

WebSphere and the iSeries You Can Do It !!!!!!!

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WebSphere

! the fastest way to dynamic e-business !

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Acknowledgement and Disclaimer

Acknowledgment:

Many people contributed to this presentation. In particular thanks goes to various member of the iSeries AD Team in the IBM Toronto Development Laboratory.

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Agenda

- Architecture of the Web
- Getting Ready for the Web
 - tools that can help
- Faster Ways the Web
 - building solutions faster

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How to Move iSeries Apps to the Web

1. Extend Core Business Processes and Applications to the Web

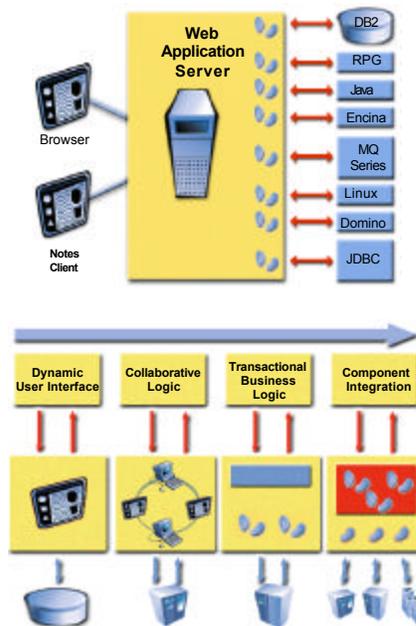
- Browser based User Interface
- Minimal change to underlying applications
- Minimal initial investment in skills

2. Add New Logic to Existing Applications

- Interoperability between Java and RPG, COBOL, etc.
- Full application integration

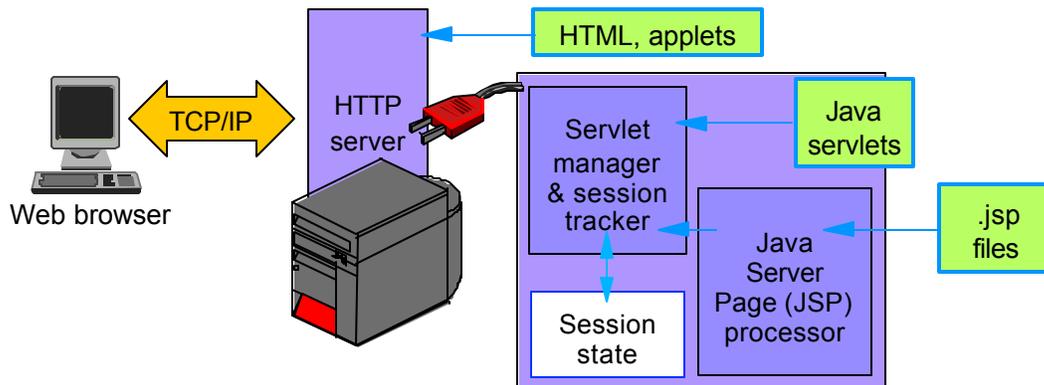
3. Build New eBusiness Applications

- eBusiness applications written in Java, RPG, COBOL with XML, etc.
- JSPs, Servlets



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WebSphere App Server



- **WebSphere App Server** is:
 - A plug-in to the HTTP server for running Java servlets
 - Available on many platforms - OS/400, OS/390, NT, AIX, ...

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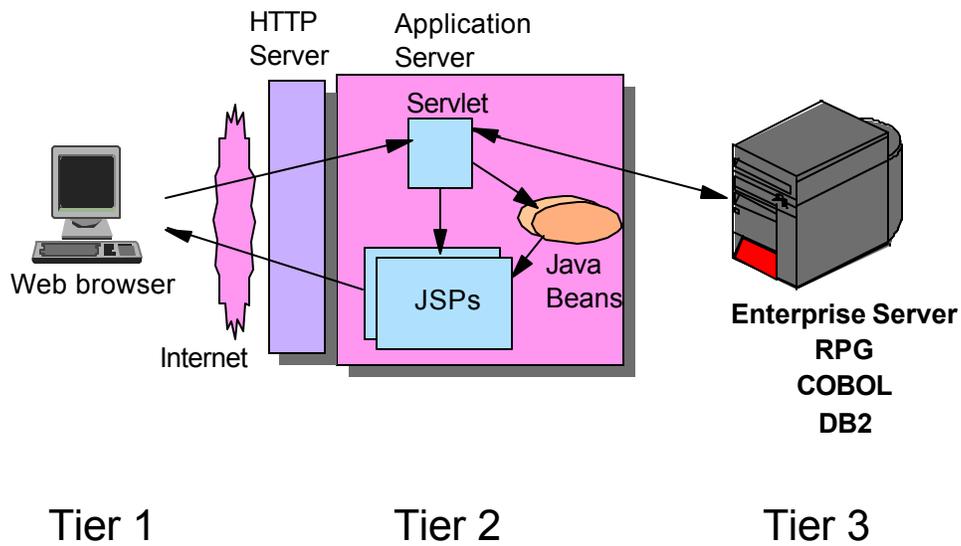
Servlets and JSPs

- **Servlets**
 - A Java class plug-in to the application server
 - Acts as the Web application controller
 - Processes and routes browser requests to Java helper objects
- **JavaServer Pages (JSPs)**
 - Encapsulate the presentation (view) of the application
 - Allows a clean separation between presentation and dynamic content
 - Use Java scriptlets to reference Java beans for dynamic application data
- **Java Beans**
 - Encapsulate dynamic application data
 - Populated by the servlet

Servlets, JSPs, and Beans are the resources of Web applications. They allow the generation of dynamic web pages.

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Web App Architecture



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Getting Ready for the Web

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AS/400 AD Today

Applications

- Monolithic, template driven (copy/edit)
 - limited modularity via ILE
- Mixture of
 - in-house developed
 - OR
 - purchased with customizing

Application Development

- ADTS (PDM, SEU, SDA, etc)
- Home grown change management
- Some non-IBM tooling - generators, SCM

Languages

- RPG III, COBOL/400
- Some RPG IV, Some ILE COBOL
 - limited use of RPG IV procedures
- very little production Java

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AS/400 AD Tomorrow

Applications

- Modular, binary reuse thru components:
 - ILE Service Programs, Java Beans
 - WebServices
- Vendor/home-grown components
- GUI: Java, WebSphere
- Clients: Windows, Web

Application Development

- Windows (or Web) based
- Vendor Change Management tool
- Division of skills:
 - Business Logic vs System vs Web

