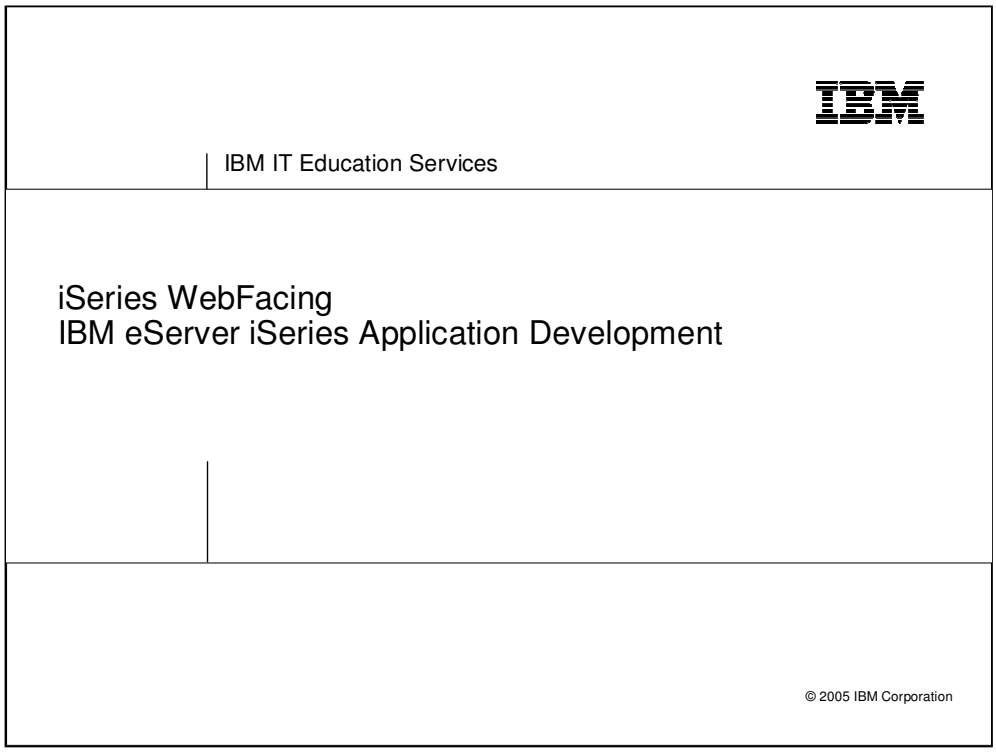

This presentation reviews the components of a Web application, the WebFacing Tool and how it is packaged, how the WebFacing Tool development time and runtime works and the steps to Web-enable a 5250 application using the WebFacing Tool.

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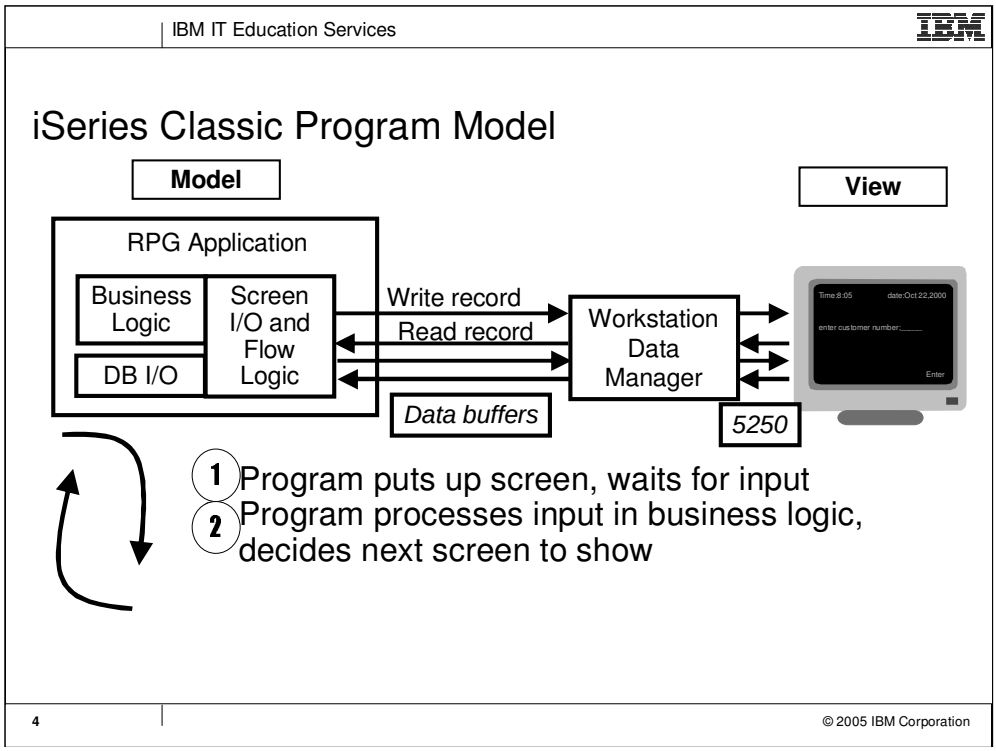
In the first section of this presentation we review what e-business is all about. Then we look at WebFacing and what it is. Next we introduce Development Studio Client. The WebFacing Tools are described in more detail. WebFacing customization is described followed by a review of the new WebFacing Tool Version 5.0 features.

e-business Primer

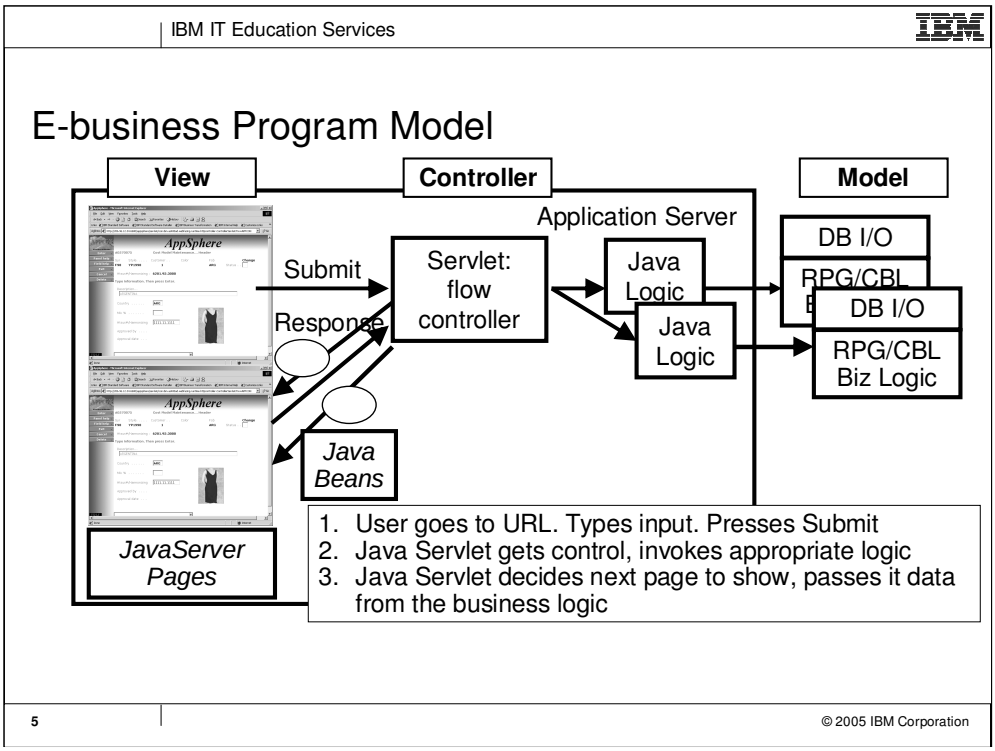
- Program Models
- Servlets
- JSPs

In this section we review the programming models and their associative technology, servlets and JSPs.



In the green-screen environment, the application performs READs and WRITEs to the workstation. The application data is sent to Workstation Data Manager. The Workstation Data Manager merges application data with the display file. The Workstation Data Manager generates a 5250 datastream that is sent to the display.

In this model, you typically have one model object and multiple views on that object. A view is a window onto the model. Presentation logic typically goes in the view. Business logic goes in the model.



The e-business program model follows the Model-View-Controller paradigm, organizing the application into three separate components:

•Model: the application model with corresponding data representation and business logic

•View: data presentation, providing views for user input

•Controller: to dispatch requests and control data flow

Here you can see the controller is added. The controller handles the interactions between the view and the model. When the model changes it updates the view, when the user does something with the view the controller informs the model.

First the application is converted. This creates JSPs for each record format as well as Java beans.

When the program performs a READ on a record format, control as well as the application data is sent to the controller.

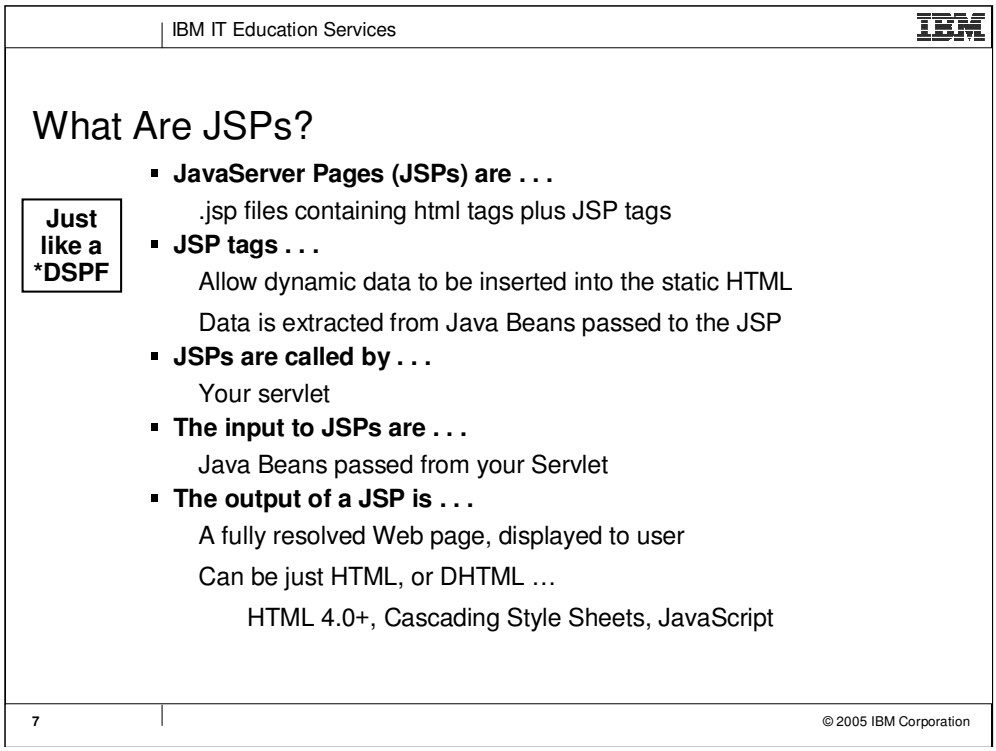
Because the job was started by the WebFacing server, the controller knows this is a WebFacing request and passes the data and control to the WebFacing server which runs on the iSeries. Control returns to the Webfacing runtime servlet that runs in WebSphere Application Server. The WebFacing servlet locates the appropriate JSPs and Java beans. The WebFacing servlet tells WebSphere Application Server to return the JSP back to the browser. The JSP is compiled and the resultant HTML is returned to the browser. Note that no 5250 datastream is generated in this flow.

