

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

Phil Coulthard
IBM Toronto Lab

coulthar@ca.ibm.com

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

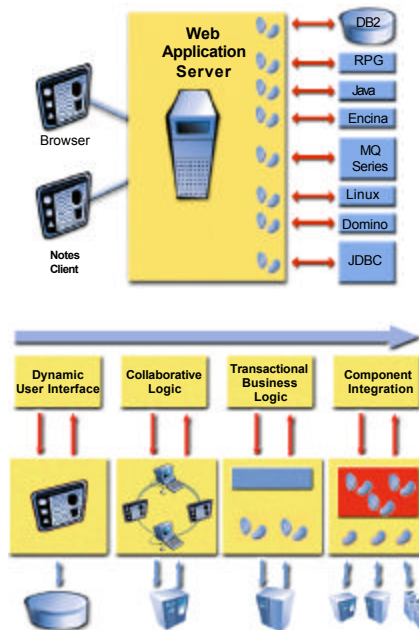
- Browser based User Interface
- Minimal change to underlying applications
- Minimal initial investment in skills

2. Add New Logic to Existing Applications

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

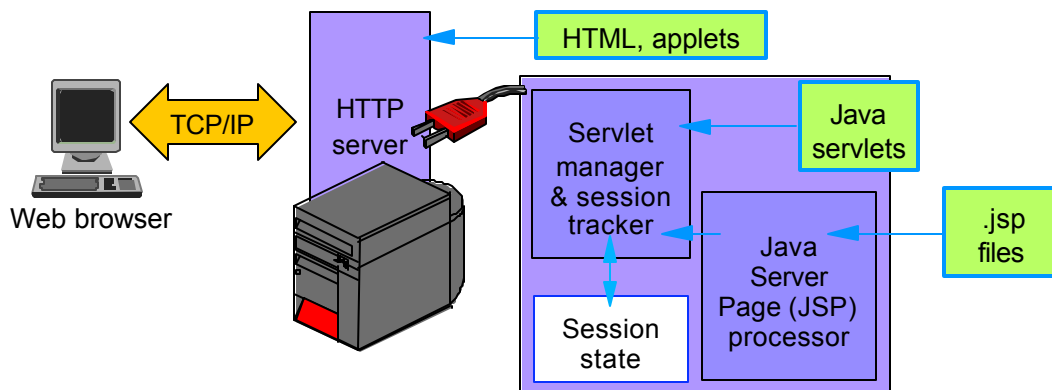
3. Build New eBusiness Applications

- 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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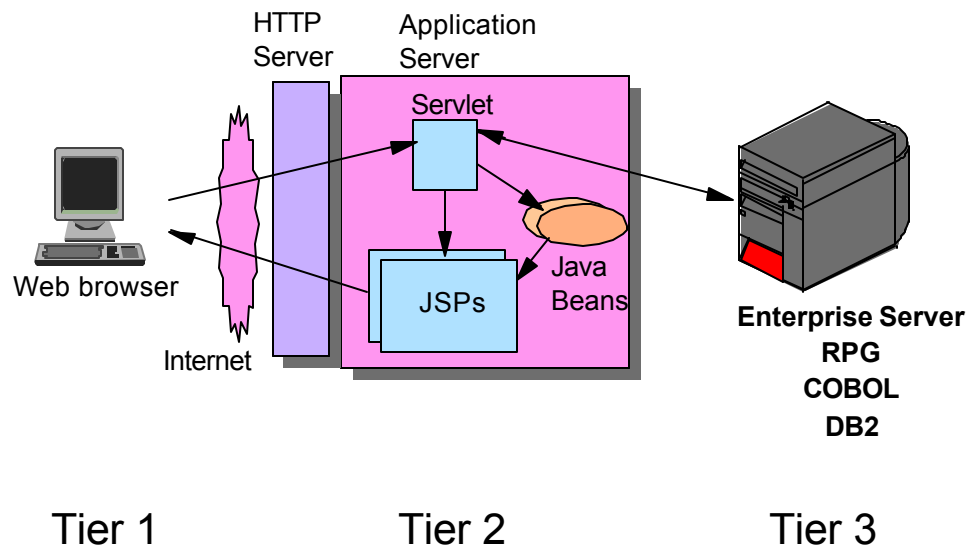
Servlets and JSPs

- **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

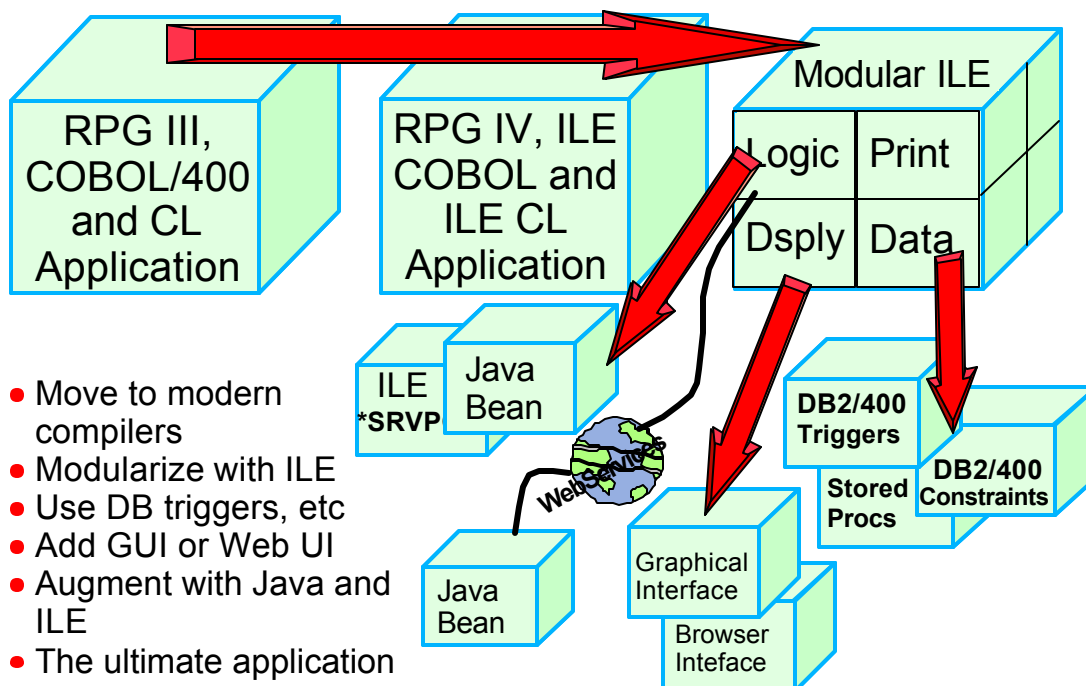
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eBusiness Ready??