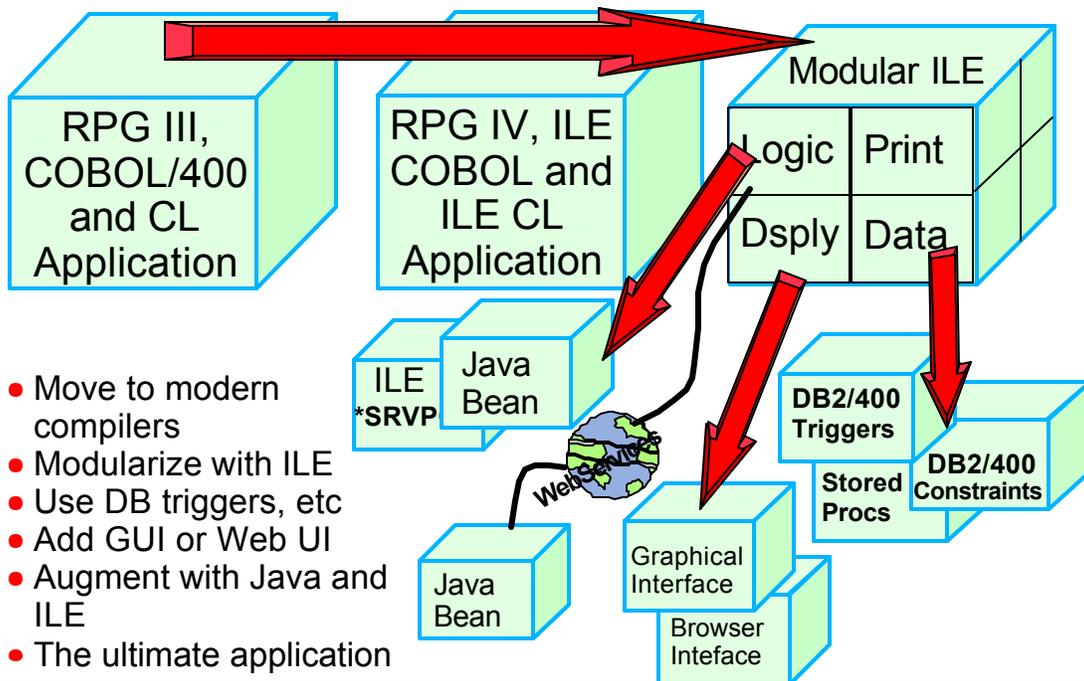
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eBusiness Ready??

- Can't set out to re-write all applications at once
 - changing technologies
 - tools/products evolving
- Tactical Planning
 - need to meet short-term objectives
 - may choose a short-term solution
- Strategic Planning
 - how technology/implementation will affect your business
 - provide a competitive edge
 - looks past the issues of cost and installation
 - may be opportunity to re-evaluate things such as database design, security, application development

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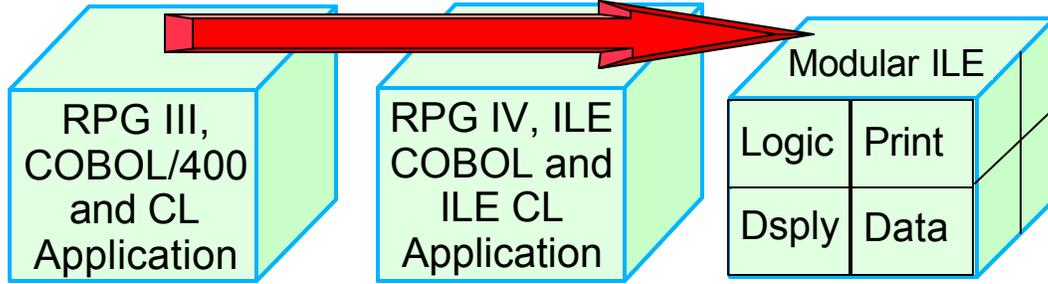
All the Pieces ...



- Move to modern compilers
- Modularize with ILE
- Use DB triggers, etc
- Add GUI or Web UI
- Augment with Java and ILE
- The ultimate application

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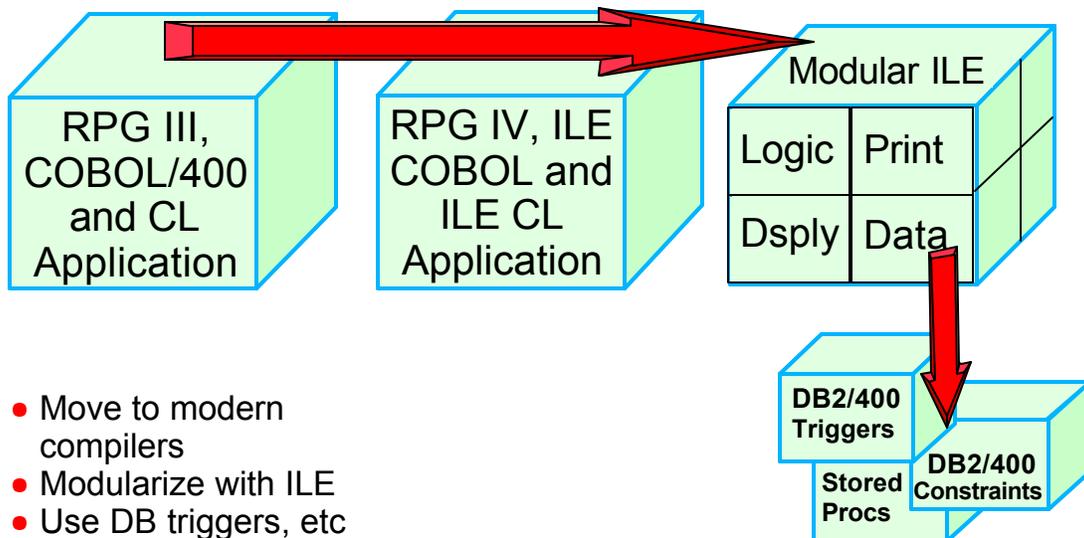
Phasing In ...



- Move to modern compilers
- Modularize with ILE

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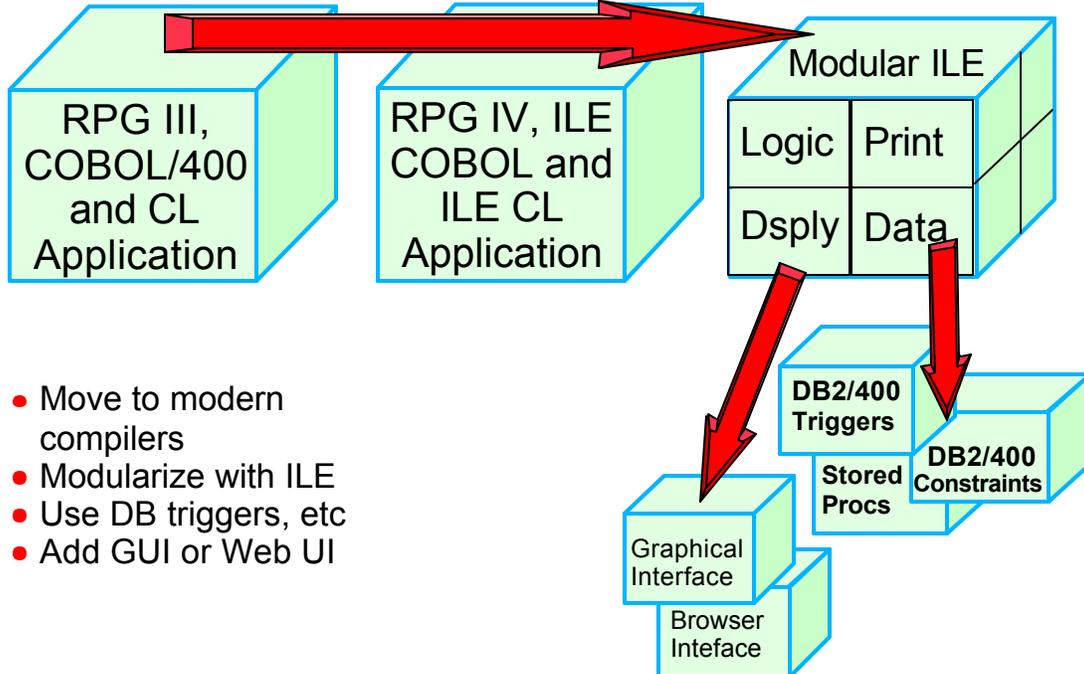
DB2 Functions Added ...



