDSc package, or
- Use WDSc workbench tools

### CODE toolset

- Still needed for DDS designer, but what about editing and navigating?

### One obvious decision factor: workstation size

- CODE runs fine on Pentium II, 128-256 MB RAM
  - and provides a very rich and robust set of tools for traditional RPG/COBOL/DDS development
- Java-based Eclipse toolset requires MUCH larger workstation footprint
  - Intel Pentium II (Pentium III 500 MHz or faster recommended)
  - 512 MB RAM (768 MB RAM recommended - REALLY!)
  - 1.7 GB free hard drive space
    - + 700 MB temporarily required during installation

IBM  
says...

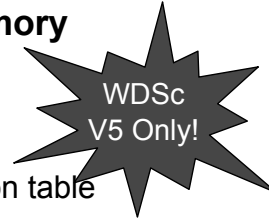
- Handwriting is on the wall: put in your HW upgrade requests now!

## **Decisions, Decisions ...**

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### **IF you have enough WS horsepower & memory**

- Some differences in editor function
  - Each toolset has it's own "idiosyncracies"
  - You may prefer one way or the other
- Check IBM's FAQ page for an editor comparison table
  - Only pure functional differences
  - Some things are not compared in this chart
    - Such as Compare and Caching exist in both places, but work very differently
- CODE extensions do not port to workbench
  - Enhancing workbench tools can be done in Java, but is much more complex
    - See eServer Magazine, iSeries edition, June 2003 for a "simple" example!
- For development of "less traditional types" of applications, the workbench offers more function and flexibility
  - e.g., XML, Java, Webfacing



### **Ultimately, it's a personal decision**

- IBM says CODE will disappear "at some point in the future"
  - It is a matter of "when" to switch rather than "if"

## ***iSeries Development Tools: WDS/400***

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### **New Packaging Philosophy - IBM's idea is to build community**

- Common tools for the entire community

### **BPs/ISVs can pre-req**

- Knowing that customers own the tools already
  - So there is no stack price
- Aldon, Soft Landing, ASC and others are already integrating

### **Intend to build best-of-breed tools for modern apps**

- Including WebFacing to move your 5250 applictaions to the Web
- New tooling for XML
- New tools for database
- New Java support
- And more .....

### **All based on the new public domain Eclipse workbench**

## Development Studio

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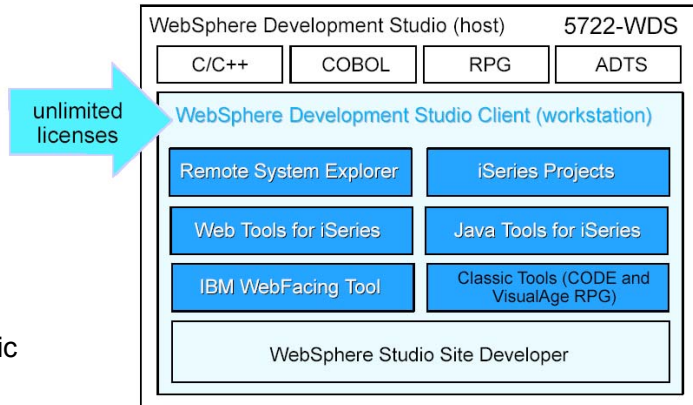
### Packaging for Version 5.0

#### Host Components

- All the compiler
- Plus ADTS
  - SEU, PDM, ....

#### Client Components

- Eclipse based workbench
  - Plus iSeries specific tools such as WebFacing
- CODE
- VisualAge RPG



The base version is "free"