- 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

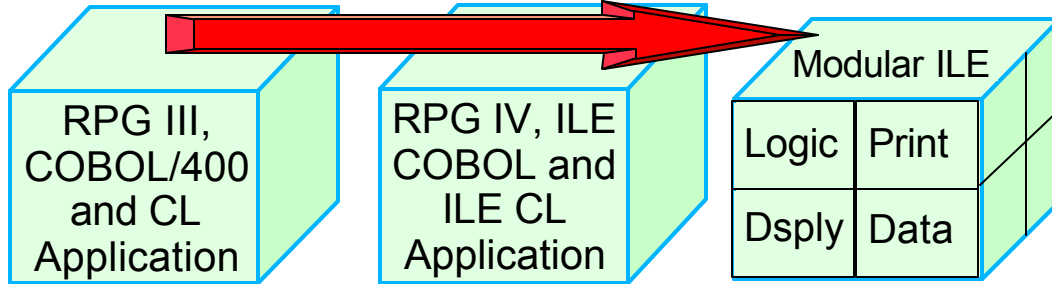
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All the Pieces ...



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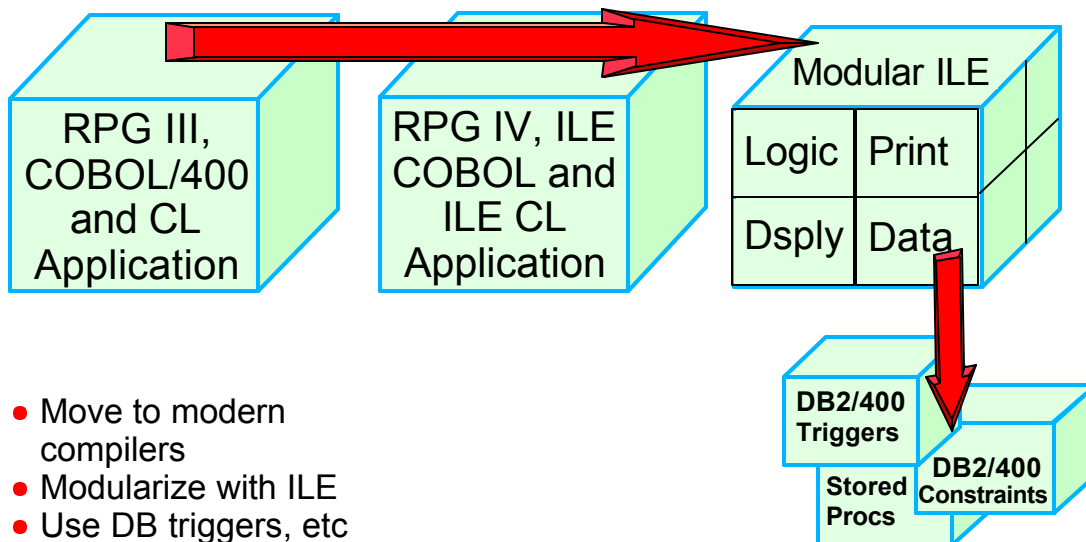
Phasing In ...



- Move to modern compilers
- Modularize with ILE

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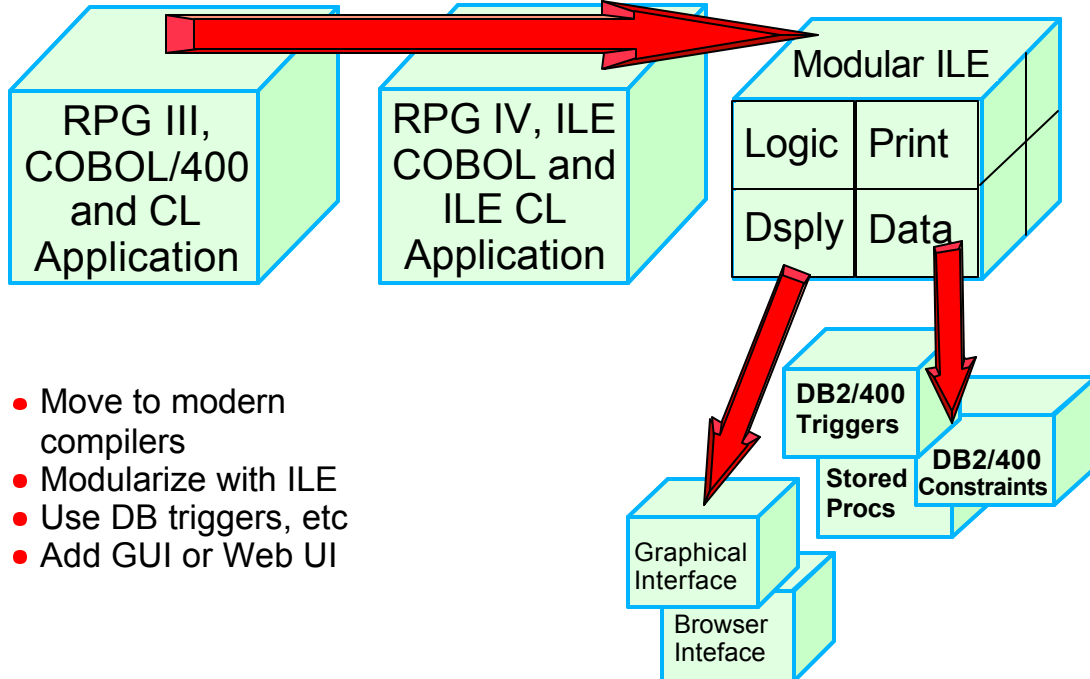
DB2 Functions Added ...