- Move to modern compilers
- Modularize with ILE
- Use DB triggers, etc

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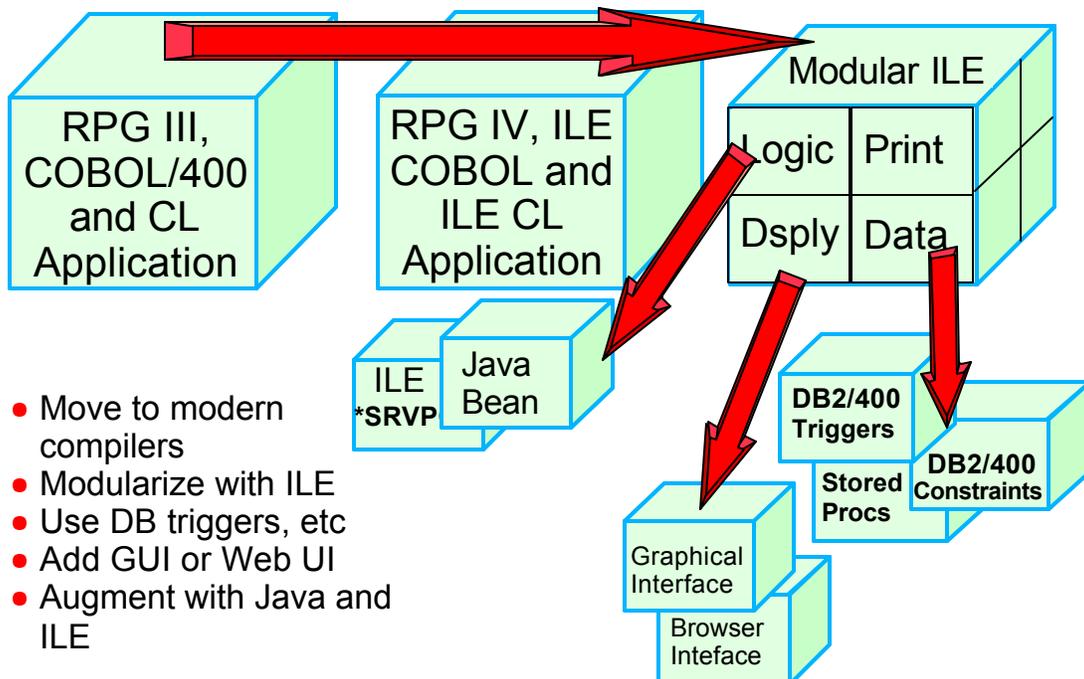
Change the Look of the Application ...



- Move to modern compilers
- Modularize with ILE
- Use DB triggers, etc
- Add GUI or Web UI

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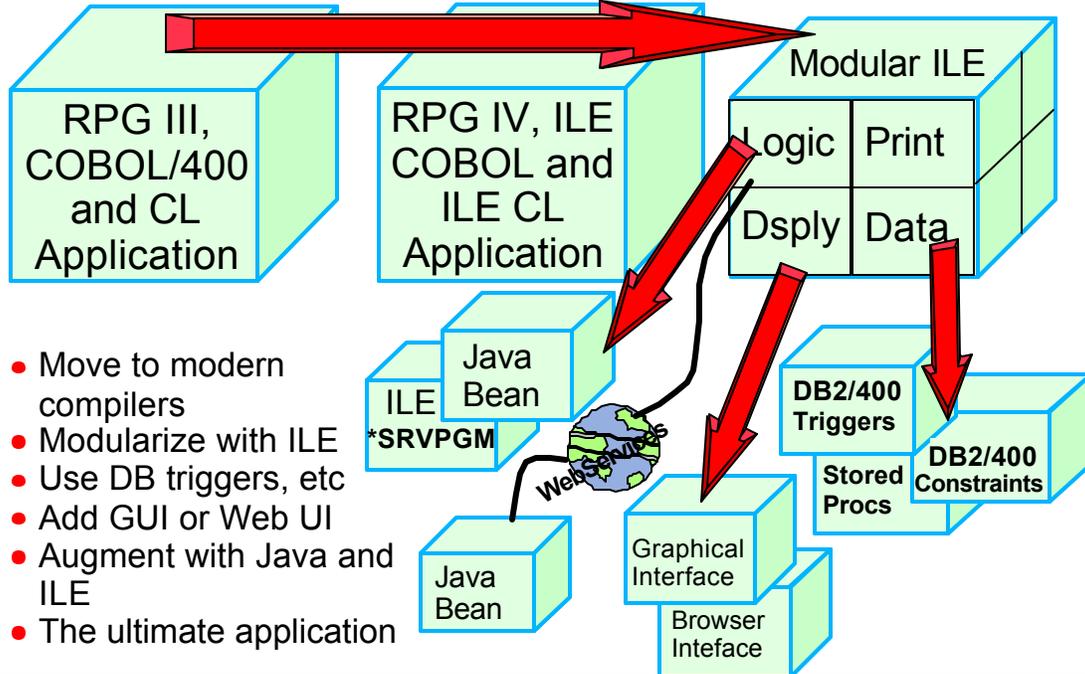
Extend Application with New Function ...



- Move to modern compilers
- Modularize with ILE
- Use DB triggers, etc
- Add GUI or Web UI
- Augment with Java and ILE

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Ready to Try the Ultimate?? WebServices ...



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Why Change?

Demand

- For GUI
- For more function, more often
- For new clients: web
- For new business models

Reality

- No IBM investment in RPG III, COBOL/400 or ADTS
 - Focus is RPG IV, ILE COBOL, Java and the Web
 - Focus on workstation based tooling

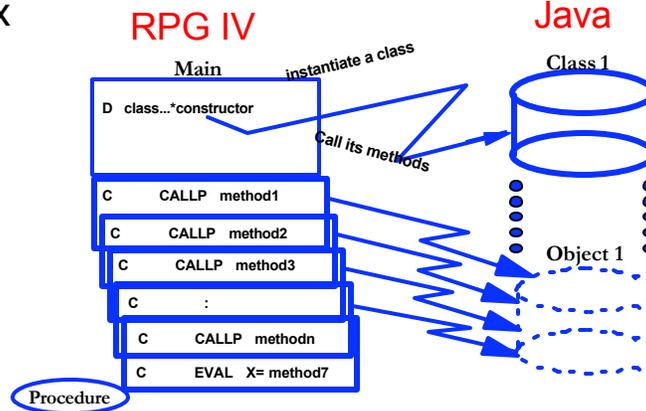
Skills

- Attract and keep

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Modern RPG IV

- V5R1 RPG IV focussed on interoperability with Java
 - complexity of JNI interface disguised within RPG IV syntax