## Development Studio Advanced

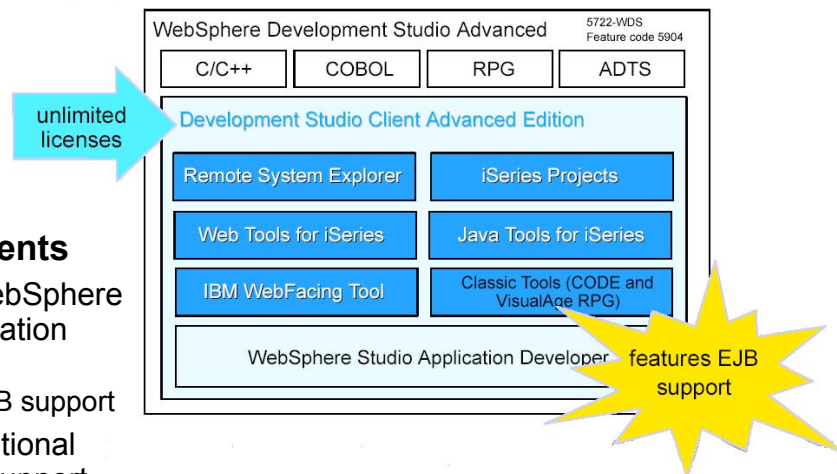
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### Packaging for Version 5.0

#### Client Components

- Based on WebSphere Studio Application Developer
  - Includes EJB support
- Includes additional WebFacing support

**Includes all tools in the standard package**



## Remote System Explorer

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### PDM-like drill-down and filtered access to:

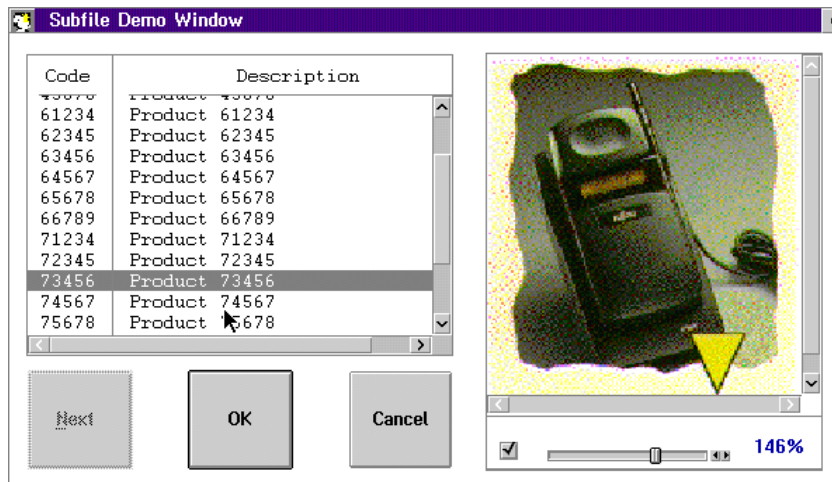
- iSeries libraries, objects, members, records, fields
- iSeries Jobs
- iSeries IFS Folders and Files
- Linux (including iSeries LPAR) Folders and Files
- Unix and Windows Folders and Files
- Local Folders and Files
- iSeries Projects
- Likely to be expanded to further platforms in the future

### Project-based, team-sharable development

- CVS enabled
- iSeries tool builders such as Soft Landing, Aldon, MKS and ASC are enabling their change management tools