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

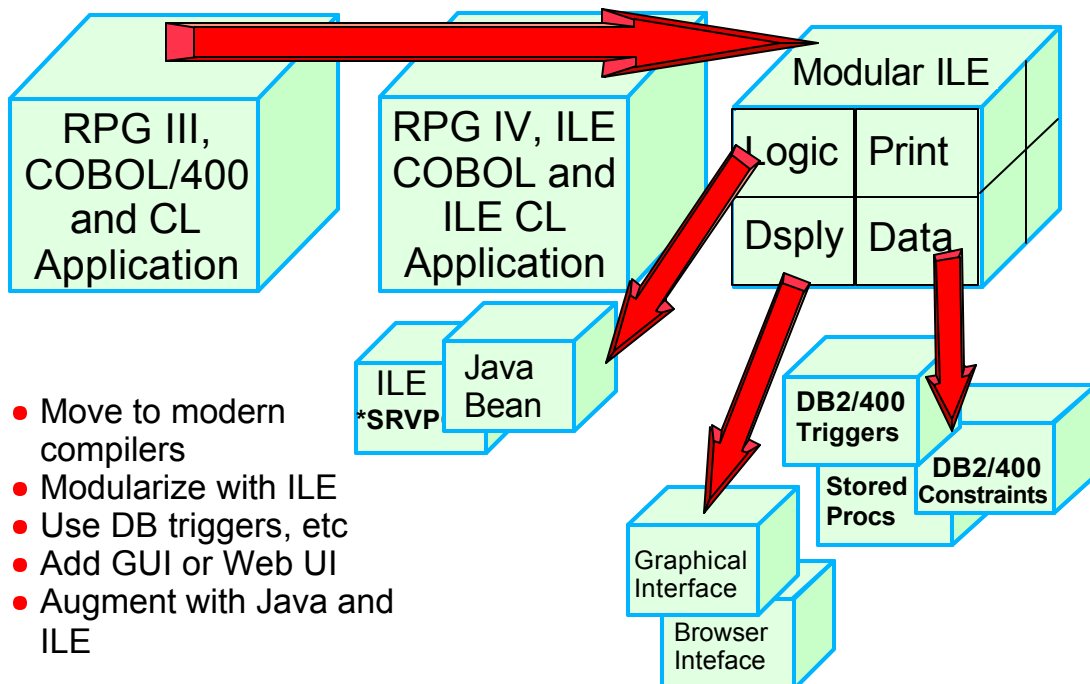
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Change the Look of the Application ...



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Extend Application with New Function ...



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The diagram shows a progression of application components in 3D boxes:

- RPG III, COBOL/400 and CL Application** (Leftmost box)
- RPG IV, ILE COBOL and ILE CL Application** (Second box)
- Modular ILE** (Third box, containing a 2x2 grid):
 - Logic
 - Print
 - Dsply
 - Data
- DB2/400 Triggers** (Fourth box)
- Stored Procs** (Fifth box)
- DB2/400 Constraints** (Sixth box)
- Java Bean** (Two boxes, one above and one below the Web Services icon)
- ILE *SRVPGM** (Box to the left of the Java Bean above)
- Web Services** (Icon of a globe with a network of lines)
- Graphical Interface** (Box below the Web Services icon)
- Browser Interface** (Box below the Graphical Interface)

Red arrows indicate the flow of evolution from left to right and downwards, showing the integration of various technologies into the final application.

- 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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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

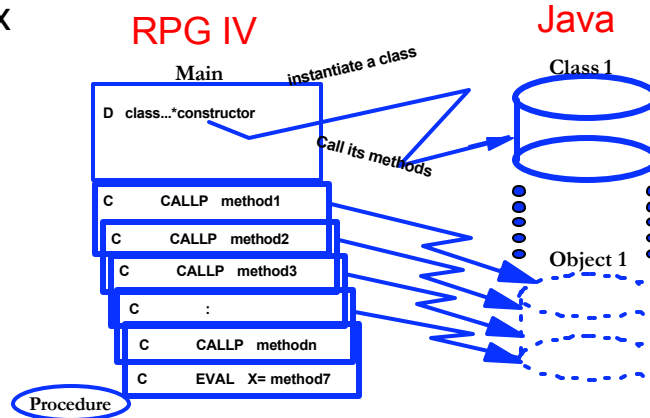
Skills

- 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



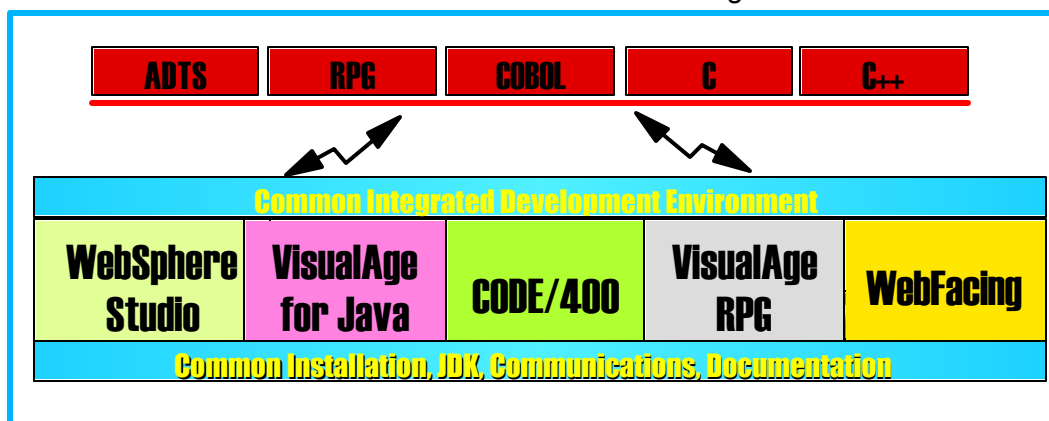
- direct call to Java methods coded as RPG IV call to external procedures

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Tools to Get You There ...

WebSphere Development Studio for iSeries

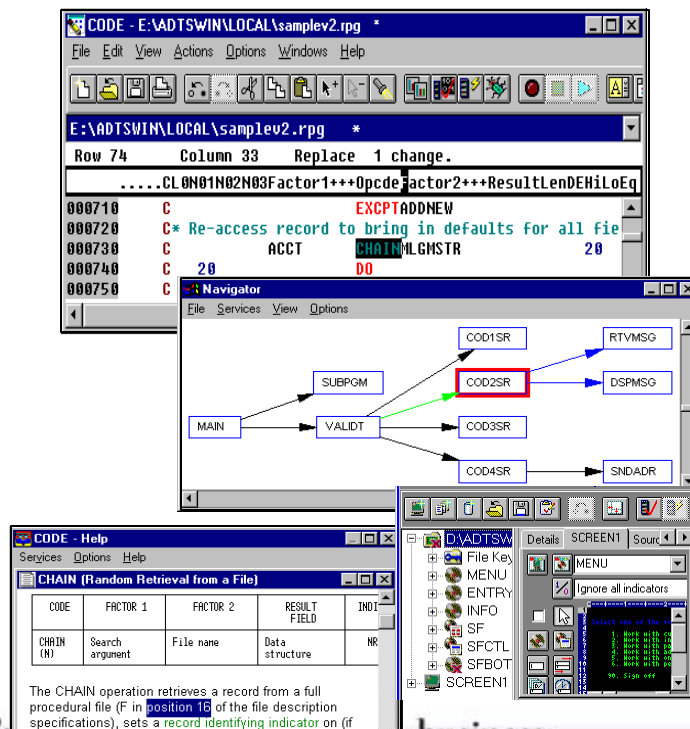
- Host components
 - ADTS
 - RPG
 - COBOL
 - C
 - C++
- Workstation components
 - CODE
 - VisualAge for Java
 - WebSphere Studio
 - VisualAge for RPG
 - WebFacing