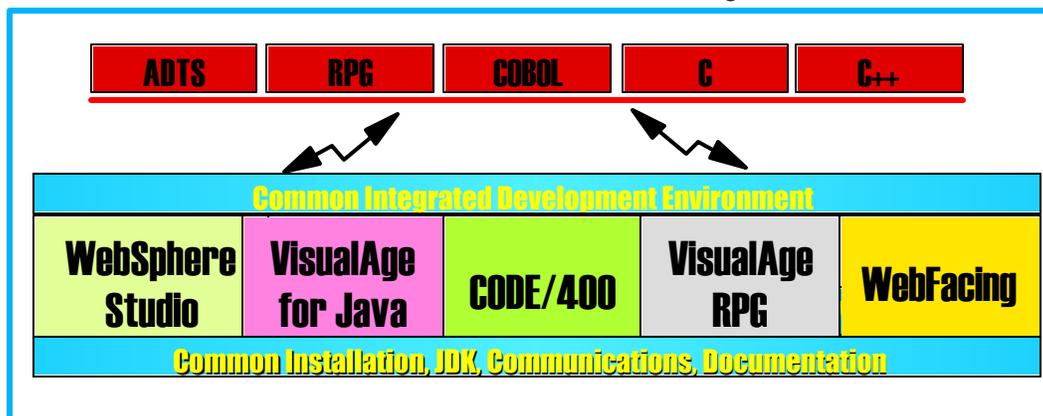
- direct call to Java methods coded as RPG IV call to external procedures

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Tools to Get You There ...

WebSphere Development Studio for iSeries

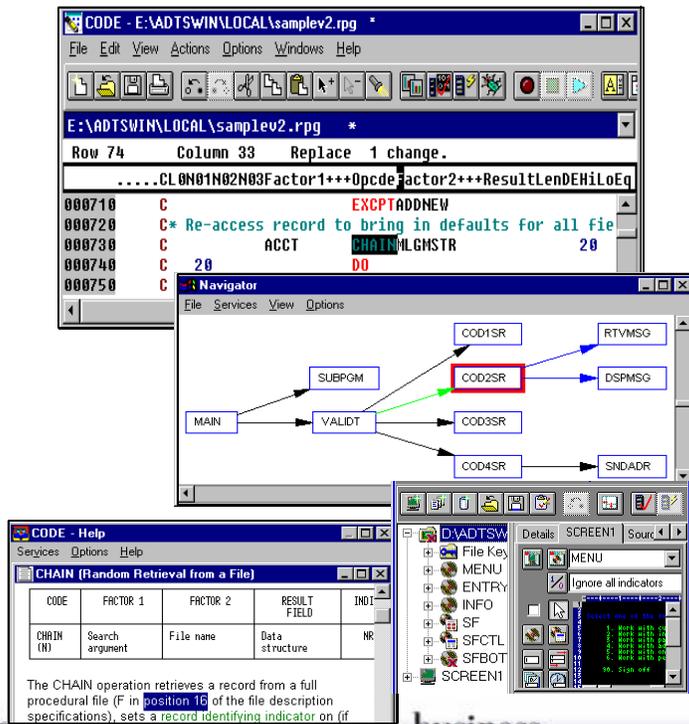
- Host components
 - ADTS
 - RPG
 - COBOL
 - C
 - C++
- Workstation components
 - CODE
 - VisualAge for Java
 - WebSphere Studio
 - VisualAge for RPG
 - WebFacing



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CODE/400

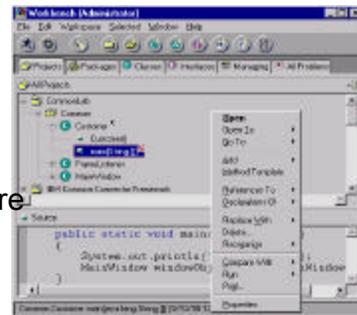
- iSeries-aware tool suite:
 - CODE Editor
 - Language aware editing for RPG, COBOL, CL, C, C++, DDS, Java, VARPG
 - Program Verifiers for RPG, COBOL, DDS
 - Language Reference manuals online, F1 enabled
 - CODE Remote Compile
 - Remote Compile with Error Feedback
 - GUI Compile Options Dialogs
 - CODE Designer
 - WYSIWYG design of DSPFs, PRTFs, PFs
 - CODE Distributed Debugger
 - Remotely debug RPG, COBOL, CL, C, C++, Java



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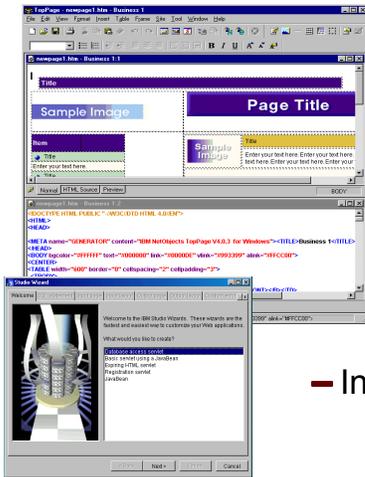
VisualAge For Java - Professional

- Full IDE for Java
 - Repository / Workbench
 - Supports version control
 - Incremental, automatic compilation
 - Built-in functionality:
 - Editor, debugger, JDK, WebSphere Application Server (Standard), HTTP Server, ...
 - Visual Composition Editor
 - Visually layout and "wire" GUI and non-GUI
 - Support for Java
 - Classes, Beans, Applications, Servlets
 - EJBs if Enterprise Edition purchased separately
 - Support for 3rd party SCM tools
 - SourceSafe, TeamConnection, ClearCase, PVCS, Aldon Affinity, ...



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WebSphere Studio - Standard Edition



- Full IDE for Web
 - 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 servlet from SQL statements
 - ✓ JSPs and servlet from Java Beans
 - Integration with VJava
 - Read classes, beans, servlets from VJava
 - Write classes, beans, servlets to VJava
 - Publish website to VJava for testing purposes

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Are You Ready for Java?

RPG
IV, ILE
COBOL

ILE

Java

CODE/
400

WebSphere
Studio

Hard
work!

- Programming skills
 - free form, expressions, functions
 - modularity, encapsulation, design-for-reUse
 - components, event-driven
 - java knowledgeable
- Tools skills
 - windows based tools
 - web, java tooling comfort
- Programs
 - separation of UI logic from Business logic
 - business logic externally accessible (APIs or stored procedures)

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Are There "Faster" Ways to WebSphere??



YES!!!