## Classic Tools: VisualAge RPG

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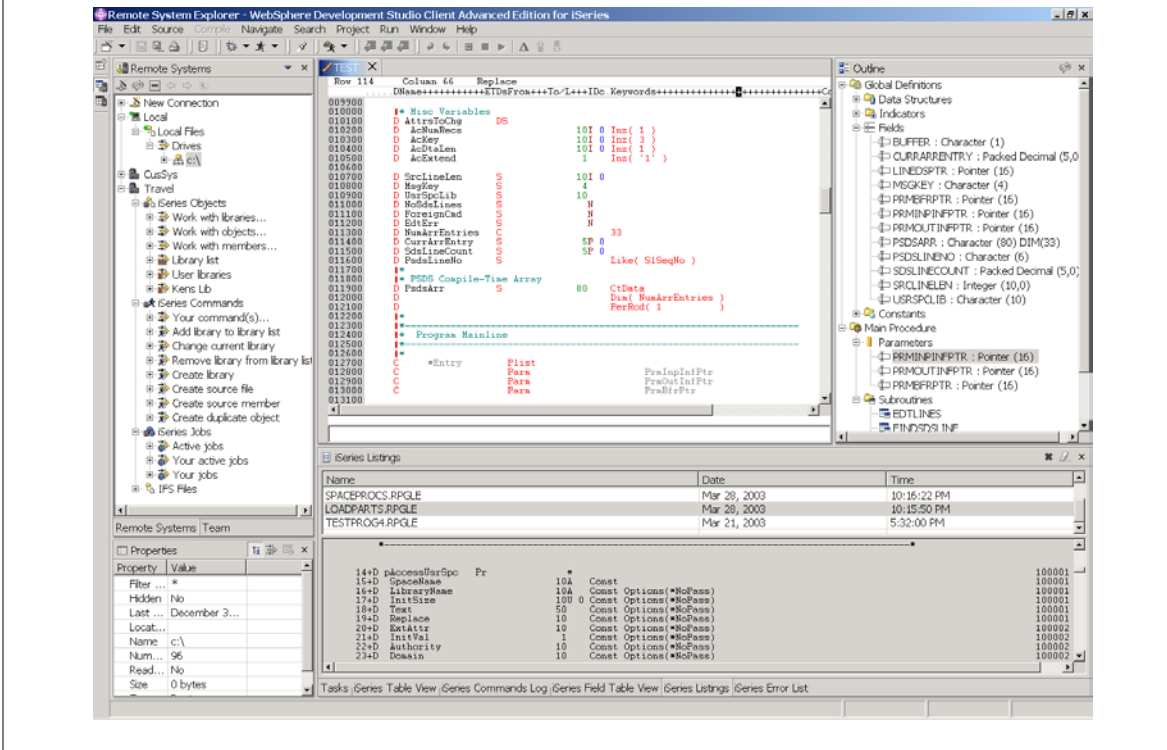


```
C      SUBFILE1      BEGACT      SELECT
C                                  Reads      SubFile1      99
C                                  EVAL        %SetAtr('SUBFDEMO': 'IMAGE': 'FileName')
C                                  = %TrimR(ProdImage) + '.BMP'
C                                  ENDACT
```