What Are Servlets?

- **Servlets are . . .**
- Java classes (programs written in Java)
- **Servlets run . . .**
  - On an application server such as WebSphere
- **Servlets are called . . .**
  - By a user pressing Submit, or clicking a link, that is mapped to the servlet
- **The input to Servlets are . . .**
  - User-entered data from a Web page
- **The output of a Servlet is . . .**
  - Control passed to a JavaServer Page

Servlets are server-side Java programs that use the *Sun Microsystems Java Servlet API* and its associated classes and methods, as defined in the *Sun Microsystems Java Servlet 2.3 Specification*. These Java programs extend the functionality of a Web server by generating dynamic content and responding to Web client requests. When a browser sends a request to the server, the server can send the request information to a servlet, so that the servlet construct the response that is sent back to the browser.

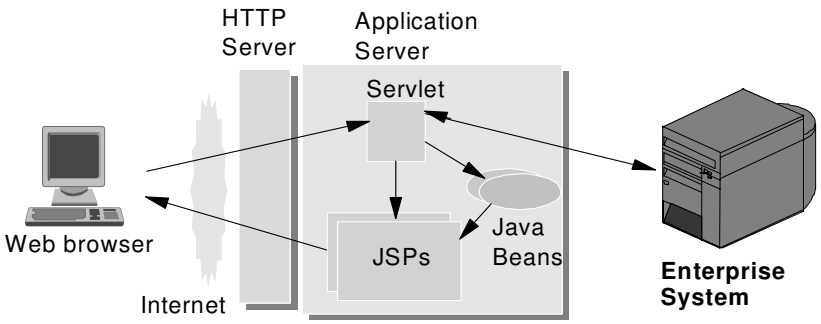
Just as applets run on a Web browser and extend the browser's capabilities, servlets run on a Java-enabled Web server, such as the WebSphere Application Server, to extend the server's capabilities. Servlets are commonly used to allow businesses to connect databases to the Web, due to their flexibility, scalability, and the their processing economy when developed in the WebSphere Studio Web development environment.



JavaServer Pages enable you to generate dynamic web content, such as HTML, DHTML, XHTML, and XML files, to include in a Web application. JSP files are one way that the WebSphere Studio implements server-side dynamic page content. JSP files allow an Web server, such as WebSphere Application Server or Apache Tomcat, to dynamically add content to your HTML pages before they are sent to a requesting browser.

When you deploy a JSP file to a Web server that provides a servlet engine, it is preprocessed into a servlet that executes on the Web server. This is in contrast with client-side JavaScript (within <SCRIPT> tags), which is executed in a browser. A JSP page is ideal for tasks that are better suited to execution on the server, such as accessing databases or calling Enterprise Java beans.

Web App Architecture



Tier 1 Tier 2 Tier 3

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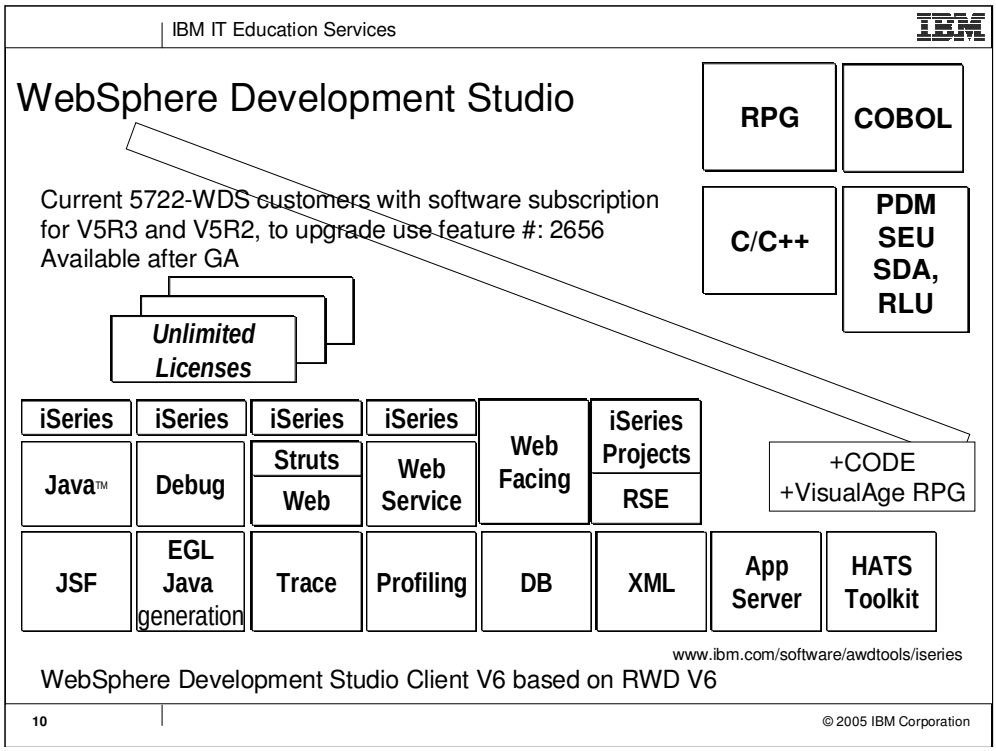
Previously we introduced WebFacing and reviewed the goals and history of WebFacing. Now lets introduce Development Studio Client.

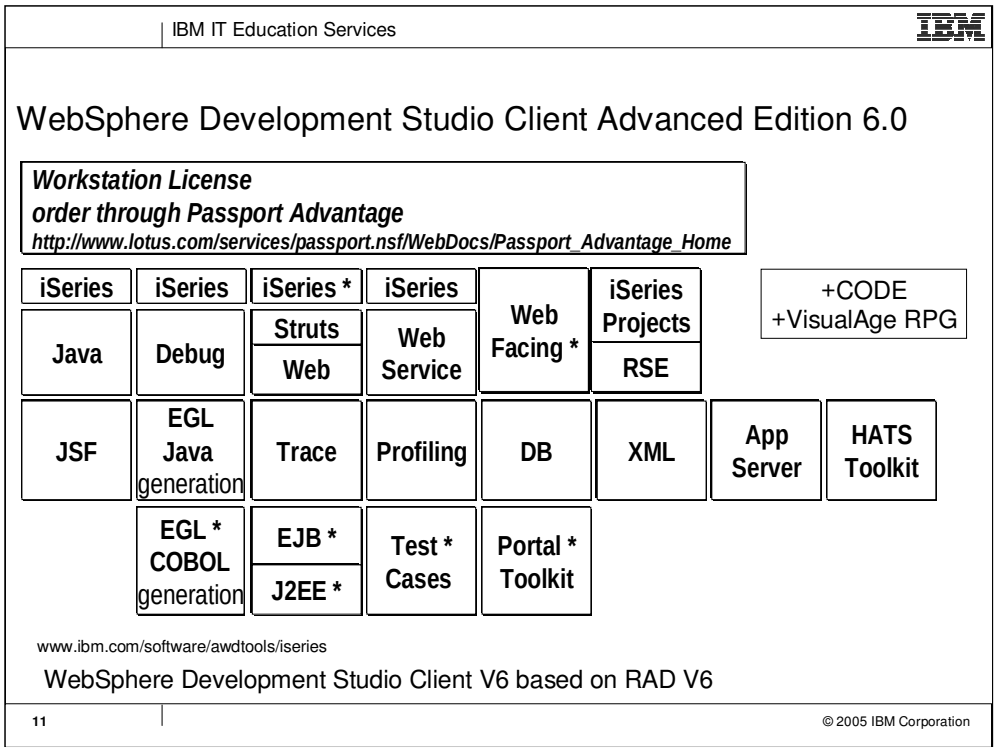


There is now only one application development product sold by IBM, for iSeries, as of V4R5. This is WebSphere Development Studio (Development Studio), which includes all four host compilers, all traditional tools (ADTS = PDM+SEU+SDA+RLU+DFU+AFP+CGU), and unlimited licenses of the workstation-based toolset named WebSphere Development Studio Client (formerly WebSphere Development Tools).

If you are an existing customer who has a subscription, you can upgrade to Development Studio free of charge. Without a Software Subscription, there is an upgrade fee. New licenses of Development Studio are priced very competitive compared to the combined prices of all constituent products. As of V5R1, there is no way to purchase the compilers or tools individually. So if you have RPG at V5R1 or higher, you must have Development Studio and hence are entitled to Development Studio Client.

For consultants who do not have an iSeries of their own, but still wish to have the client tools, Development Studio Client is also made available as a passport advantage product so it can be purchased "off the shelf" from IBM Direct.

Development Studio has been a huge success, with over 80,000 licenses sold. Just as every development machine used to have PDM and SEU, every development machine will now have all the modern Application Development tools from IBM. This ubiquity is especially important for business partners who build and sell software. These Business Partners are now free to build software using any of the technologies or tools in Development Studio, and can assume their customers will have the tools required to tailor everything from RPG to Java and Web user interfaces. This effectively raises the lowest common denominator to a level unparalleled by any other operating system.