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Your Options

Buy a Web-Enabled Application

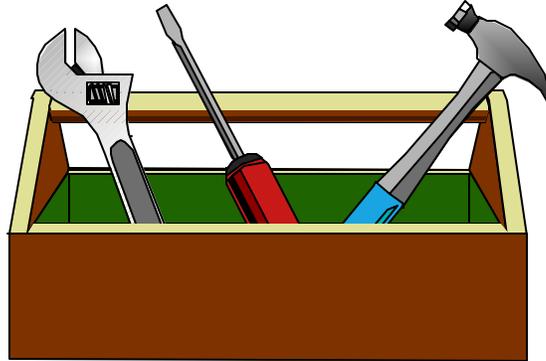
1. many vendors have already converted their code
 - they have already been through the coding

Build a Web-Enabled Application

1. WebFacing
2. WebSphere Commerce Suite
3. Domino
4. Host on Demand
5. Host Publisher

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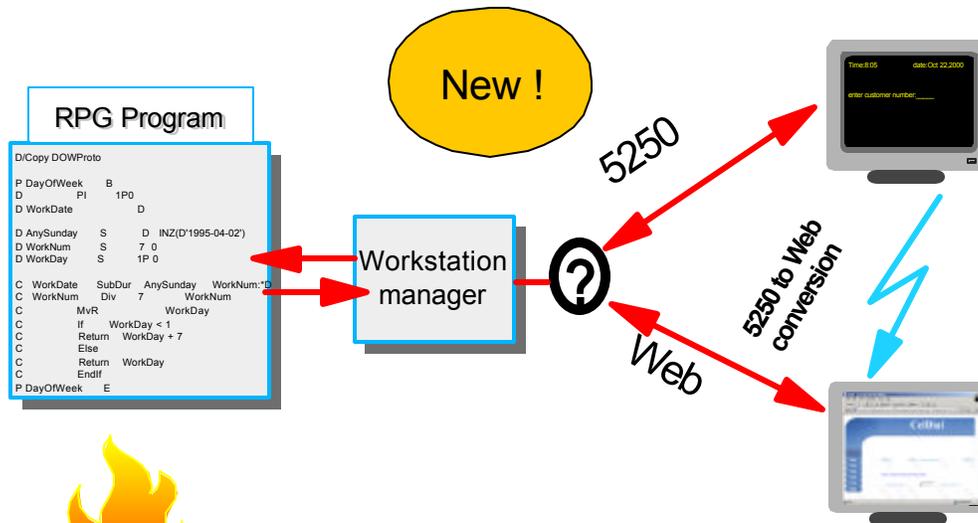
Can I Build One??



YES!!!

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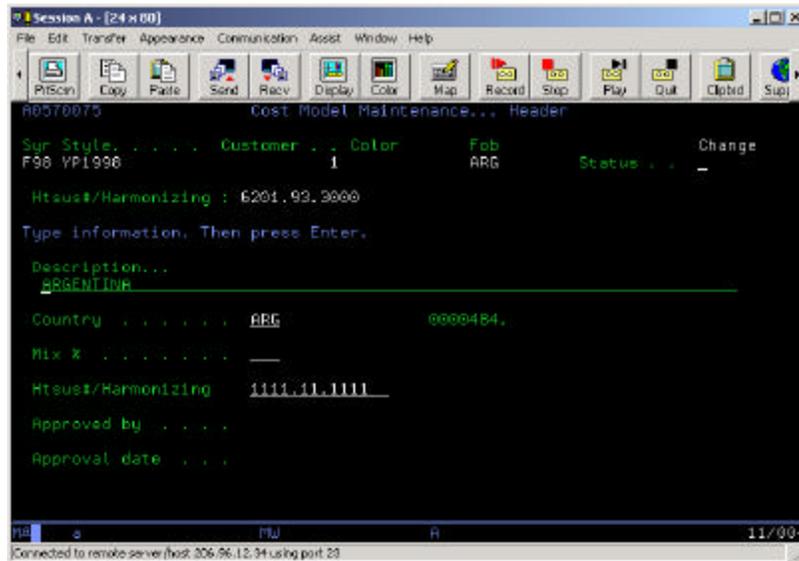
What is WebFacing ?



You can use both the 5250 and web UI !

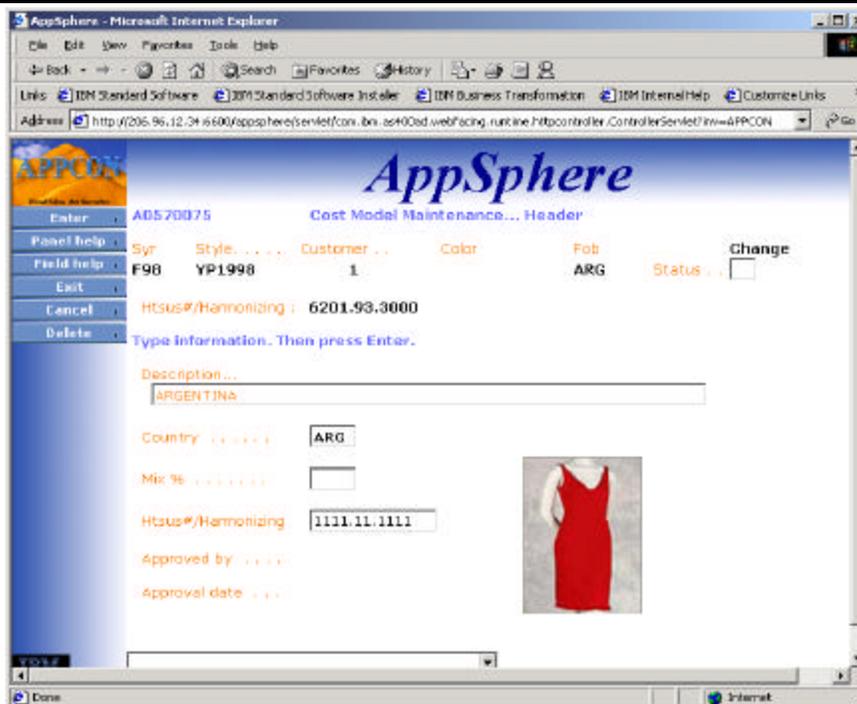
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Before WebFacing



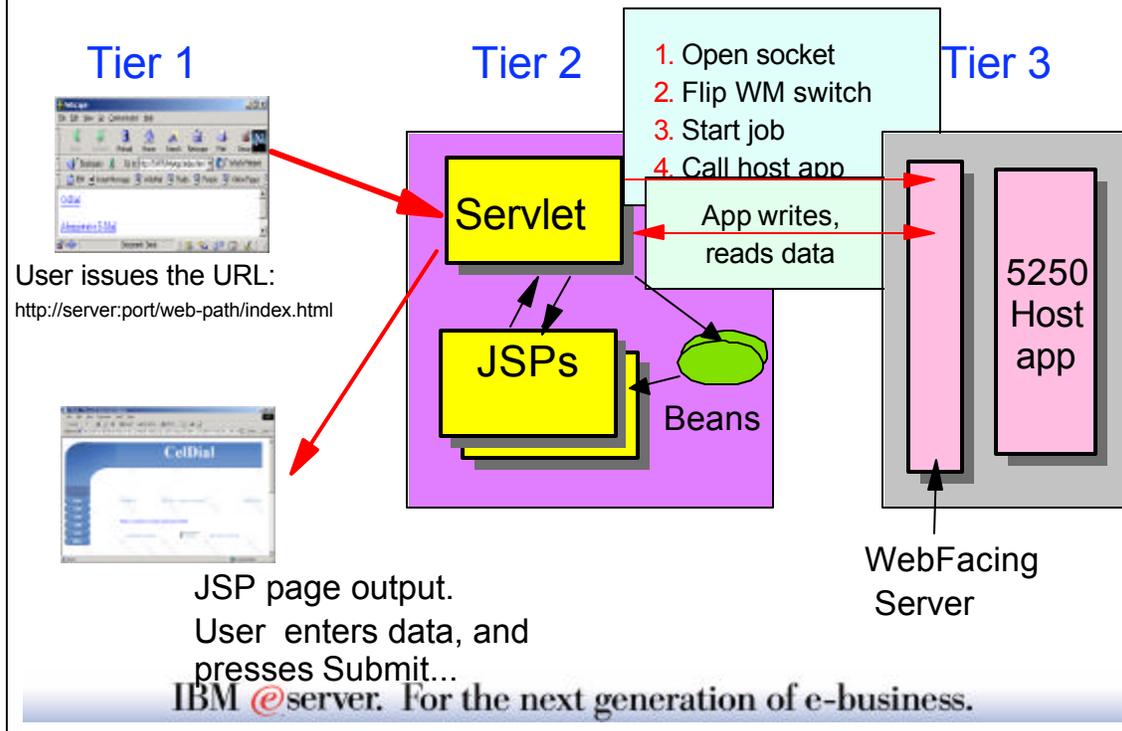
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After WebFacing



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How does it all work?