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CODE/400

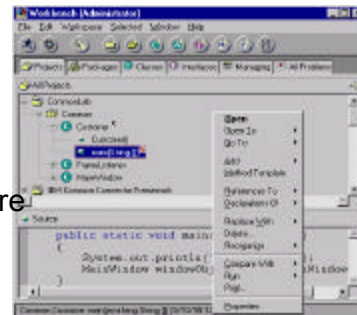
- iSeries-aware tool suite:
 - CODE Editor
 - Language aware editing for RPG, COBOL, CL, C, C++, DDS, Java, VARPG
 - Program Verifiers for RPG, COBOL, DDS
 - Language Reference manuals online, F1 enabled
 - CODE Remote Compile
 - Remote Compile with Error Feedback
 - GUI Compile Options Dialogs
 - CODE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



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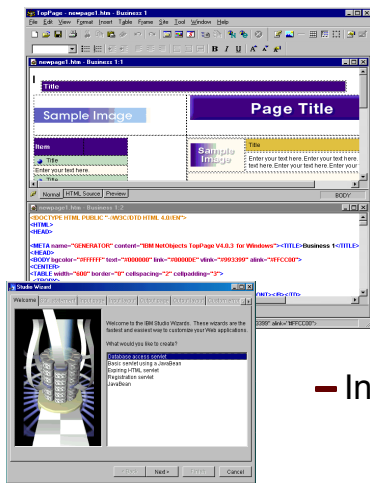
VisualAge For Java - Professional

- 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 VAJava
 - Read classes, beans, servlets from VAJava
 - Write classes, beans, servlets to VAJava
 - Publish website to VAJava 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

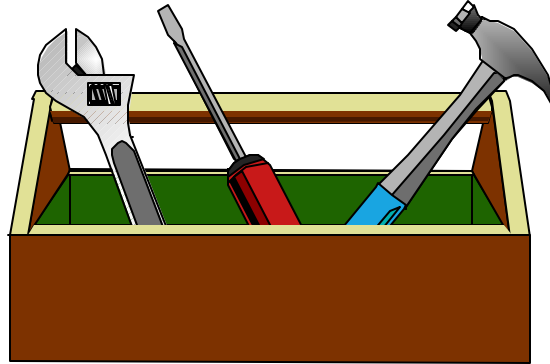
1. many vendors have already converted their code
 - they have already been through the coding

Build a Web-Enabled Application

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

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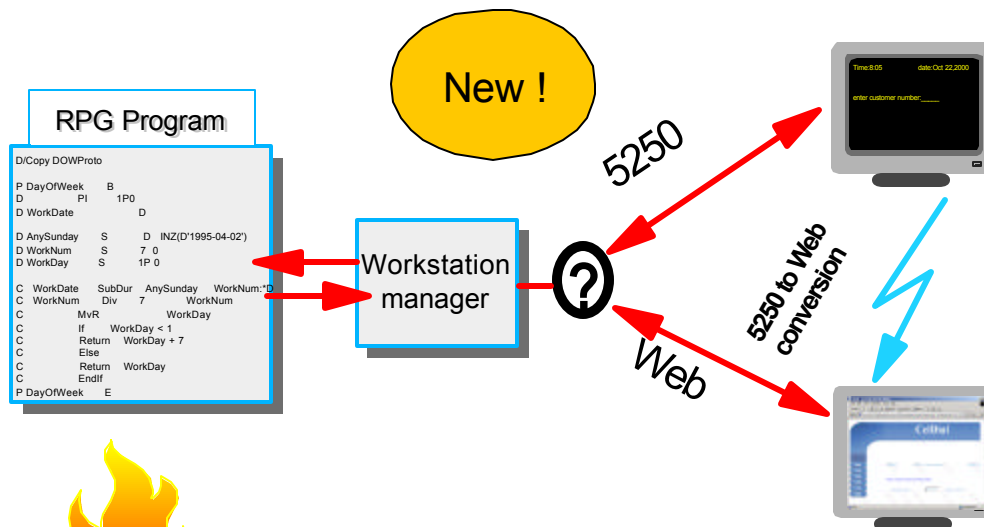
Can I Build One??



YES!!!

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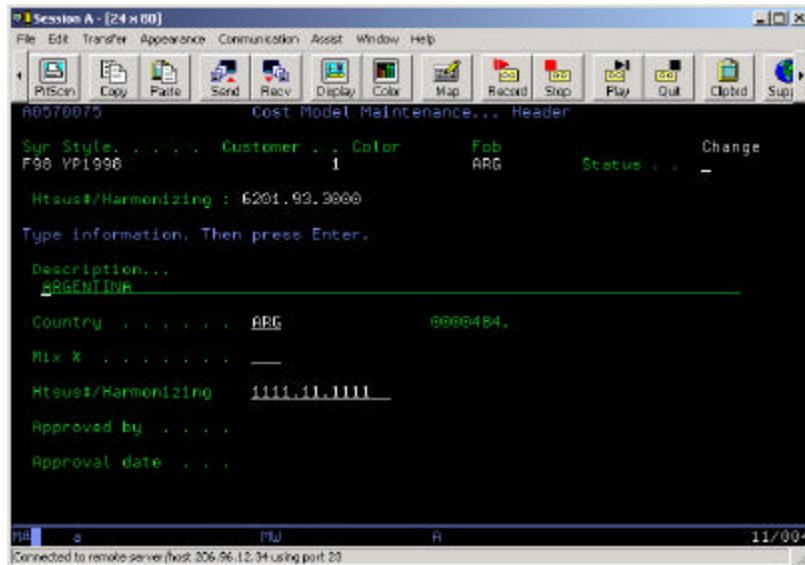
What is WebFacing ?



You can use both the 5250 and web UI !