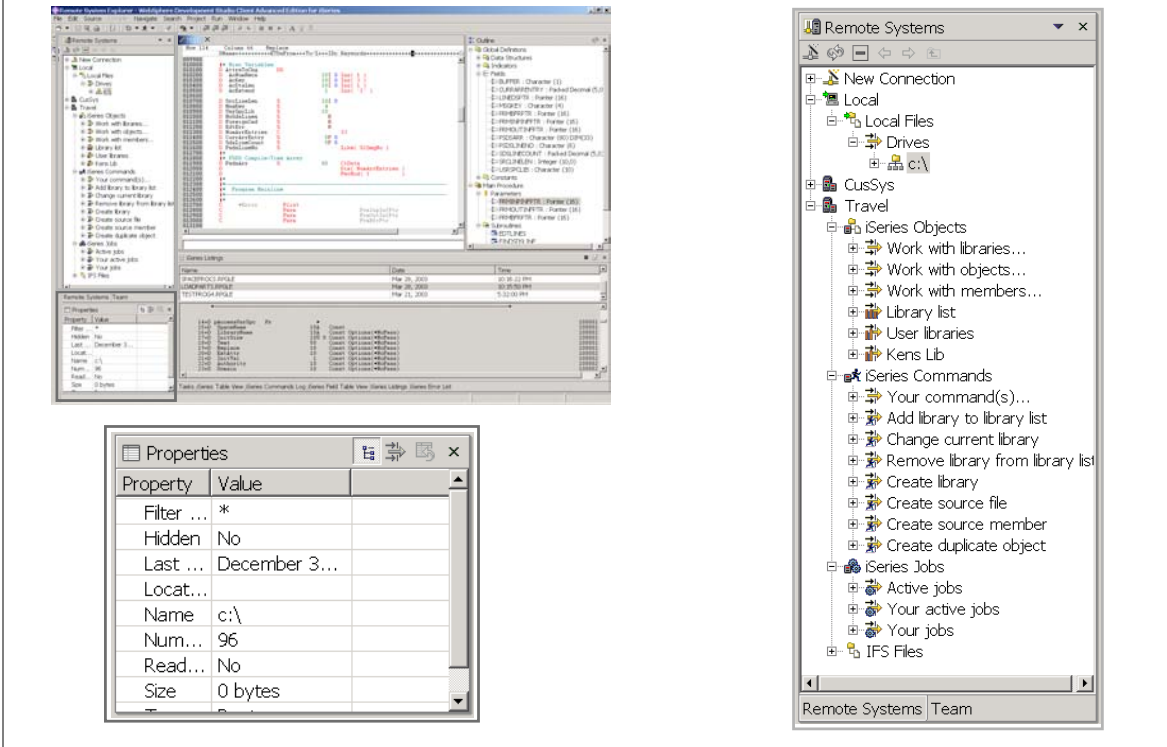
# Remote System Explorer Perspective

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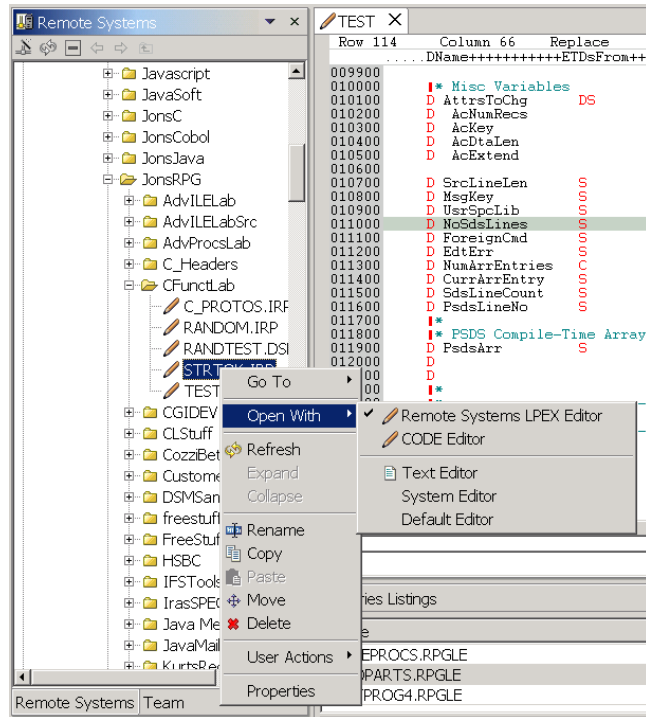


# Systems and Properties

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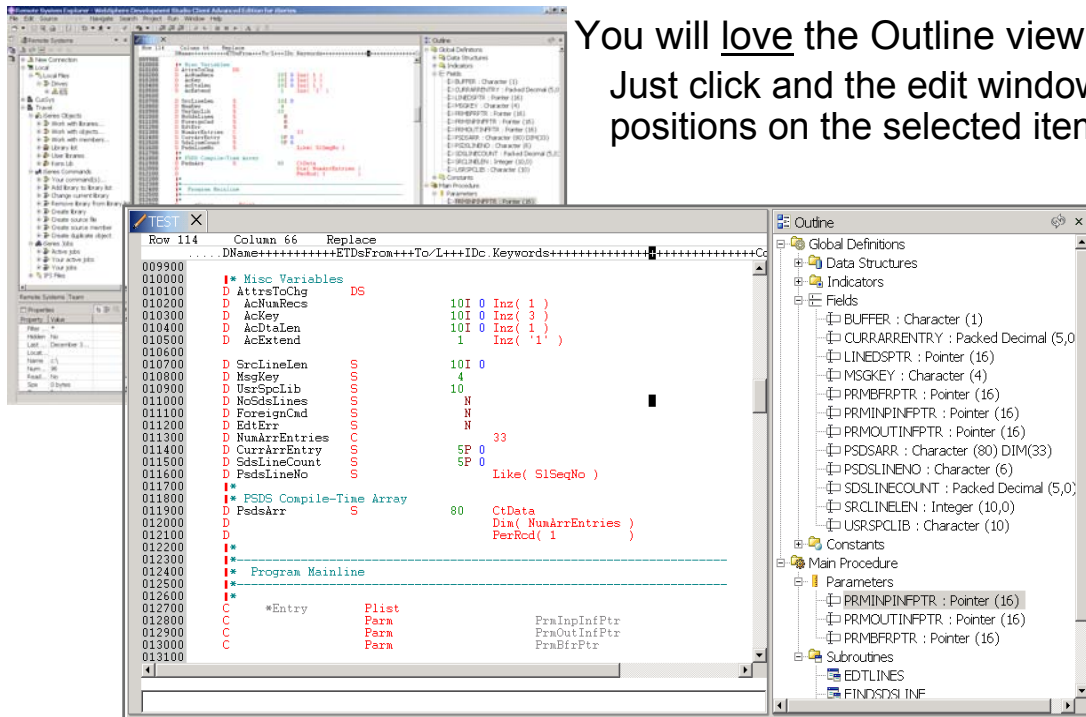
# The "New PDM"