What are the steps?

1. Start the new IDE
2. Run the Create WebFacing Project wizard
 - import DDS Source from the server
 - specify the CL command used to start the app and the text desired for the Web page link
 - select style
3. Convert DDS to JSPs and beans
4. Update publishing information
5. Deploy the files to WebSphere Application Server
6. Ensure that a WAS instance is up and running
7. Invole the first page - Invocation page=index.html
8. Iteratively improve the look ...

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New IDE . . .

Create new WF project
or
Go to workbench

The screenshot shows the IBM WebFaced Tool IDE interface. On the left, a 'WebFaced Projects' tree view displays a project structure with folders like 'Approot' and 'DDS', and sub-projects like 'Z0000001'. A 'Properties' window is open at the bottom left, showing details for a host named 'TDRAS14M'. In the center, a code editor displays the content of 'Z000001.jsp', which includes HTML headers, a system.out.println statement, and a table structure. On the right, a 'Quick Start' dialog box is open, asking 'What would you like to do?'. It has two radio buttons: 'Create a new WebFaced Project' (which is selected) and 'Go to the workbench'. An arrow points from the 'Go to the workbench' option back to the project tree. Another arrow points from the 'Create a new WebFaced Project' option to the 'WebFaced Projects' tree. A third arrow points from the 'Quick Start' dialog to the 'WebFaced Projects' tree.

WebFaced Projects

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Create a New Project !

The screenshot shows the IBM WebFaced Tool IDE interface. The 'New' menu is open, showing options for 'Project', 'WebFaced Project', and 'WebFaced Style'. A red arrow points from the 'WebFaced Project' option to a 'Project' dialog box. The dialog box is titled 'Project' and contains the text 'Specify a new Project for WebFaced'. Below this text is a text input field with the value 'WebFacedLab'. At the bottom of the dialog, there are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'.

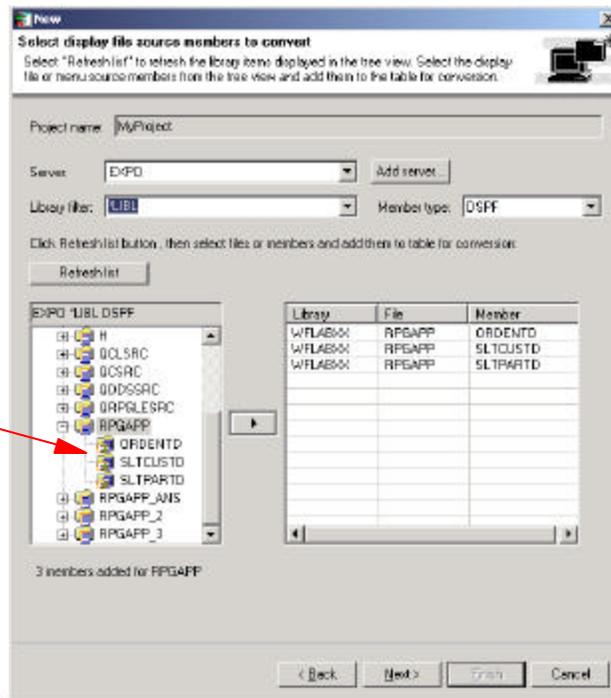
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Select DDS source