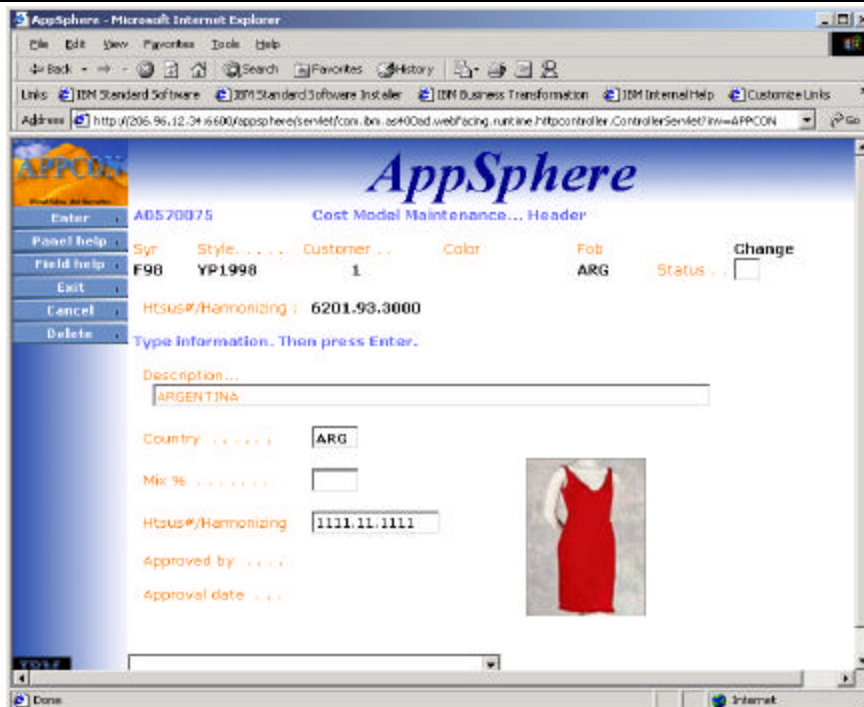
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Before WebFacing



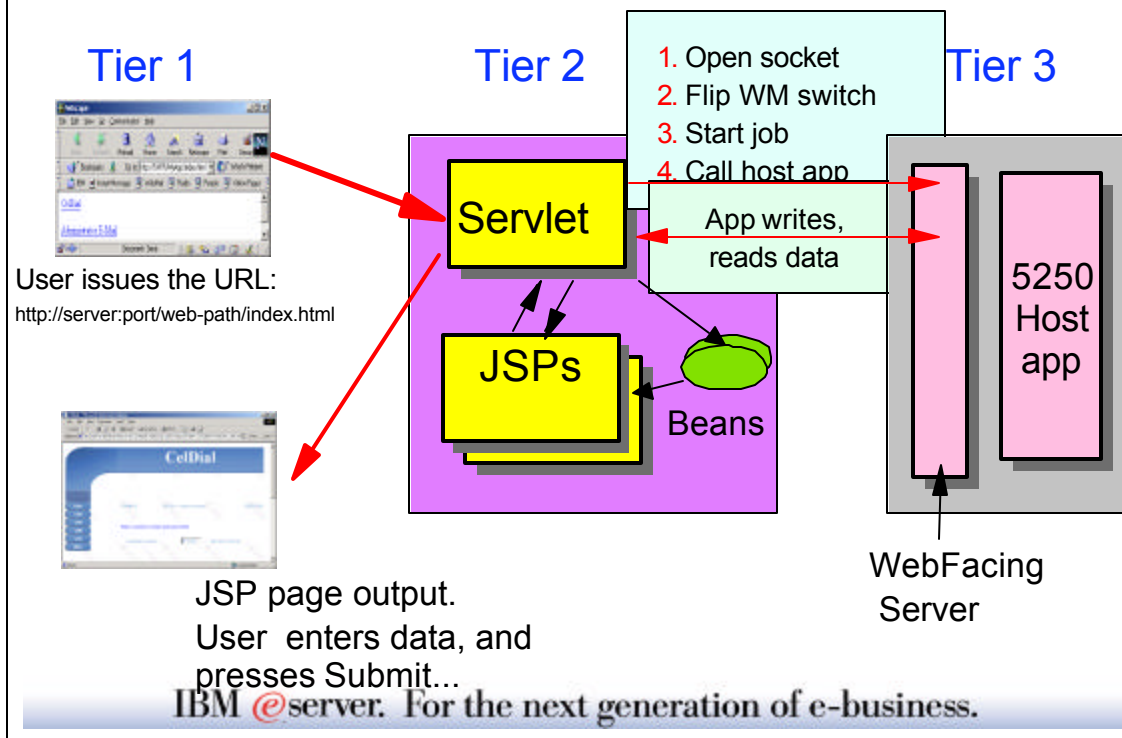
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After WebFacing



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How does it all work?

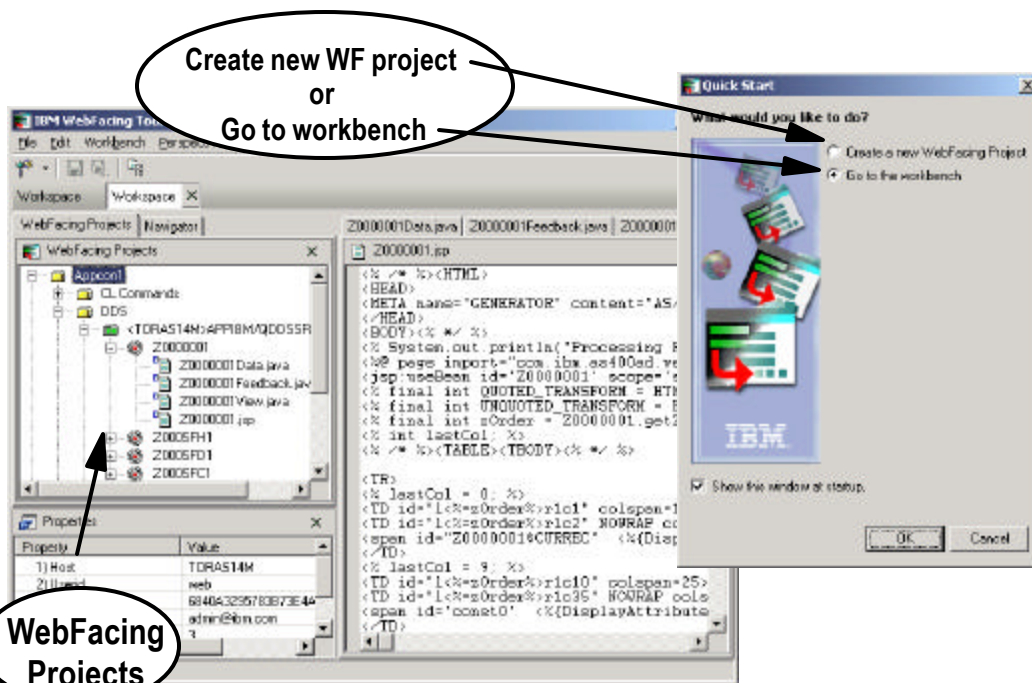


What are the steps?

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. Involve the first page - Invocation page=index.html
8. Iteratively improve the look ...