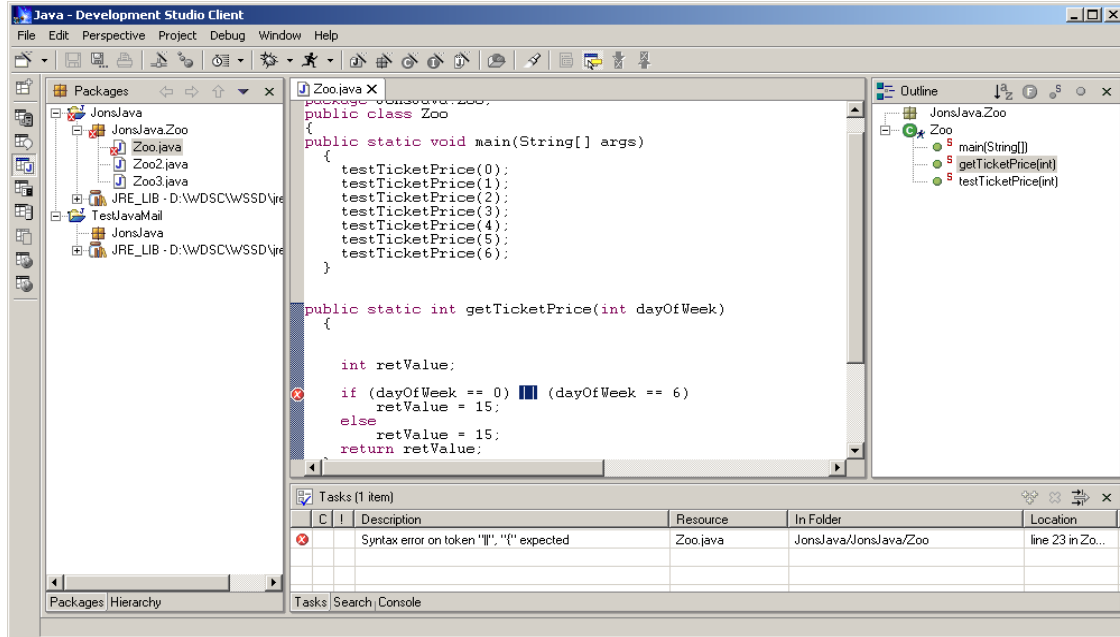


# The "New SEU" - jlpex



You will love the Outline view  
Just click and the edit window  
positions on the selected item





## WebSphere Studio

### Create and manage Web Projects

- Group all files related to the Website
- Check-in and Check-out files
- Publish project to web server
- Register any tool for any file type