- Select server
- Sign on

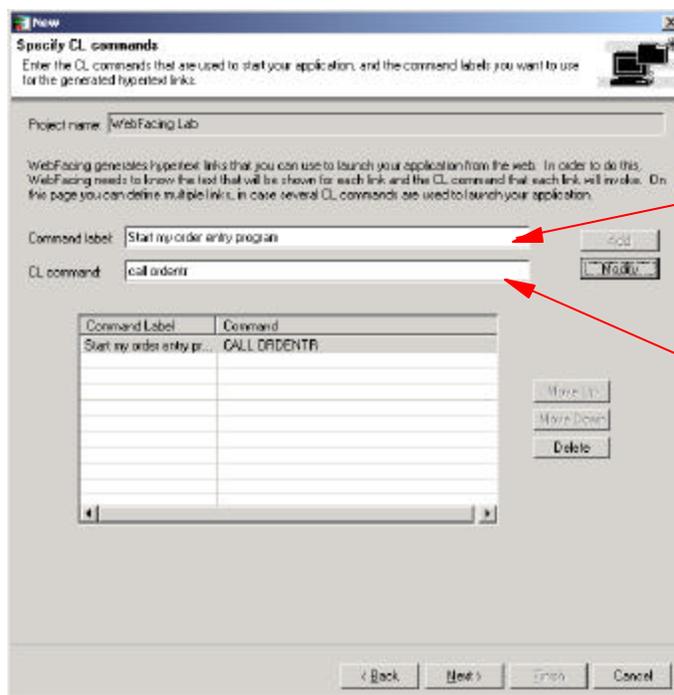


- Select DDS



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Command to Call App

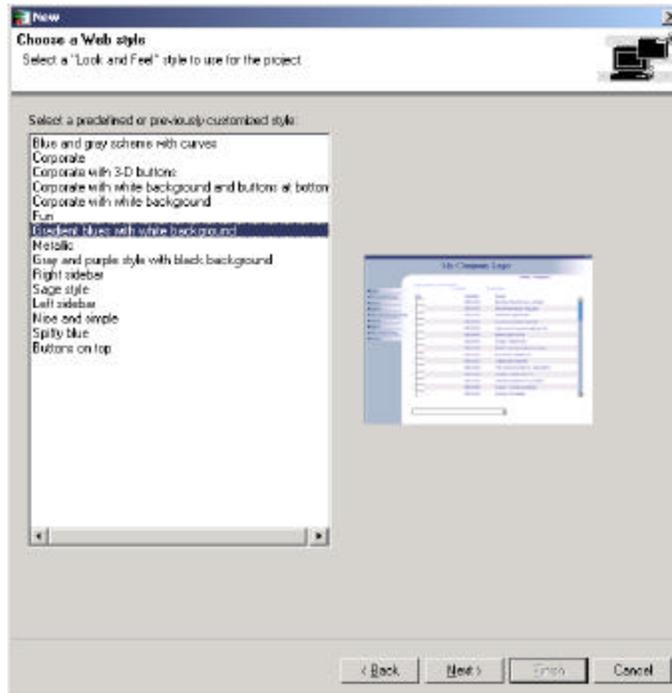


Text for web page link

CL command

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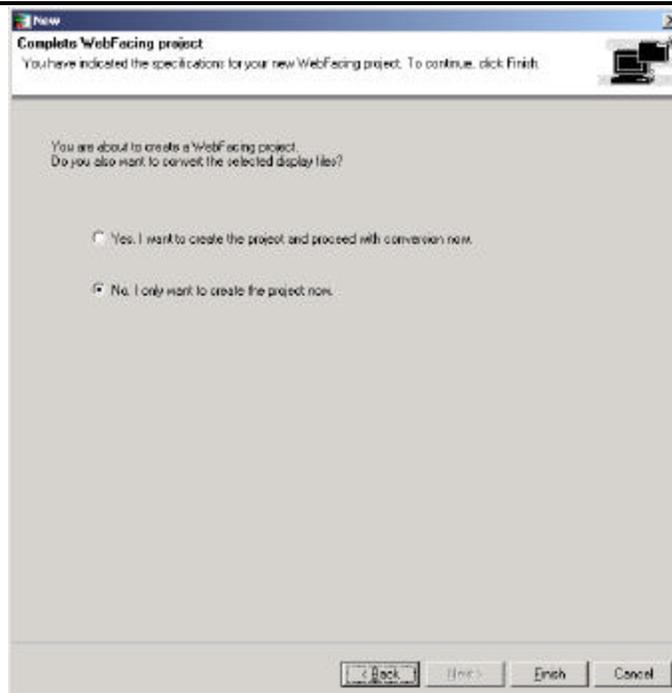
Select Presentation Style



- Lots of styles that you can modify !
- Cascading style sheets

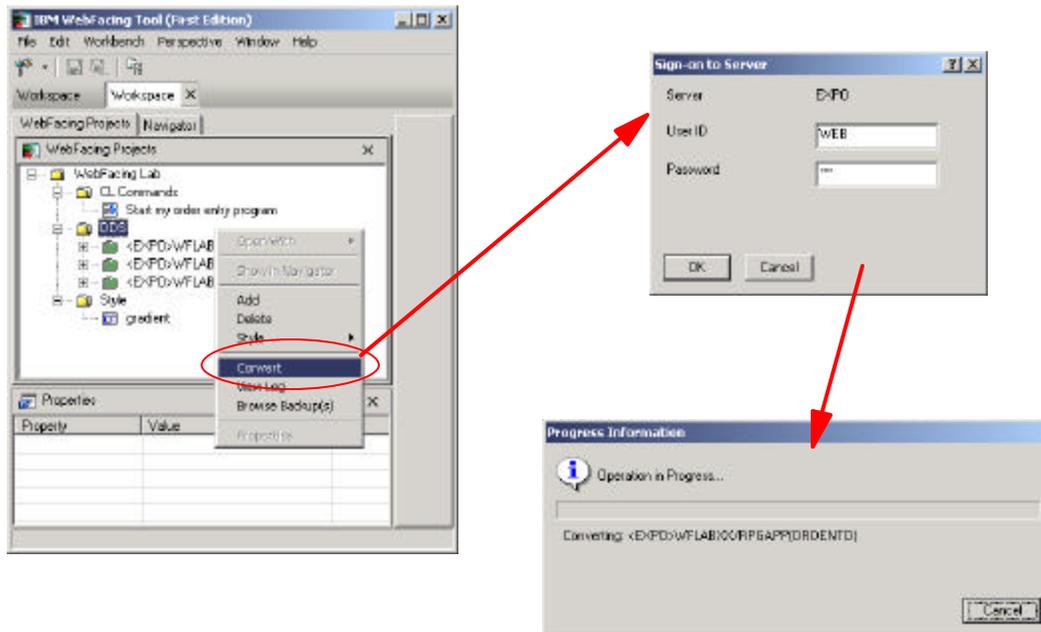
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Done!



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Convert DDS to JSPs

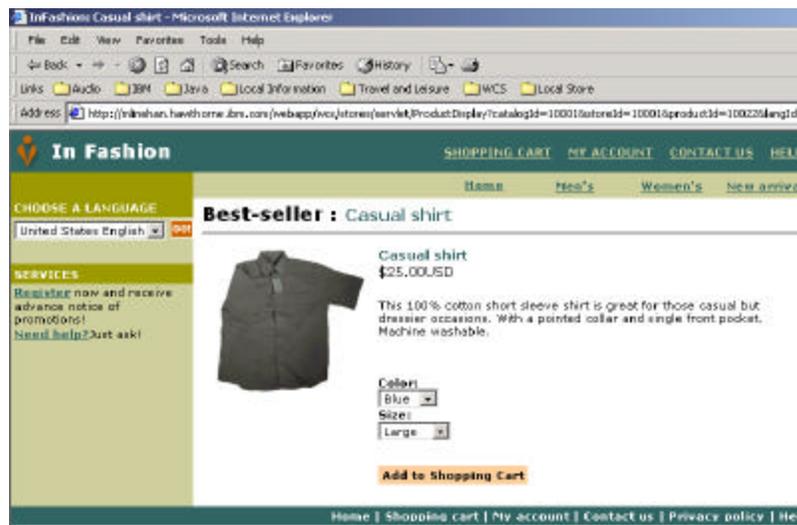


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WebSphere Commerce Suite

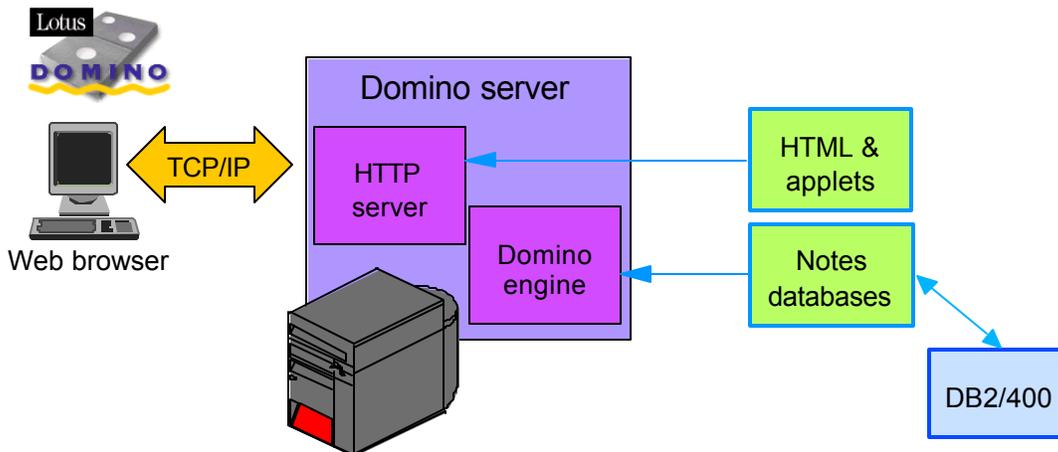
(was Net.Commerce)

- For selling over the Internet
 - Store fronts, auctions, marketplaces, exchanges, etc.
 - Uses servlets, EJBs, can access RPG, COBOL via C++ or Java