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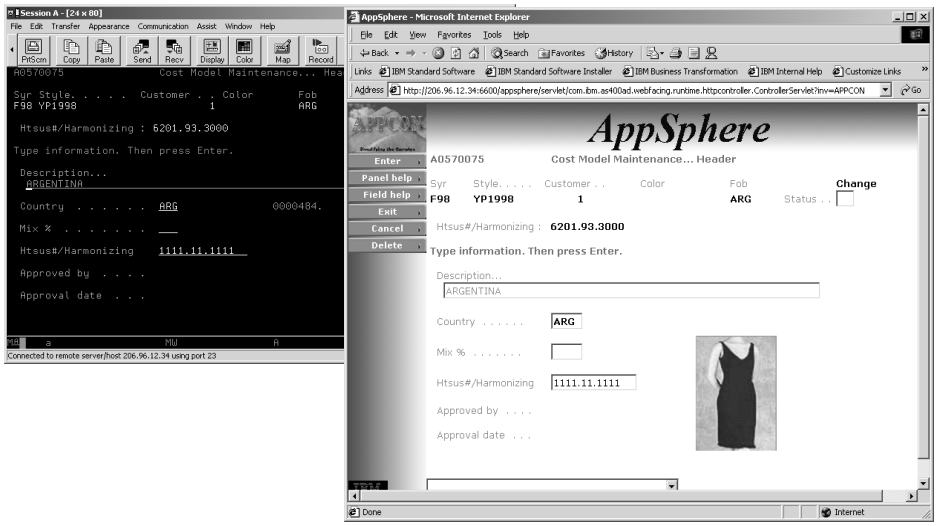
Now you know what an e-business application is and what technology it uses. Now we introduce what WebFacing is.

WebFacing Before and After



This slide shows a sample "before and after" of a green screen that has been WebFaced. These screens are courtesy of APPCON, an IBM iSeries business partner. See more at www.appcon4.com.

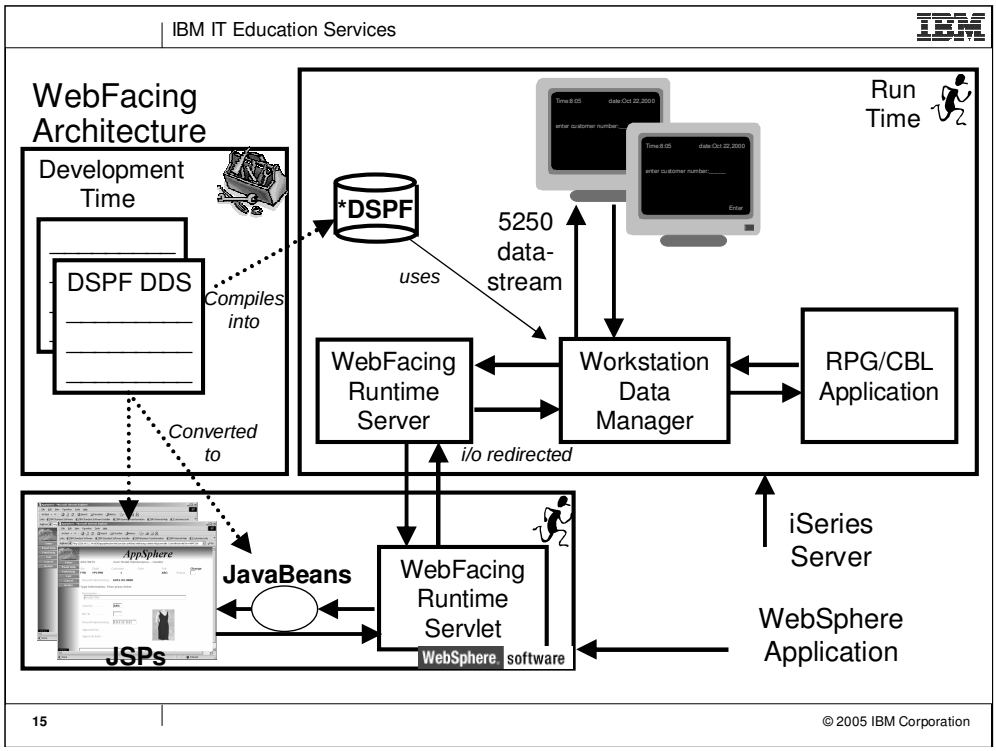
As you can see IBM's new WebFacing Tool converts existing 5250 interfaces to browser-based graphical user interfaces. With little or no modification to your original iSeries applications, you can extend the use of your programs to the Internet or an Intranet. Whether your applications are new or were written before the Internet became a viable platform for conducting business, with the WebFacing Tool, your applications can be available anywhere that users have access to a browser. You can use the WebFacing Tool with applications where DDS source code was used to create 5250 display screens. The tool has user-friendly wizards that facilitate selecting your original application's DDS source, converting the source, and deploying the new browser-based interface to your program as a WebSphere application. The conversion creates JavaServer Pages and JavaBeans that substitute for your DDS code and make Web access possible. After your DDS code has been converted, you can access the application through a browser or continue to use 5250 displays. Having the interface to your applications based on JavaServer Pages allows for more flexibility in customizing their appearance. Before your DDS code is converted, you can use the Style properties pages to change the look and feel of the pages that will be generated for you. Styles allow you to define attributes in your Web pages such as graphics, fonts, colors, and layouts. You can use one of the supplied styles or create your own. If you would like to update the appearance of a previously converted project, simply run the WebFacing Tool again and select a new style.

What is WebFacing?

- A Re-Facing tool and runtime for iSeries 5250 applications
- Development-time conversion
  - Of 5250 display file DDS source into Web page source (JavaServer Pages or JSPs)
- Run-time intercept
  - Of workstation data manager I/O to pass application data to generated Web application, prior to creation of 5250 data stream
  - Enables existing applications to run without change, indeed without even knowing they have been WebFaced

With the WebFacing Tool, you can quickly convert your DDS display file source members so that the user interface of your iSeries programs can run in a browser. When you convert your DDS display files, JSPs and Java beans are generated for you that substitute for the DDS code and make Web access possible. In the WebFacing Project wizard, you can select one or more DDS source members to convert, and select a Web look and feel from one of several predefined styles, or you can design your own Web style for use with your applications. The tool creates three Java beans and one JSP per record format; the Java beans hold the data for the record format, or control its appearance or other characteristics, and the JSP handles displaying the Web version of the screen, prompting for data, and handling input errors. The wizard generates an application home page to launch the Web-enabled version of your program.

When a user invokes a converted application from the browser, the WebFacing server on the iSeries system starts the host program. The server intercepts all calls to READ, WRITE, and EXFMT operations to DSPFs, so that in many cases your program (*PGM) can run without modifications, and without even detecting that it is being accessed using WebFacing. You might need to make coding changes if your application uses DDS keywords that are not supported by WebFacing, or if you want to modify the DDS screens so that the conversion to Web format produces a more attractive or consistent result.