### Page Designer

- WYSIWYG editing of HTML, JSPs

### Wizards for creating:

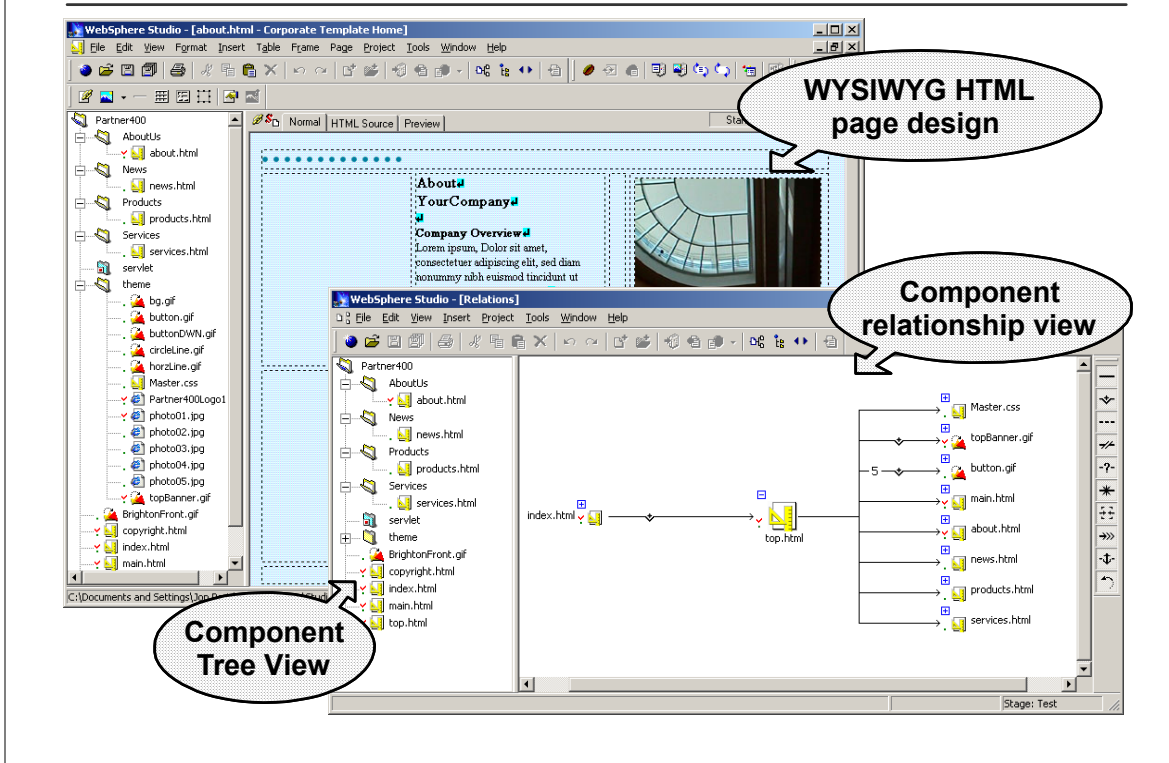
- SQL statements
- JSPs and servlets
  - from SQL statements and Java Beans

### Integration with VAJava

- Read and Write classes, beans, servlets from/to VAJava
- Publish website to VAJava for testing purposes

## WebSphere Studio

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## WebSphere Studio - iSeries Support

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### Display file style Palette Parts in Page Designer

- Smart entry fields, labels, buttons, subfile, etc

### Program-call Wizard

- For using new and existing iSeries \*PGM/\*SRVPGMs
  - Must be non-interactive programs
    - Use WebFacing for interactive programs
- Describes \*PGM/\*SRVPGM input and output parameters

### Generate required output components

- HTML Form prompting for input
- JSP to display output
- Java Bean to call \*PGM or \*SRVPGM
- Servlet to glue it all together

### WebSphere Application Server (WAS) Configuration Wizard

- Configures your application on iSeries WAS

## WebFacing - New Life for 5250 Apps

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### Allows existing applications to utilize the browser