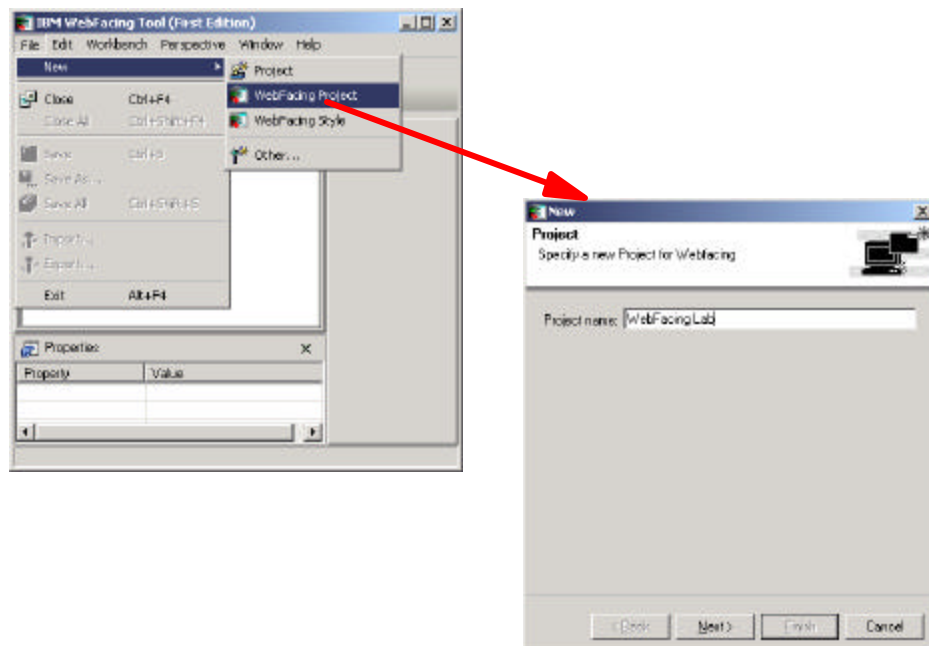
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New IDE ...



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Create a New Project !



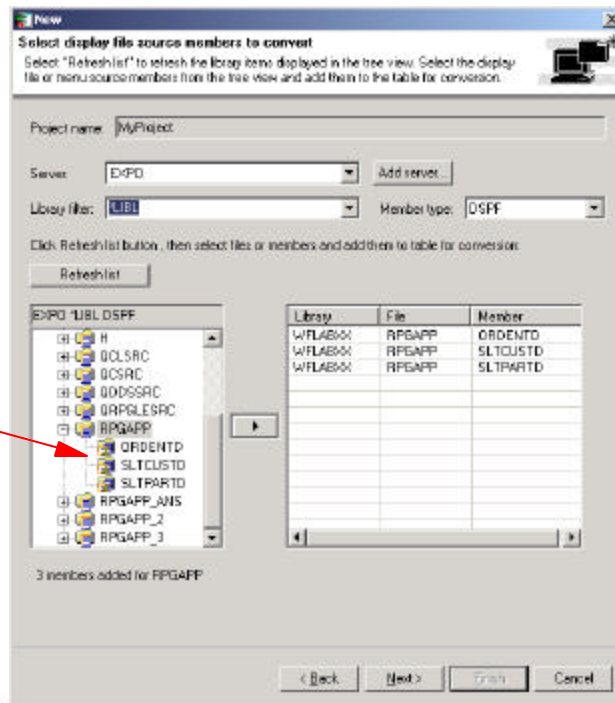
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Select DDS source