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Lotus Domino

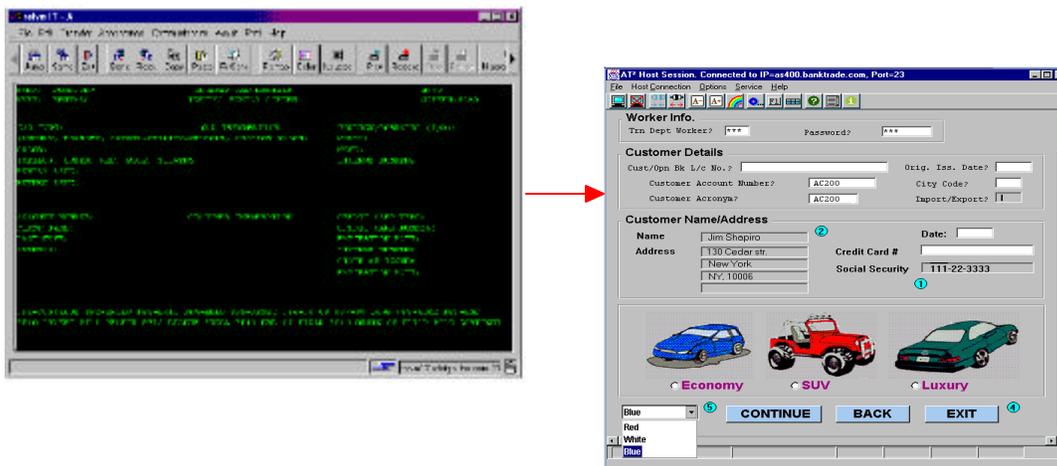


- Serves Notes database documents as web pages
 - Built-in application development environment
 - Can access Java via agents
 - Can access RPG or COBOL

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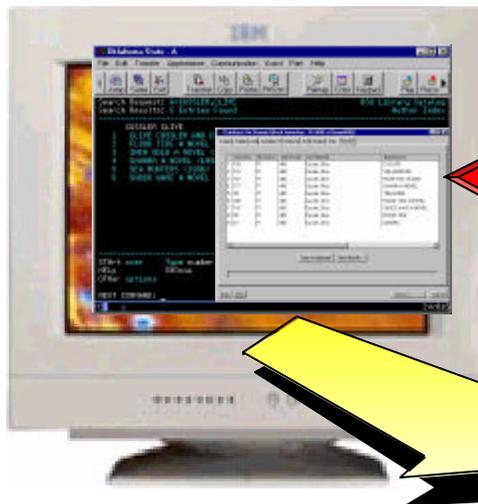
Host On-Demand

- Host On-Demand + Screen Customizer
 - ✓ Access to existing apps through emulation using a Web browser

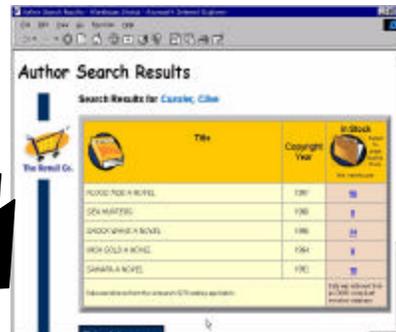


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WebSphere Host Publisher V3.5 (5648-E25)



merge two or more
existing applications.....



... into a single composite web page

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Host Publisher

Creates an HTML interface to existing iSeries applications

- Use development environment to:
 - record keystrokes through the app -- save in 'integration objects'
 - identify input fields and output fields/tables
 - tooling automatically generates HTML pages with input fields & output fields/tables, etc.

Use WebSphere Studio to enhance generated Web pages

- at runtime:
 - 'Integration Objects' play back the keystrokes driving the 5250 application

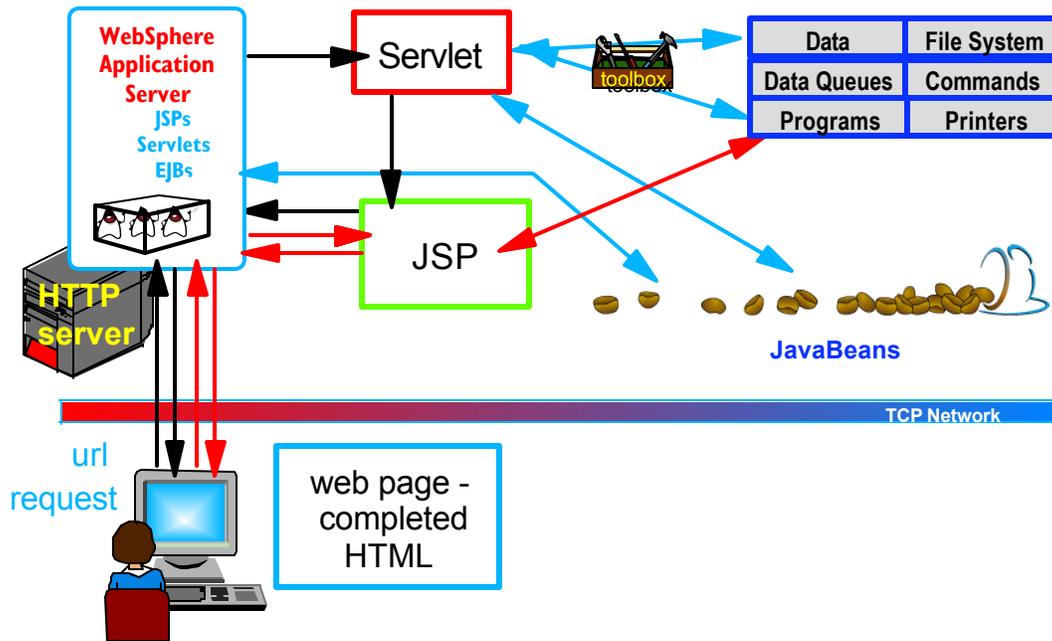
Great solution for those who

- want to get pieces of an application out to the Web
- need web apps composed from several apps on one or more backend types

V5R1 - packaged with Client Access

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RPG meets the Web



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Summary

You Can Move to WebSphere!!

- Transform business process into e-business
- Build new business logic
- Develop new e-business applications

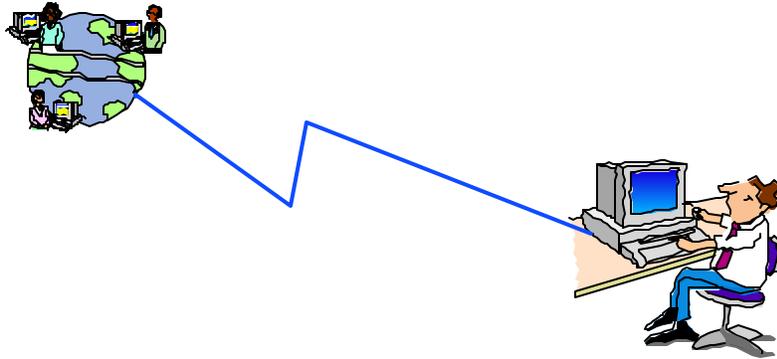
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WebSites

Need More Information??

www.ibm.com/software/ad

www.ibm.com/software/ad/wds400



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