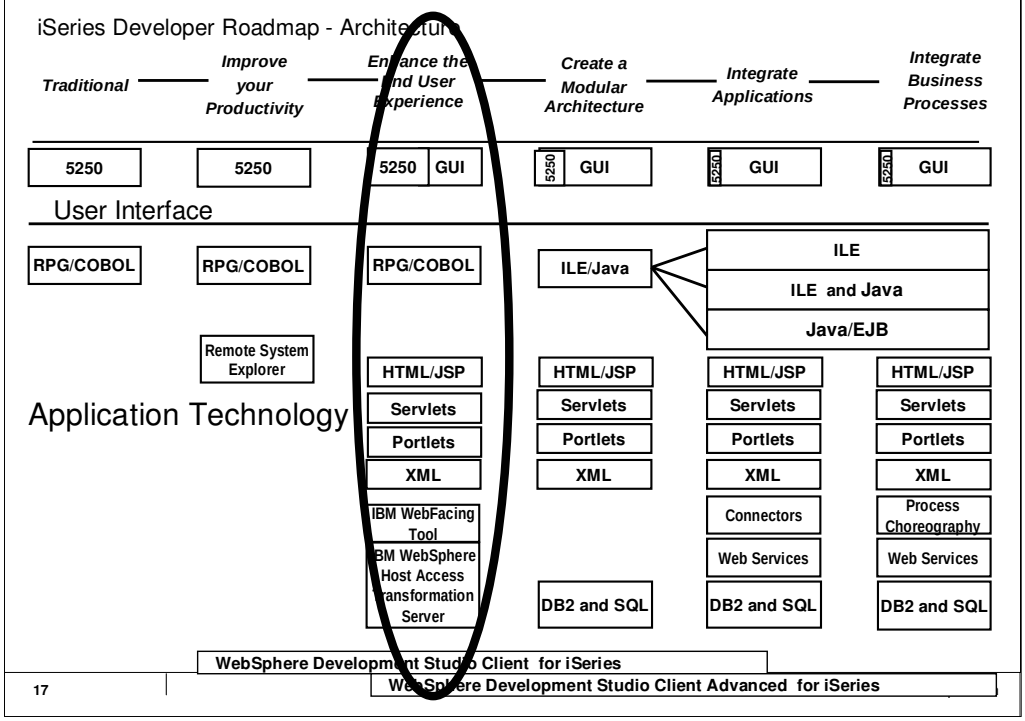


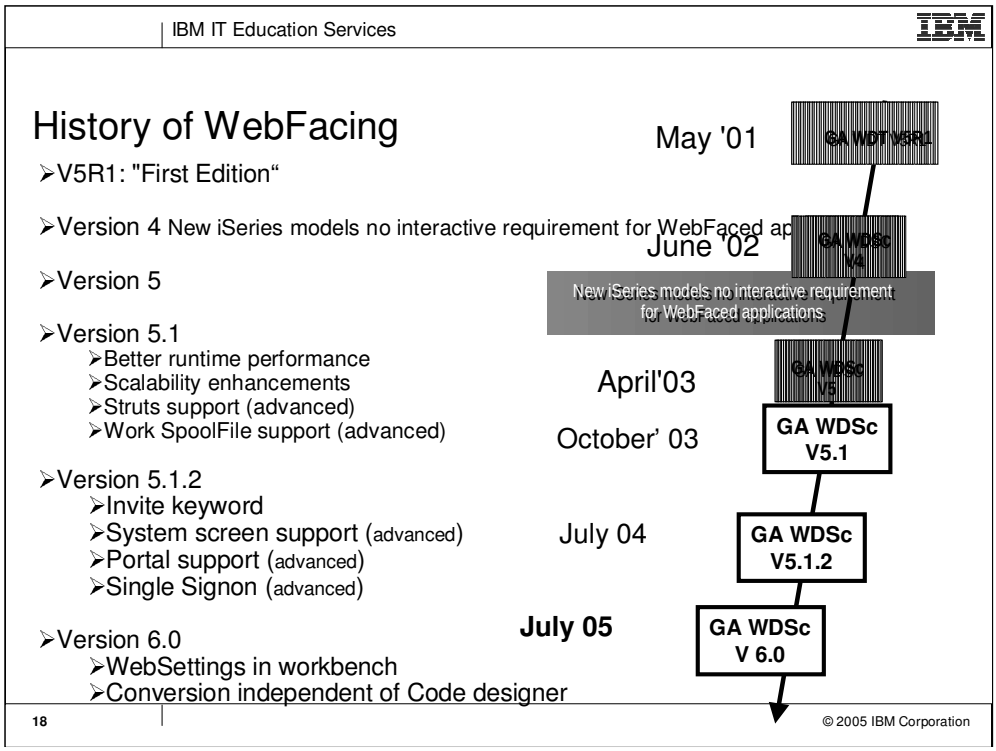
First the application is converted. This creates JSPs for each record format as well as Java beans. When the program performs a READ on a record format, control as well as the application data is sent to the Workstation Data Manager.. Because the job was started by the WebFacing Runtime Server, Workstation Data Manager knows this is a WebFacing request and passes the data and control to the WebFacing Runtime Server which runs on the iSeries. Control returns to the Webfacing Runtime Servlet that runs in WebSphere Application Server. The WebFacing Runtime Servlet locates the appropriate JSPs and Java beans. The WebFacing Runtime Servlet tells WebSphere Application Server to return the JSP back to the browser. The JSP is compiled and the resultant HTML is returned to the browser. Note that no 5250 datastream is generated in this flow.

Goals of WebFacing

- Quick conversion
  - Using existing skills
- Unlimited refinement
  - Using existing SDA skills, or using Web skills
- Cost effective
  - Tool part of ubiquitous tool set
  - Runtime part of operating system
  - Only pre-req is WebSphere Application Server Express or higher

You can get your RPG/COBOL programs running on the Web in a short time. Conversion is straight forward. After creating a project and specifying the DDS to convert, just choose Convert from the pop-up menu. Typically there is no change required by the host program. After the initial conversion, the new style can be applied to give the application a new look. With knowledge of SDA or JSPs and Cascading style sheets (CSS), you can modify shipped styles to create your own. You don't require other skills such as Java to WebFace an application. There are no additional costs from a previous version.


iSeries Developer Roadmap - Architecture
Traditional
Improve your Productivity
Enhance the End User Experience
Create a Modular Architecture
Integrate Applications
Integrate Business Processes
5250
5250
5250 GUI
5250 GUI
5250 GUI
5250 GUI
User Interface
RPG/COBOL
RPG/COBOL
RPG/COBOL
ILE/Java
ILE
ILE and Java
Java/EJB
Remote System Explorer
Application Technology
HTML/JSP
Servlets
Portlets
XML
IBM WebFacing Tool
IBM WebSphere Host Access Transformation Server
HTML/JSP
Servlets
Portlets
XML
DB2 and SQL
HTML/JSP
Servlets
Portlets
XML
Connectors
Web Services
DB2 and SQL
HTML/JSP
Servlets
Portlets
XML
Process Choreography
Web Services
DB2 and SQL
WebSphere Development Studio Client for iSeries
WebSphere Development Studio Client Advanced for iSeries



In May 2001 WebSphere Development Studio (WDS) for iSeries—a single package containing RPG, COBOL, C, C++, ADTS and unlimited licenses of WDT was introduced. Further, it introduced WebFacing, the technology for converting green-screens to a Web interface. This phase marked the beginning of a new world where all developers had all tools for modern application development.

The long-term goal has been to collapse the many tools in WDT into a single, integrated tool that can be used for all development. The first phase of that tool was introduced when IBM announced and delivered Version 4.0 of its client tool suite for iSeries, formerly known as WDT in June 2002. With Version 4.0, the suite received a new name—WebSphere Development Studio Client (Development Studio Client). The IBM WebFacing Tool was now integrated into the Development Studio Client workbench.

In version 5.0 of Development Studio Client, additional enhancements were made to the IBM WebFacing Tool.

These include:

•Support for viewing and printing spooled files

•Struts-compliant code generated by the WebFacing Tool conversion process

•Automatic configuration for UTF-8 support when you deploy to WebSphere Application Server version 5.0

•Better performance through data compression

•Support for function keys within window records

•Enhanced hyperlink support

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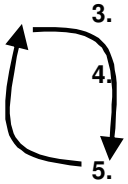
Previously we introduced Development Studio Client. Now lets look at how you create a WebFaced application, test it and deploy it.

WebFacing Scenario

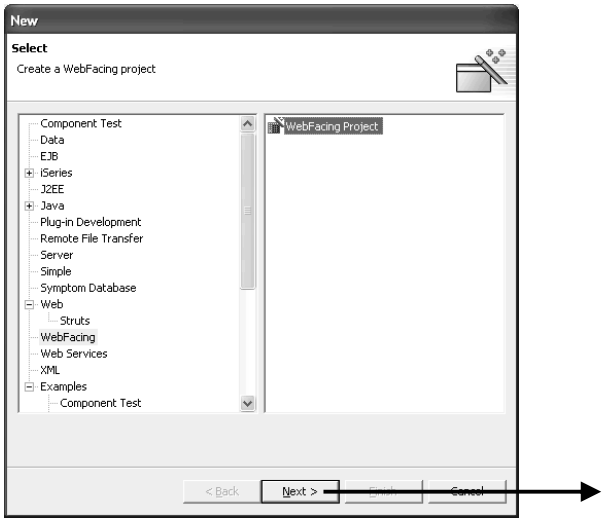


1. **Create new WebFacing project**
   Specify members to convert, look-and-feel style, how to call/invoke the application
2. **Convert the project**
   Creates Web stuff from the DDS and UIM source
3. **Run it!**
   Select “Run on Server” to run in built-in WebSphere
4. **Refine it**
   Using Web Settings in CODE Designer (launched from WebFacing)
   Using project’s Properties dialog
5. **Repeat**
6. **Export as EAR file, import into WebSphere Application Server on iSeries**
   Or use built-in server-tools support to publish to WebSphere Application Server on iSeries

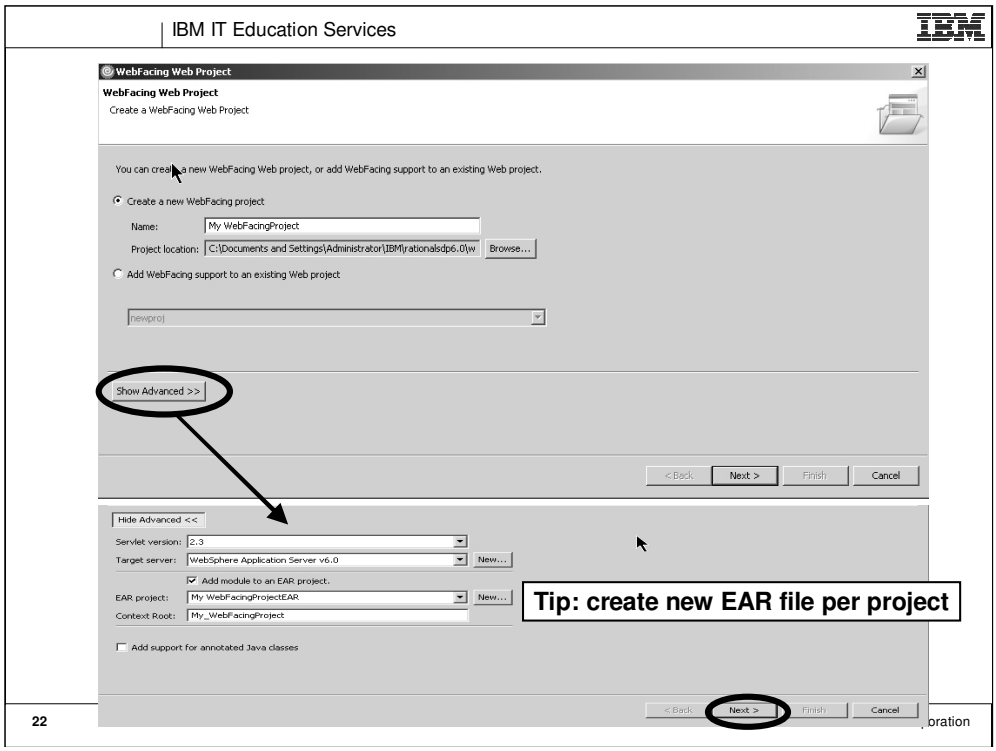
Here is a typical WebFacing scenario. After you start the workbench and open the WebFacing perspective, you create a WebFacing project. When you create this project you select the DDS source on the server that you want to convert, the CL command to start the application and the text for the Web page link and the style you want to use for your new Web pages. Next you convert the DDS to JSPs, beans. After conversion you are ready to run your JSPs using the Run on Server option which starts the WebSphere Test Environment, a local copy of the built-in WebSphere Application Server. Now you can iteratively improve the look of your new Web pages by using the Web Settings in CODE Designer and the Web Project’s Properties dialog. You can then re-test your changed WebFaced application. You can continue to refine it and retest your new Web pages until you have a design that you like. Finally you can move the new WebFaced application to a production server.