- Select server
- Sign on

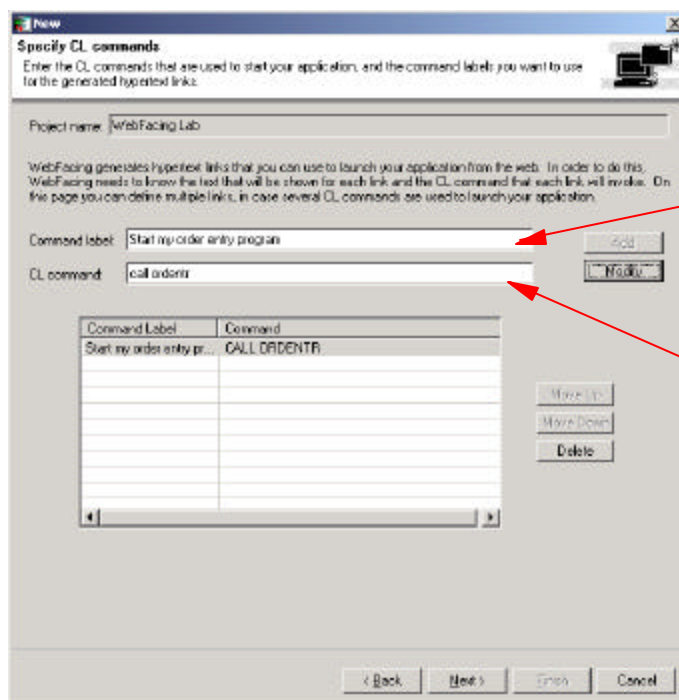


- Select DDS



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Command to Call App

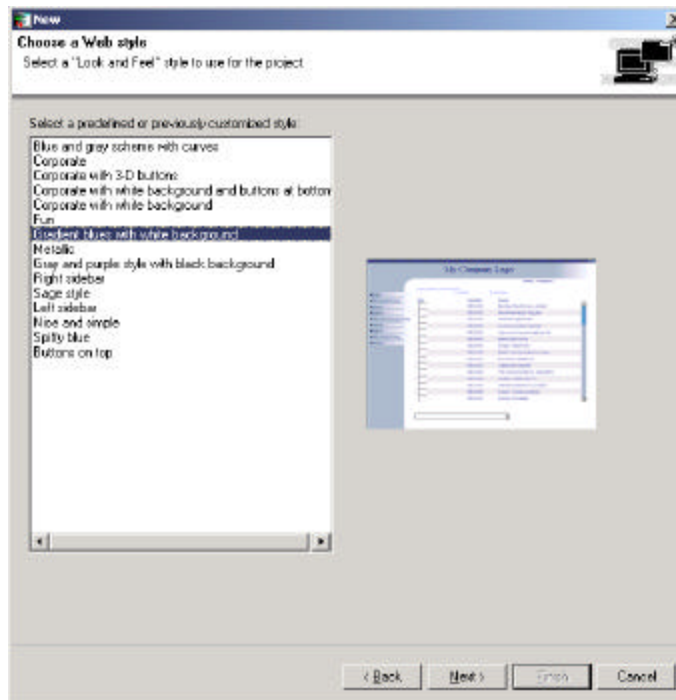


Text for web page link

CL command

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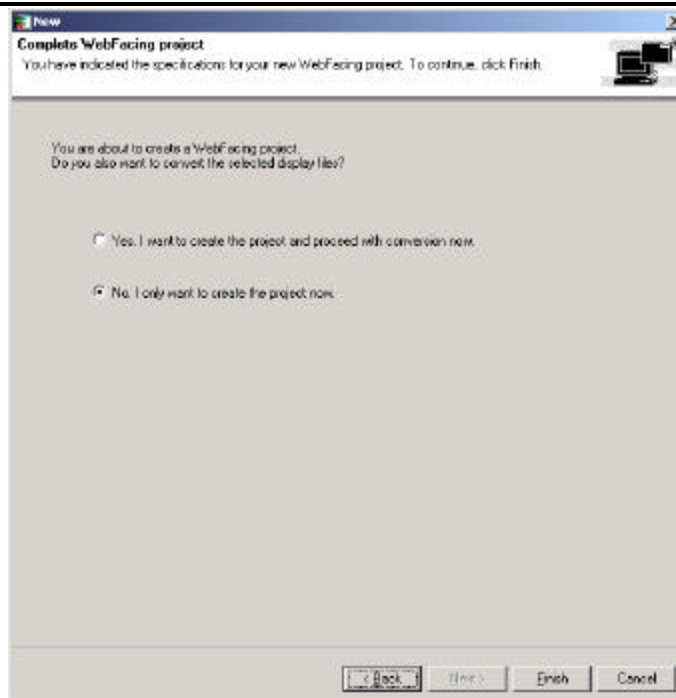
Select Presentation Style



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

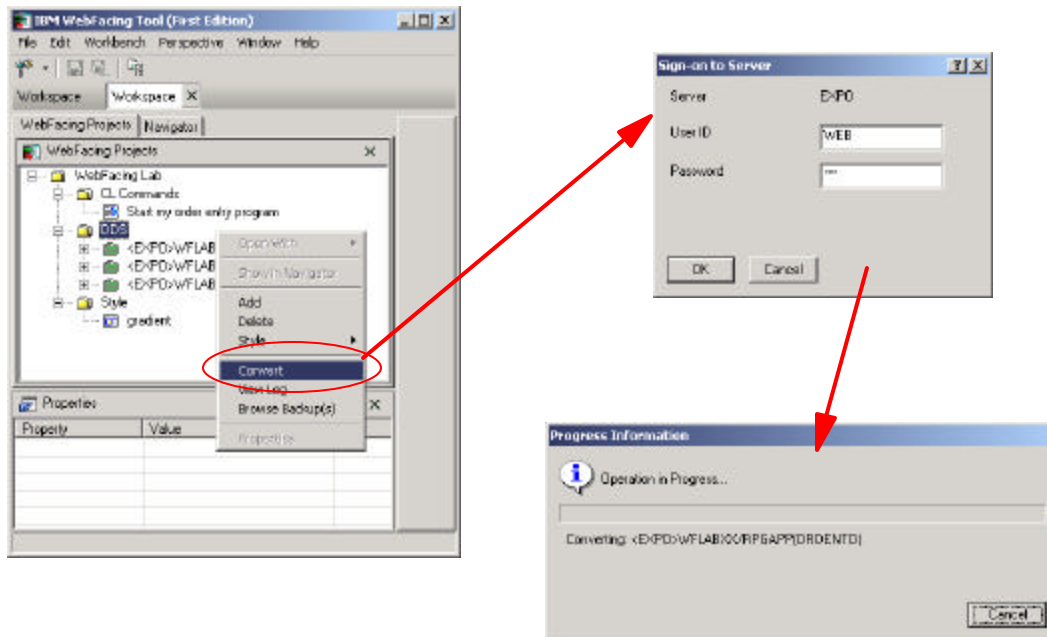
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Done!



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Convert DDS to JSPs

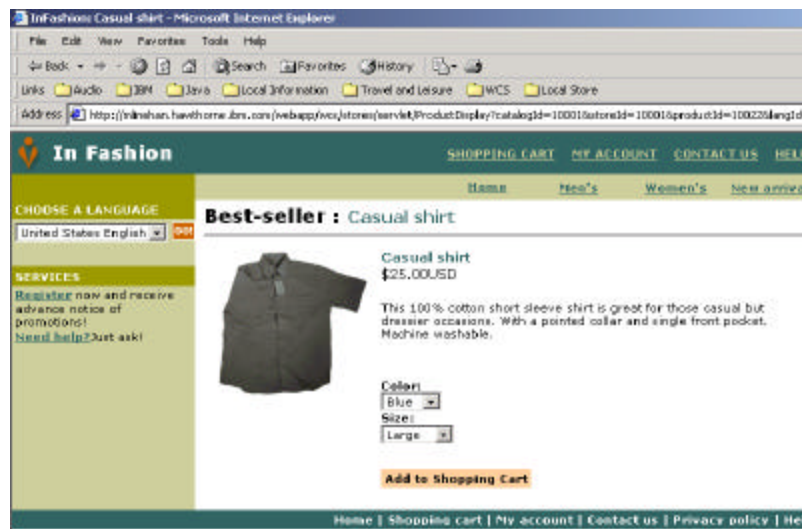


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WebSphere Commerce Suite

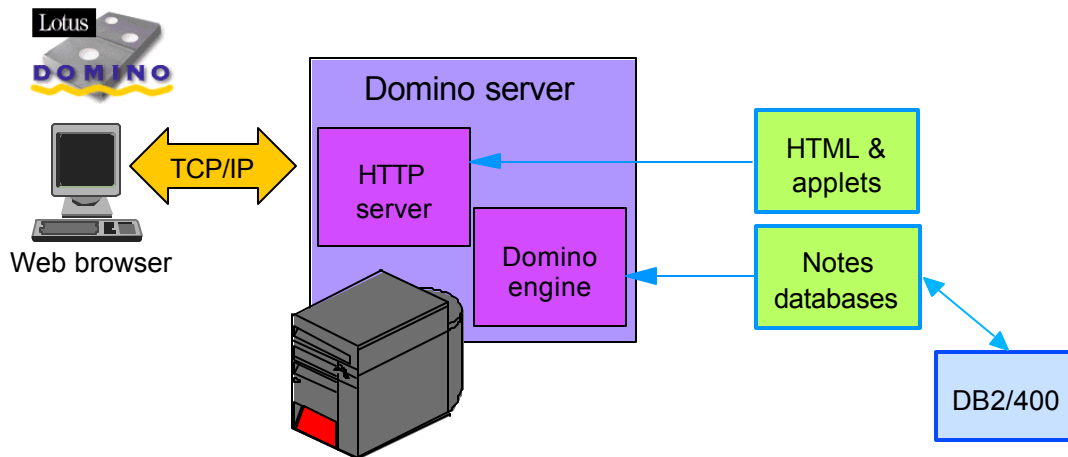
(was Net.Commerce)