- Program does not even need to be recompiled
  - May need small changes to accommodate unsupported DDS features
  - Or to support additional features only available to browser users
    - For example to supply the details of an image to be displayed
- Program can now work with 5250 or Browser
- WebFacing is not strictly a screen scraper
  - Display file buffer is intercepted in Workstation Manager
    - No 5250 control chars to strip off so faster than conventional methods
  - Conversion hit at development time, not runtime
- Designed to allow For BPs/ISVs to quickly convert to Web
  - No limitation to customization of output
  - No-cost runtime (\*\* Except that it pre-reqs WAS)

### The latest announcements:

- WebFaced Applications can now run as batch
  - No Interactive required
  - The bad news is that this appears to apply only to the new hardware

## Your Choice: Green Screen or GUI

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The image shows two side-by-side windows. On the left is a green screen terminal window titled 'Session A - [24 x 80]'. It displays a sign-on screen for 'Appcon/IBM Test System...' with fields for 'Identification...', 'Password...', 'Company...', and 'Division...'. On the right is a Microsoft Internet Explorer browser window titled 'APPCON - Microsoft Internet Explorer'. It displays the same sign-on screen as a web page, with the same fields and buttons. A speech bubble points to the green screen window with the text 'Run your 5250 Applications like this'. Another speech bubble points to the browser window with the text 'Or like this!'.

## **WebSphere Test Environment - WTE**

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### **Full copy of WebSphere Application Server embedded in the IDE**

- Instant/easy testing of Web projects within development environment

### **Standalone all-in-one testing**

- No dependency on WAS installation or availability

### **Easily debug prior to publish/deploy**

- Supports configuring multiple Web apps

### **Access to WAS Administration Client**

- Supports start, stop, restart, publish actions for WTE, local or remote WAS or local TomCat