1a Create a New WebFacing Project

Use **File->New->Other**

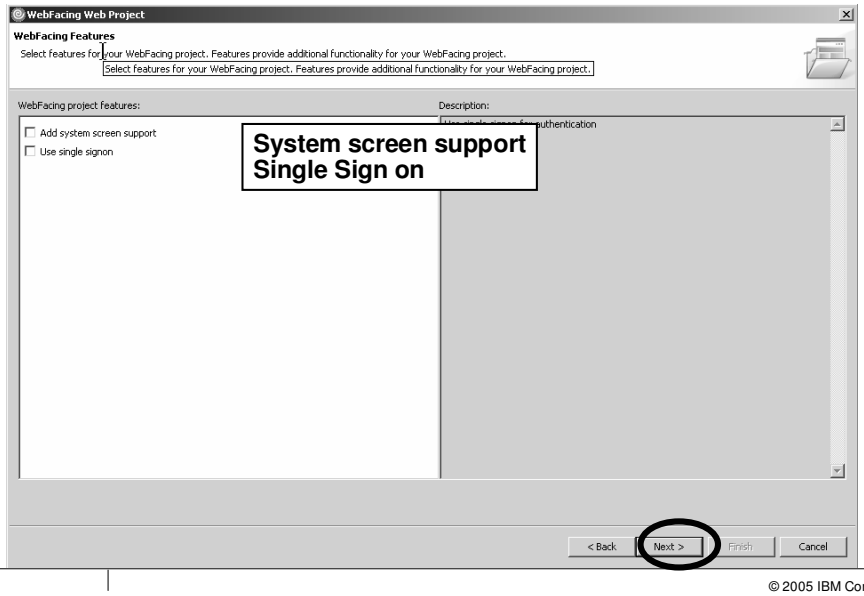


To begin, you create a new project. If WebFacing doesn't appear in the menu you select Other and then select WebFacing from the next dialog.

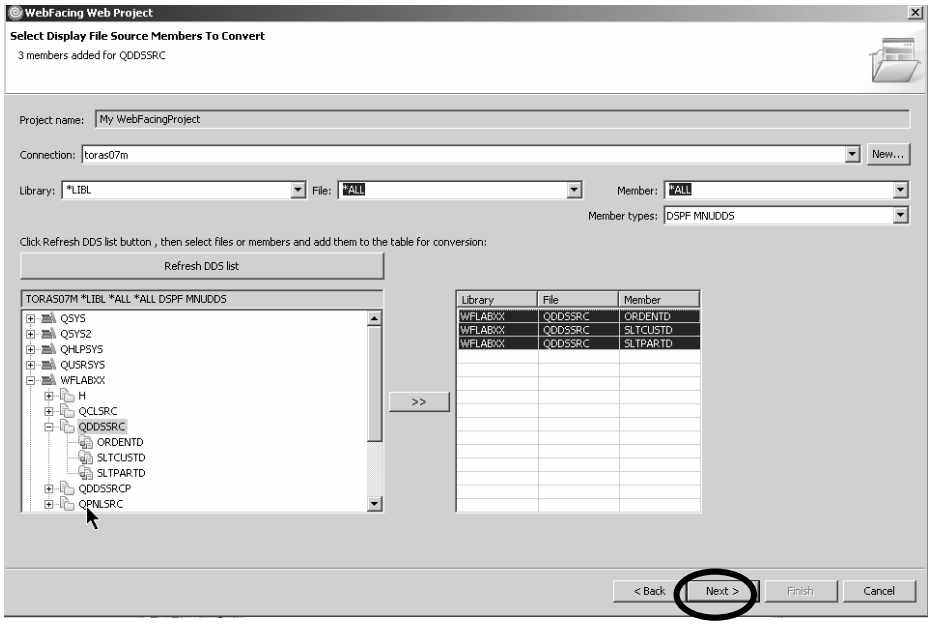


On this page of the wizard you give the project a name and specify where the files are to be stored. The default is to store them in the workspace directory. Web applications (which WebFacing is based on) are part of an EAR (Enterprise Archive) file, so we need to specify the EAR file name. The Context root is what you would specify as part of the URL in the browser to invoke the application. In Development Studio Client Advanced Edition you also can Enable Struts support. In doing so you comply with the Model-View-Controller paradigm. If you want to write a custom tag library for use with WebFacing, you would use the Generate JSP custom tags selection. This is an advanced edition feature only. What this means is that at conversion time the process of converting the DDS into JSPs can be influenced by user-written classes to change the JSP source that is emitted for fields.

Advanced option only



On this page of the wizard you select which connection (iSeries) contains the DDS. The member types allows you to select DSPF and/or MNUDDS (for menus). WebFacing supports menus. If you click Refresh list you will retrieve the library list, after you have signed on. From the library list you drill down to find the DDS source members you want to convert. When you click the >> push button, the selected members are moved to the list of members to be converted. If you click the folder all the members in the folder are moved to the list of members to be converted. In this case you don't need to select each member.



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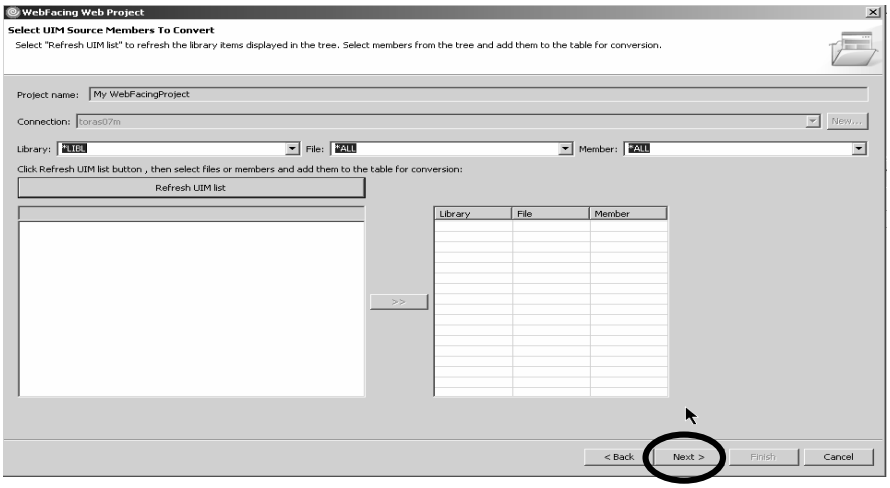
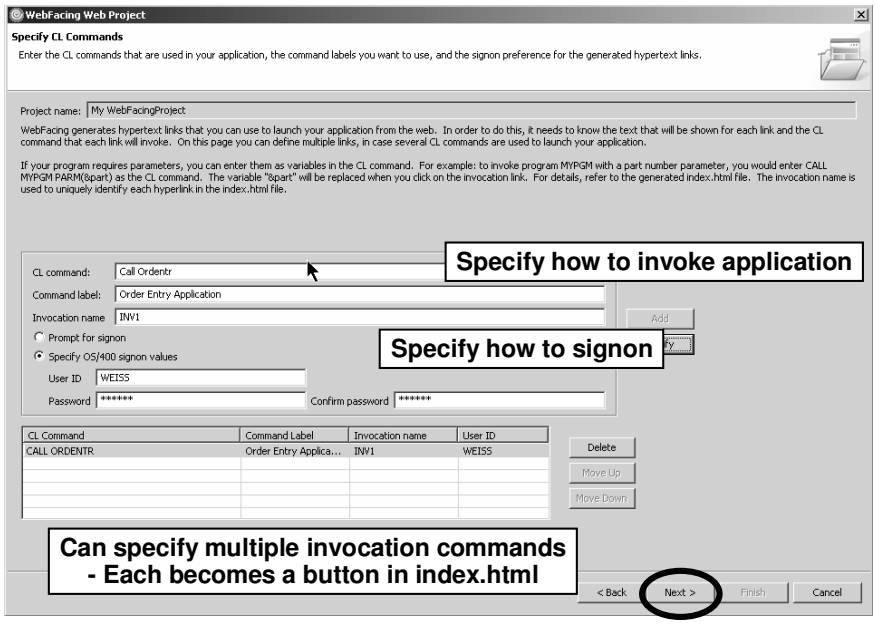
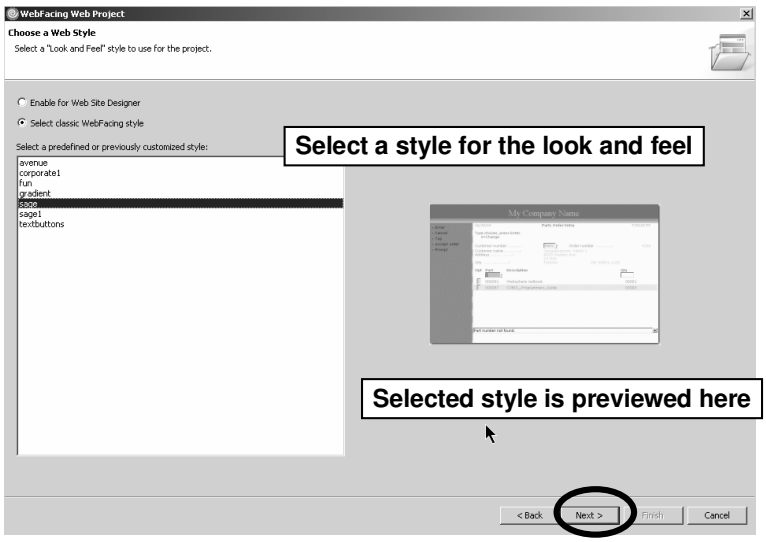
Select UIM panel groups (help) to convert



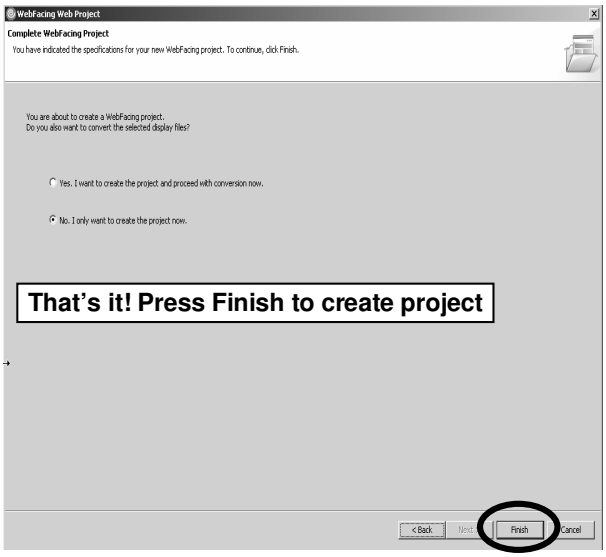
On this page of the wizard you select the UIM help members you want to convert. Again you drill down to locate the members.