- 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

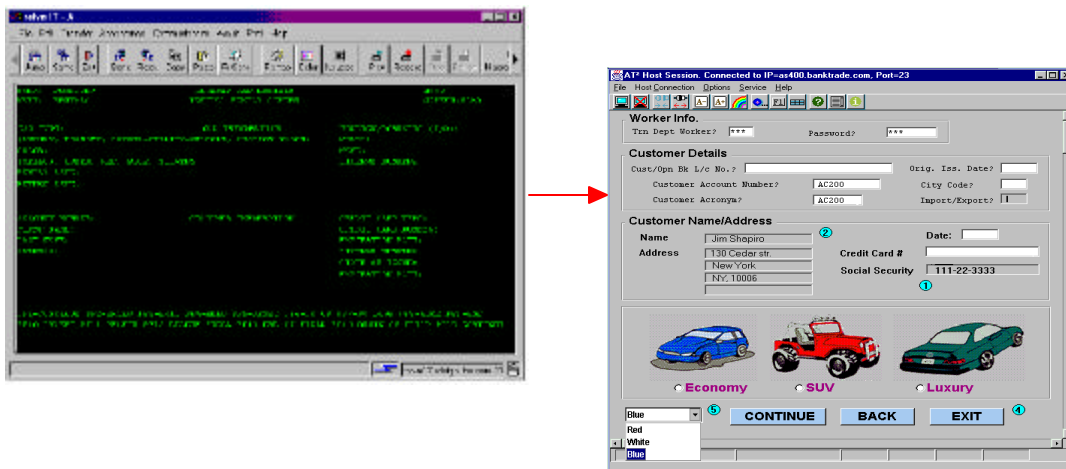


- Serves Notes database documents as web pages
- Built-in application development environment
- Can access Java via agents
- Can access RPG or COBOL

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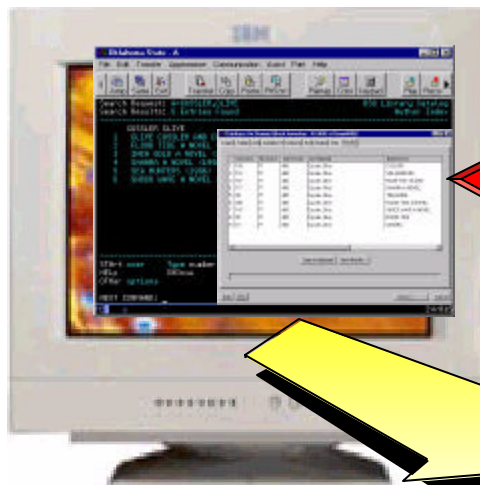
Host On-Demand

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

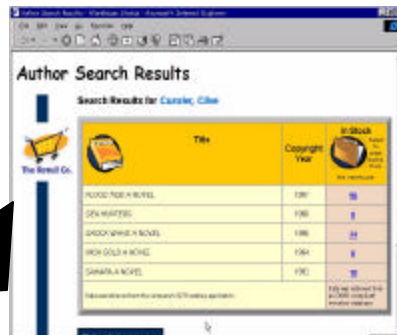


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WebSphere Host Publisher V3.5 (5648-E25)



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

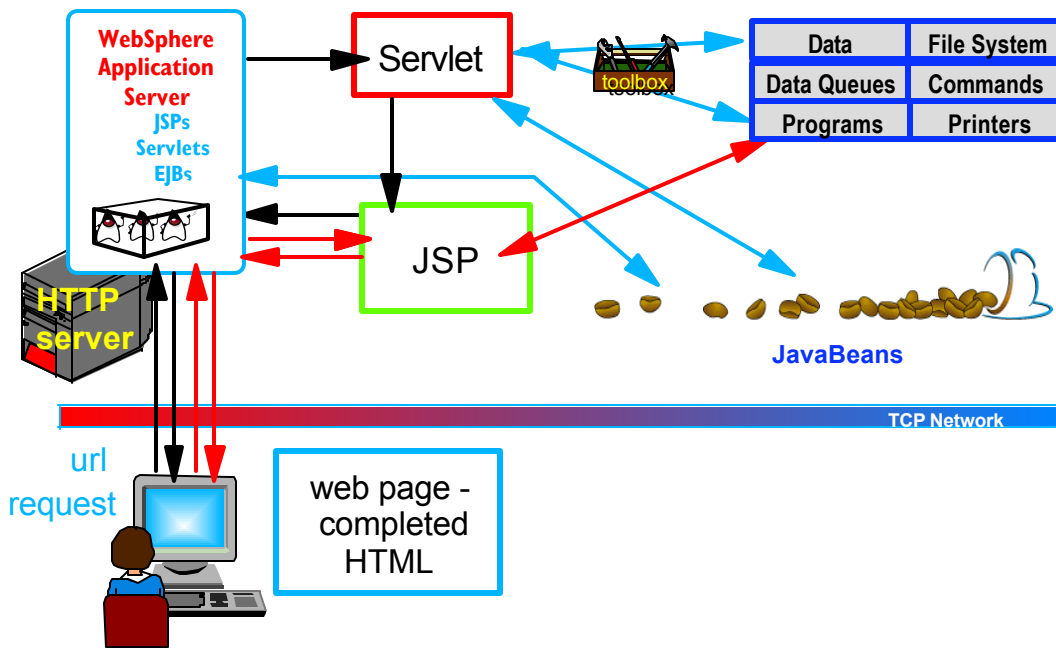
Great solution for those who

- 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

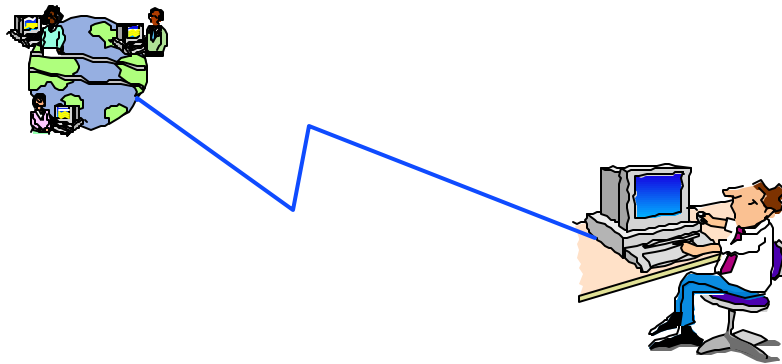
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WebSites

Need More Information??

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