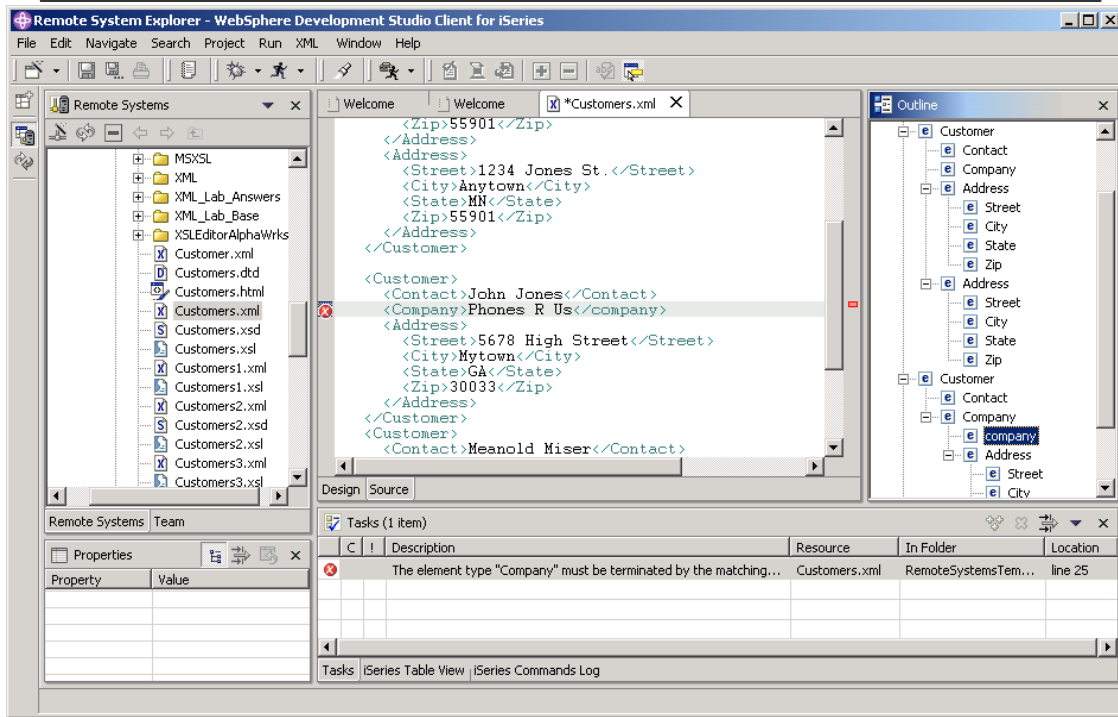
## **WDS*c*: XML Tools**

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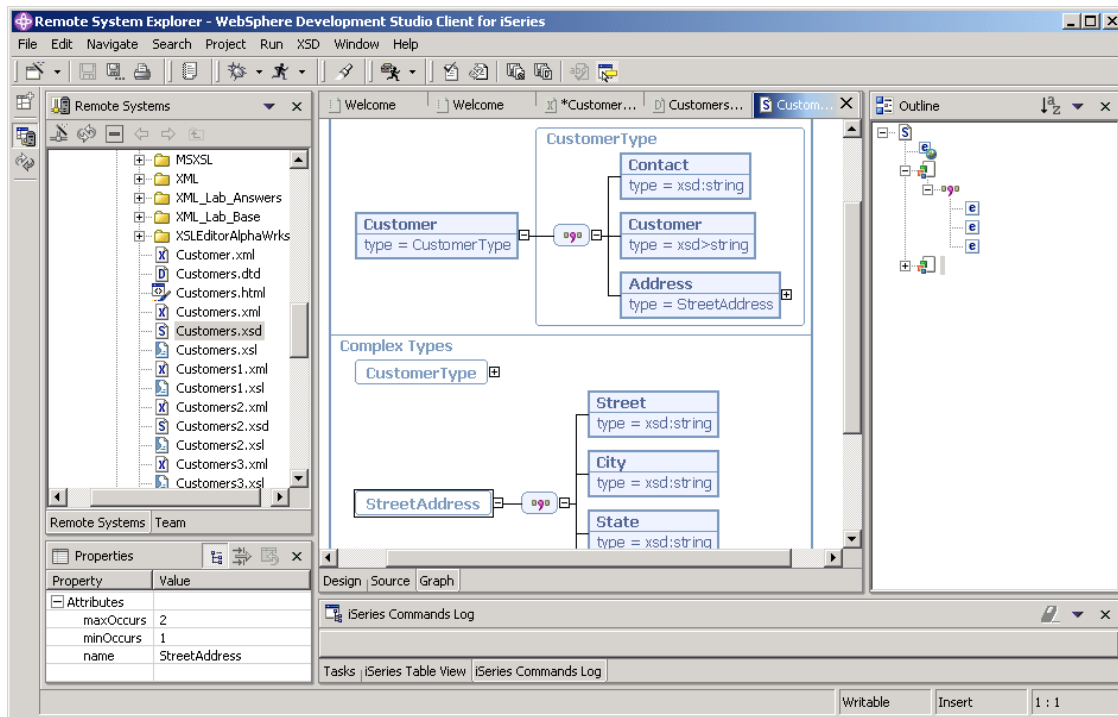
### **XML Perspective and XML Tools**

- XML Editor
  - For creating and viewing XML files
- DTD Editor
  - For creating/viewing Document Type Definitions
- XML Schema Editor
  - For creating, viewing and editing XML Schemas
- XML to XML Mapping Editor
  - To map source XML files to a target XML file
- XSL Trace Editor
  - Visually step through an XSL transform
- XML and SQL Query Wizard
  - Creates an XML file from an SQL query
- RDB to XML Mapping Editor
  - Maps relational tables to a target XML

# XML Source Editor



# XML Schema Graphical View



## Summary

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### Workstation-based AD Tools are here to stay

- Even for traditional host-based applications
- Your choice:
  - CODE classic toolset
  - Eclipse-based toolset, including RSE, iSeries projects, jLPEX
  - Or a combination
- Both toolsets are included in the latest Websphere Development Studio for iSeries product with your compilers

### Try them

- You have nothing to lose
- And productivity to gain!
  - Your learning investment is protected regardless of your future development tasks