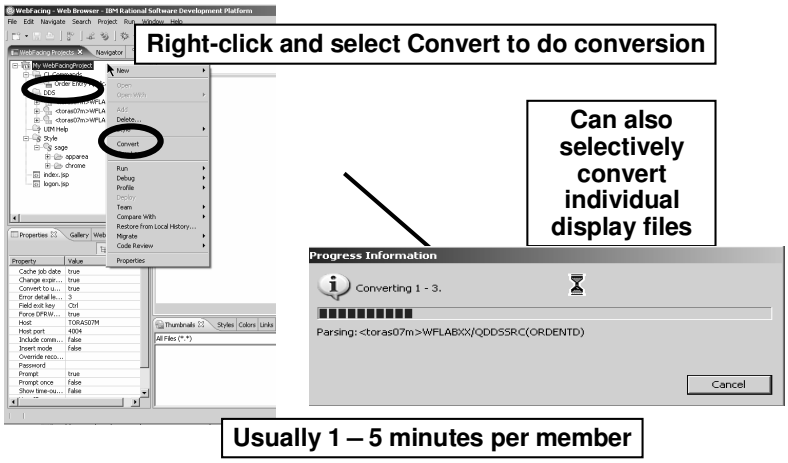
On this page of the wizard you specify the command to call the application. The Command label text is the text that will appear on the generated Index.html page to launch the application. The CL command is an iSeries command to start the program. Typically you just do a CALL to the program. If the program has parameters you specify them here. Specifying parameters results in input fields being generated on the index.html page where the user would enter their value. If Prompt for sign-on is selected, an authentication dialog (login.jsp) is displayed before the application is launched. Alternatively you can specify a User ID and password to be passed to the WebFacing server before the program is started. Either way, the User ID and password is used to start an interactive job on the iSeries and invoke the specified command.



On this page of the wizard you choose the style for your application. After the project has been created another style can be applied without performing conversion. After conversion the WebFacing Tool WebSettings option or the Properties dialog allows you to customize one of the pre-defined styles and save it as a new style that can then be used by other projects.



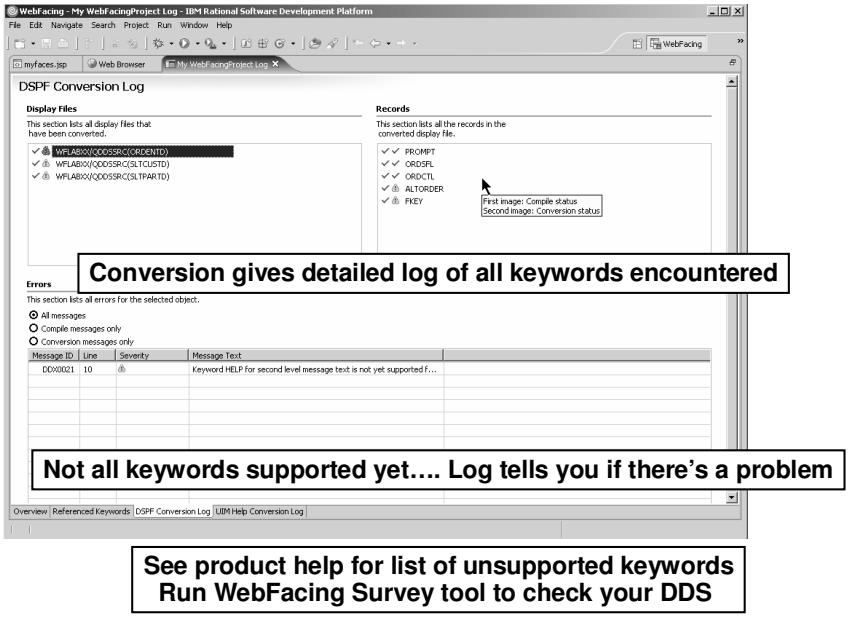
On this page of the wizard you choose just to create the project and perform conversion at a later time, or create the project and perform conversion when Finish is pressed. You click Finish to complete the creation of the WebFacing project



To perform conversion, right click on the DDS folder and choose convert. This will convert all members in this folder. If you made changes to a single member, you could just select that member to convert. Note that the source remains on the iSeries. The conversion process reads the DDS members and performs conversion in memory. Conversion creates 2 JSPs and 3 Java beans for each record format. It is important to convert all DDS members that are part of the application. If a member is not converted you will get a 'class not found' message at run-time.

Conversion

- Creates Java Server Page and XML descriptions per record format:
  - XML describes data,view,and feedback for record format
  - JSP displays output and prompts for input
- Creates an "invocation page" per conversion project: (index.html)
  - Web page with links
  - Each link results in starting a job, running a user-supplied CL command which starts the application

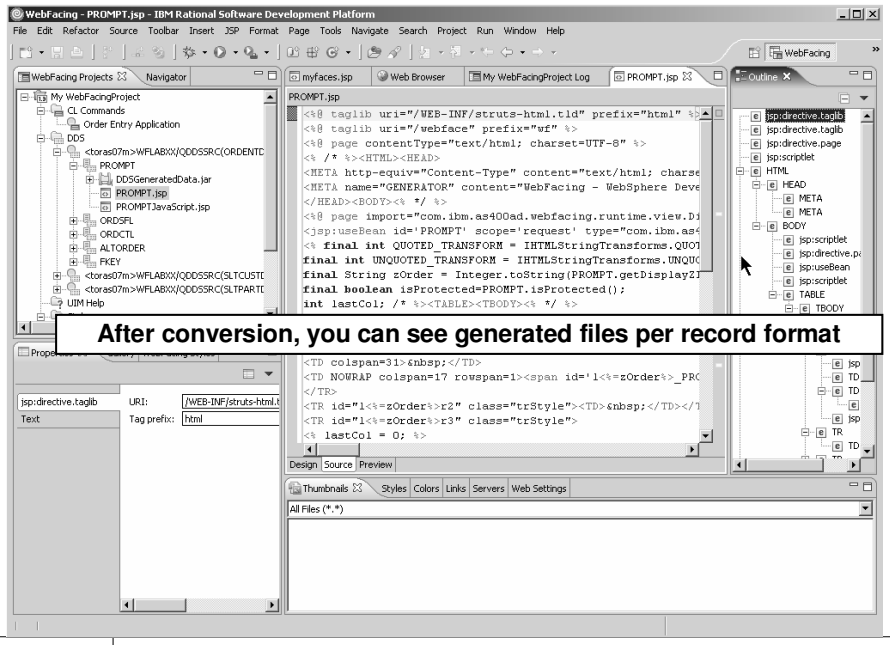


Conversion gives detailed log of all keywords encountered

Not all keywords supported yet…. Log tells you if there's a problem

See product help for list of unsupported keywords
Run WebFacing Survey tool to check your DDS

Once conversion is complete, the conversion log is displayed in its own view. Note the tabs at the bottom of the log view to see different parts of the conversion log. Review the conversion log to be sure all members were converted. A red X symbol indicates conversion failed for that member. No JSPs or beans were created. See the Message Text to determine the cause of the failure and fix as necessary.

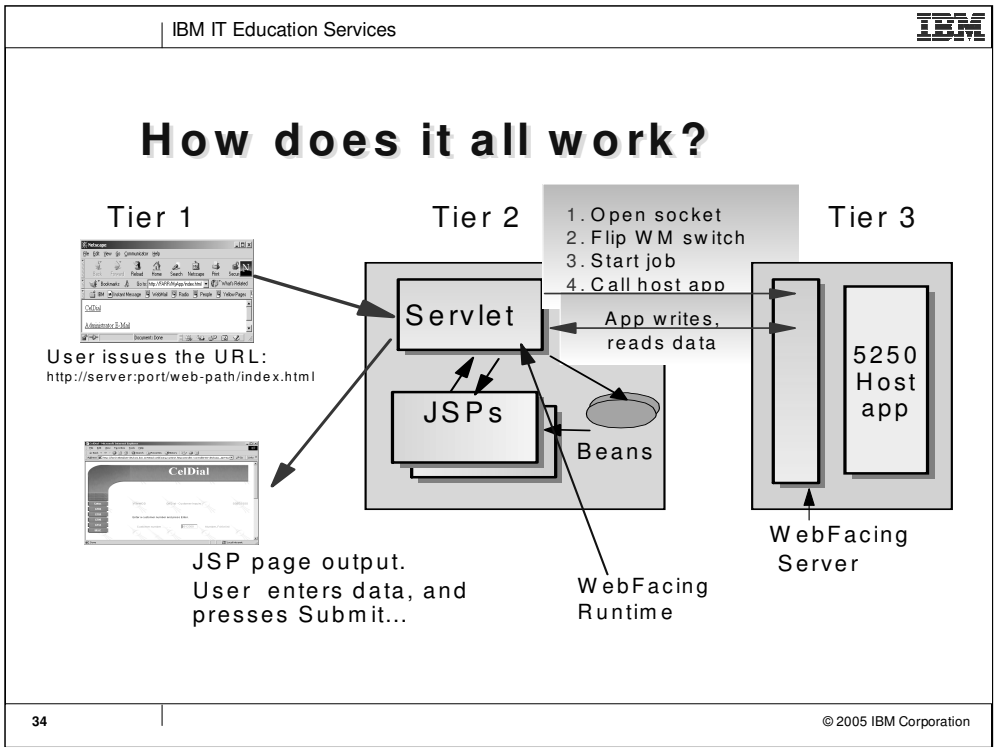


By switching to the WebFacing Projects view you can see the directory structure of the project after conversion. Note that there are 2 JSP files created for each record format. To see the generated JSP, double-click it to open it in Page Designer.

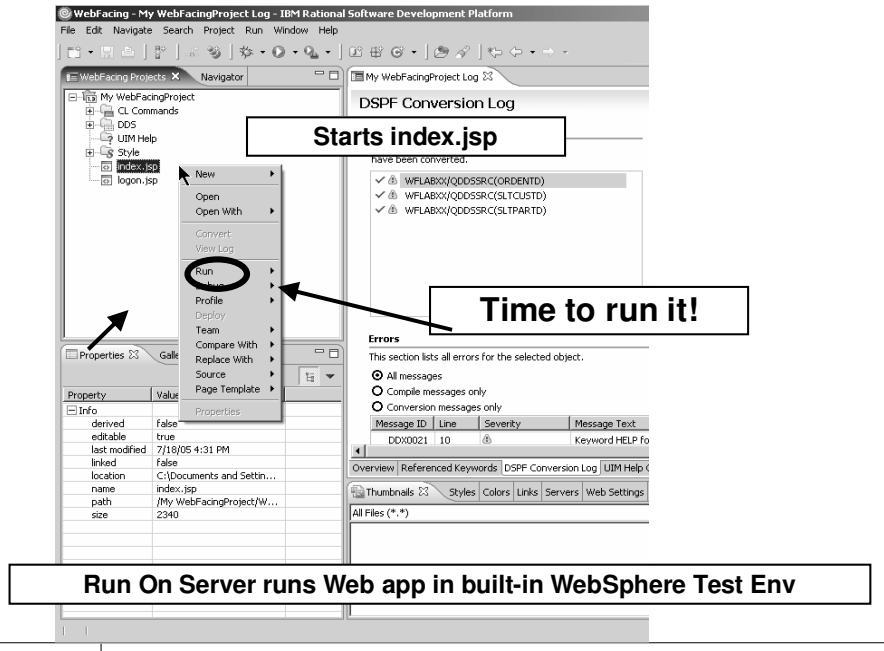
Invocation Sequence

- Generated link calls WebFacing Servlet runtime
  - Extracts CALL information from web.xml
  - Extracts user ID information from web.xml, or prompts for it
  - Starts server job, in WebFaced mode
  - Calls/invokes application
    - Application runs, writing dspf formats and then reading
    - Workstation data manager passing data to WF Server
    - Which passes it on to WebFacing Servlet
    - Which puts it in a bean and passes it to the JSPs
      - All written JSPs up to the read are collected into one
    - User sees screen, presses Enter
    - Control goes back to WF Servlet, which passes to WDM
    - WDM passes data back to application as usual

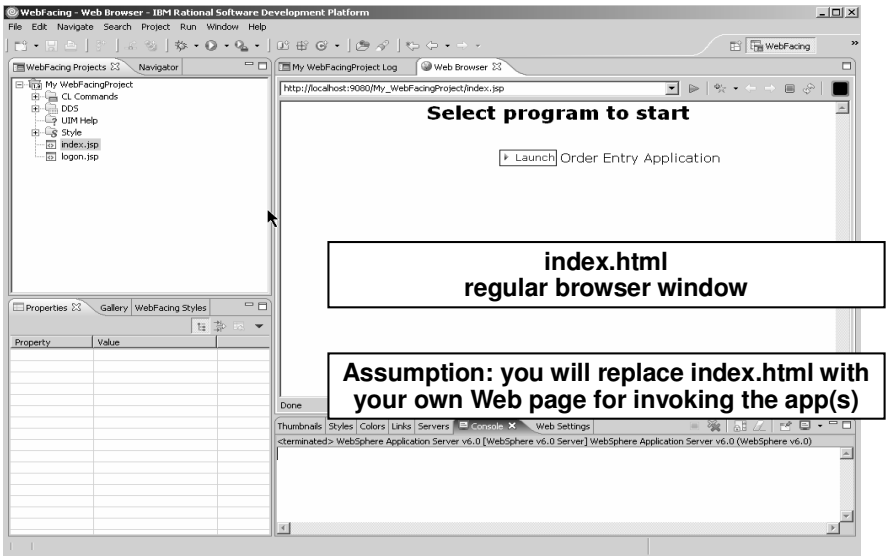
Here you see the invocation sequence. The generated link calls the WebFacing Runtime Servlet which extracts the call information from web.xml. Then the user ID information is extracted from web.xml or user ID information is prompted. The server job is started in WebFaced mode. This calls the application. The application runs and writes dspf formats and then reads. The Workstation Data Manager passes data to the WebFacing Runtime Server which passes it to the WebFacing Runtime Servlet which puts it in a bean and passes it to the JSPs. The user sees the screen and presses Enter. Control returns to the WebFacing Runtime Servlet which passes to the WorkStation Data Manager. Workstation Data Manager passes data back to the application.



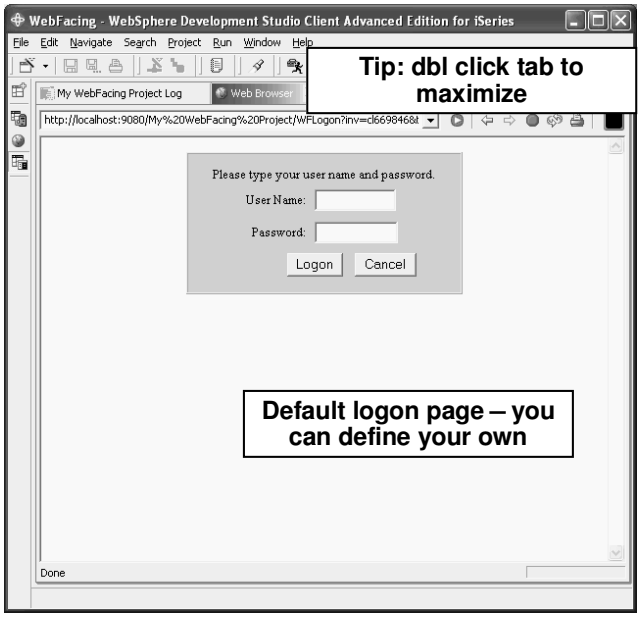
Here you see the invocation sequence. The generated link calls the WebFacing Runtime Servlet which extracts the call information from web.xml. Then the user ID information is extracted from web.xml or user ID information is prompted. The server job is started in WebFaced mode. This calls the application. The application runs and writes dspf formats and then reads. The Workstation Data Manager passes data to the WebFacing Runtime Server which passes it to the WebFacing Runtime Servlet which puts it in a bean and passes it to the JSPs. The user sees the screen and presses Enter. Control returns to the WebFacing Runtime Servlet which passes to the WorkStation Data Manager. Workstation Data Manager passes data back to the application.



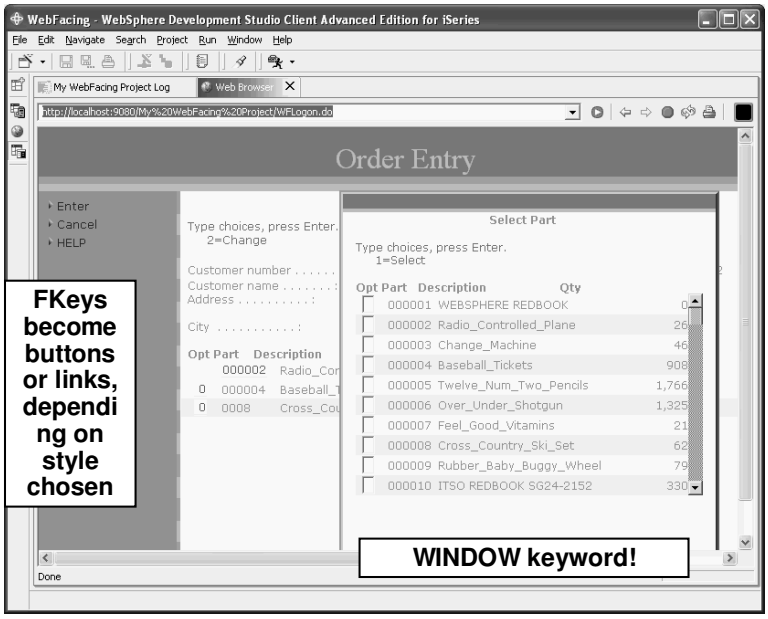
Once the applcation has been converted it can be tested in the built-in WebSphere Test Environment. Locate the index.html page and choose Run on server. If not yet started, the WebSphere Test Environment will start. The index page will appear in the internal browser view.



This is the index.html page that was generated based on your choices during conversion or by settings in the Properties dialog. If you click on a link, the WebFacing run-time servlet will be invoked (in WFRun.jar). Passed as a parameter is the invocation file that contains the system name and the name of the program to call. To see how WebFacing is invoked choose View/Source from the browser window.



The Sign-on dialog opens. This is default sign-on page. You can design your own sign-on page.



Here's the result of a WebFaced application. running in a browser. In this case, the DDS used the WINDOW keyword. In that case windows are created that can be moved around the browser. Notice that subfiles are fully supported. If you click the up/down arrows in the subfile scroll bar, this action will navigate the subfile.

6 Deploying to Remote WebSphere

- **Use File->Export to export EAR file**
  - Export to a mapped IFS drive
  - Use WebSphere Administrator Console to import EAR file
  - Bring up Browser, enter URL to start application
- **Or, configure a server in Server Tools for iSeries WebSphere Application Server** and use Publish to push to it, and then Run On Server to run it
  - This requires a PTF still coming at time of press
  - This also replaces the server's configuration file
    - So use a dedicated WAS instance for testing
- **Tip:** look at Change Management tools like SoftLanding's to automate delta deployments

Once the application has been tested and is running properly it is deployed to the production WebSphere Application Server.

Choose File Export and specify the EAR file name you specified when you created the project. Once the EAR file has been deployed, use the WebSphere Application Server Administration console to install the application in WebSphere Application Server.

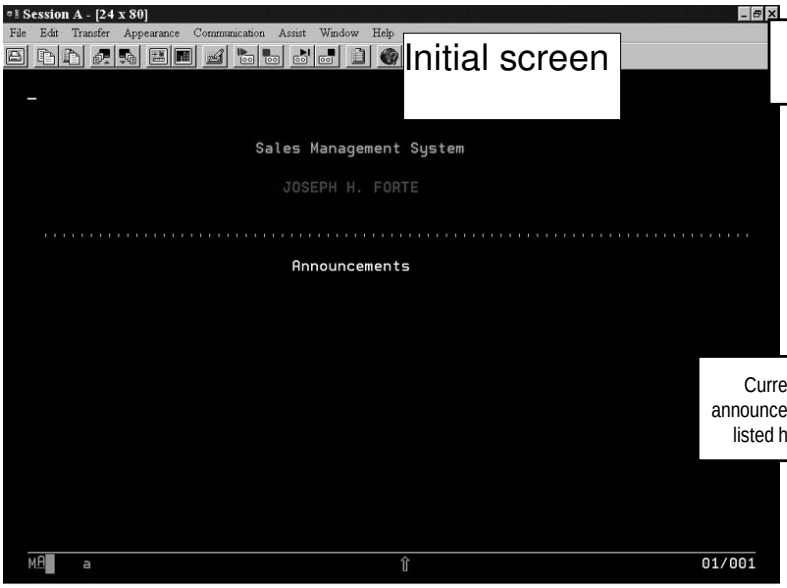
Table of contents

Previously we reviewed a typical WebFacing application scenario including application testing and deployment. Now lets look at customizing a WebFaced application.

WebFacing Examples

- Customers/Business partners
  - Basic conversion, minimal customization
    - Gulistan Carpet
      - Sales management application
    - Astech
      - Typical Work-With application
    - GUS
      - Charisma ERP application
  - Conversion with added customization
    - APPCON
      - AppSphere ERP application
  - Conversion customization tools
    - ebt-now
      - Built additional tools to analyze application
      - Conversion results modified to achieve custom results
    - Computer Guidance Corporation
      - Tooling to improve overall Web UI

Gulistan Green Screen



Initial screen

Gulistan

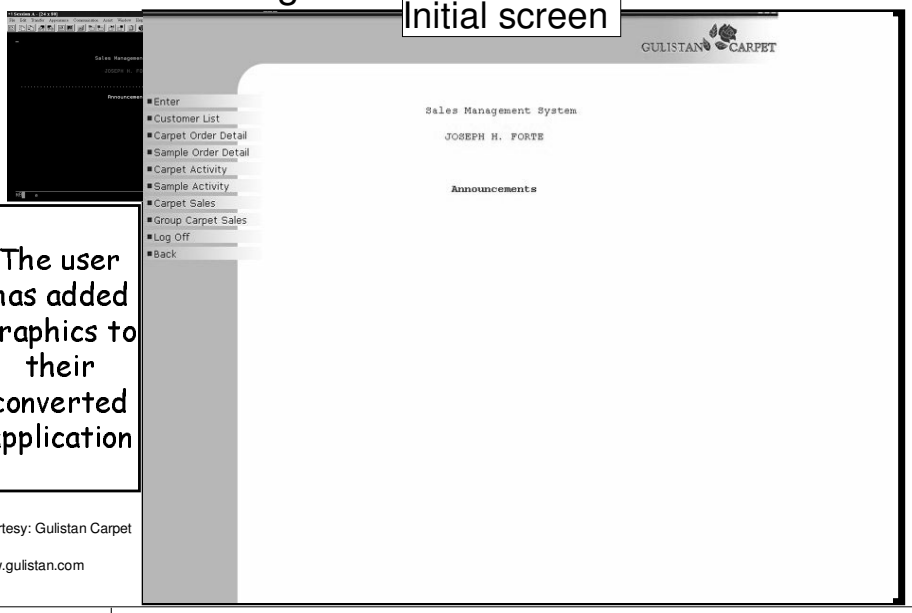
Courtesy: Gulistan Carpet Inc.
www.gulistan.com

Current announcements listed here

'Before' screen of Gulistan initial screen

Gulistan Web Page

Initial screen



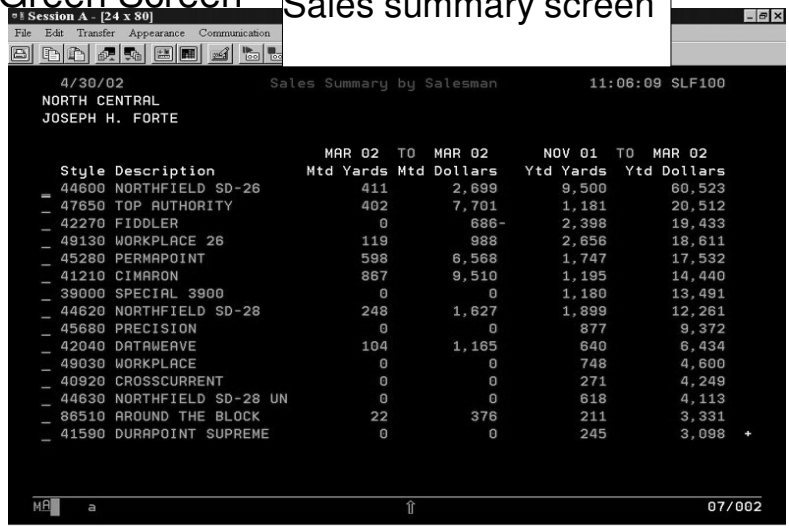
The user has added graphics to their converted application

Courtesy: Gulistan Carpet Inc.
www.gulistan.com

WebFaced version of Gulistan initial page using one of the supplied styles
Note they've customized the header by adding their own graphic

Gulistan Green Screen

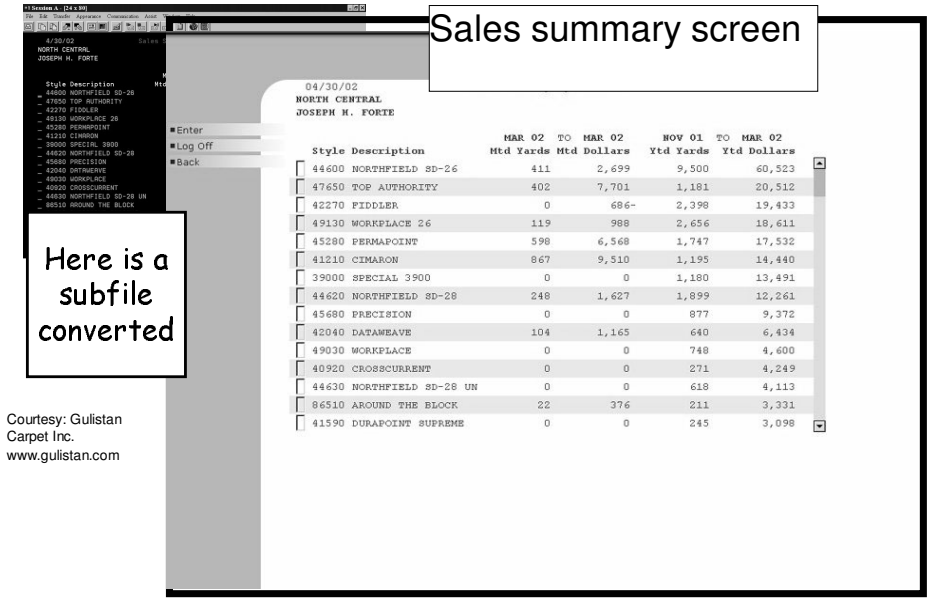
Sales summary screen



Courtesy: Gulistan Carpet Inc.
www.gulistan.com

Gulistan typical Work With Green screen

Gulistan Web Page

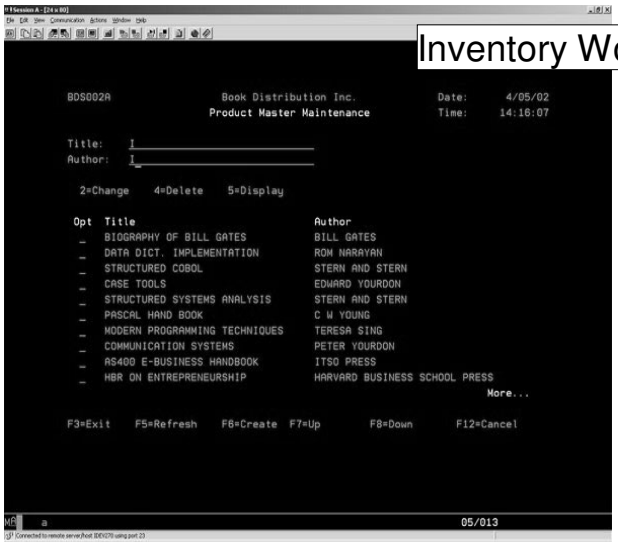


Courtesy: Gulistan Carpet Inc.
www.gulistan.com

WebFaced version of Work With green screen

Note subfile has a slider; user clicks on up/down arrows to navigate the subfile

ASTECH Green Screen



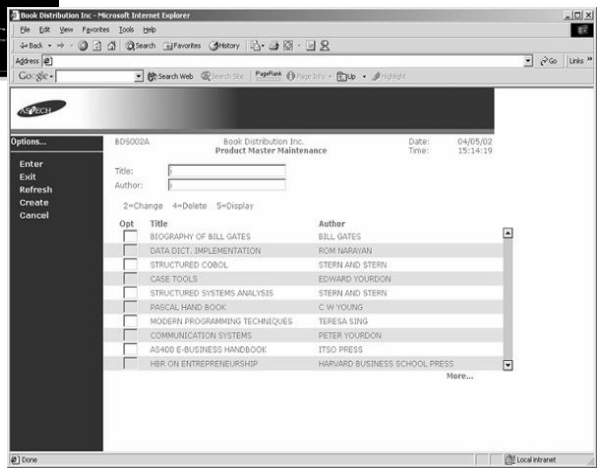
Courtesy: ASTECH Solutions Inc
www.astech.com

Astech Work With inventory green screen
Astech will provide WebFacing services to customers

ASTECH Web Page

Inventory WorkWith

The user created their own style for conversion

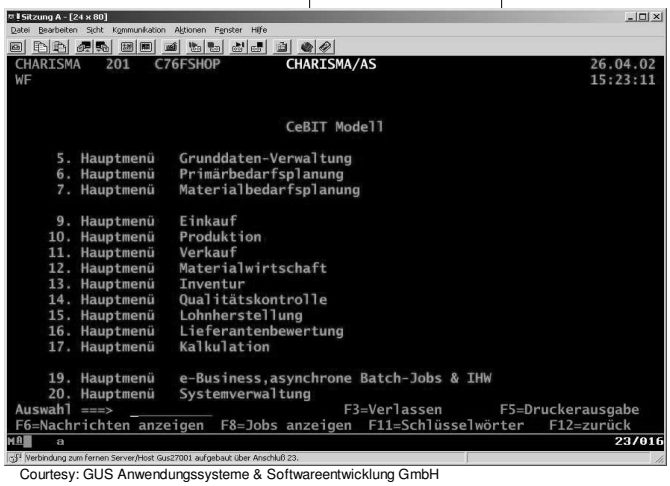


Courtesy: Astech Solutions Inc.
www.astech.com

WebFaced version of Astech's Work with green screen
Note the style is not one shipped with WDSC. This customer has created their own style

GUS Green Screen

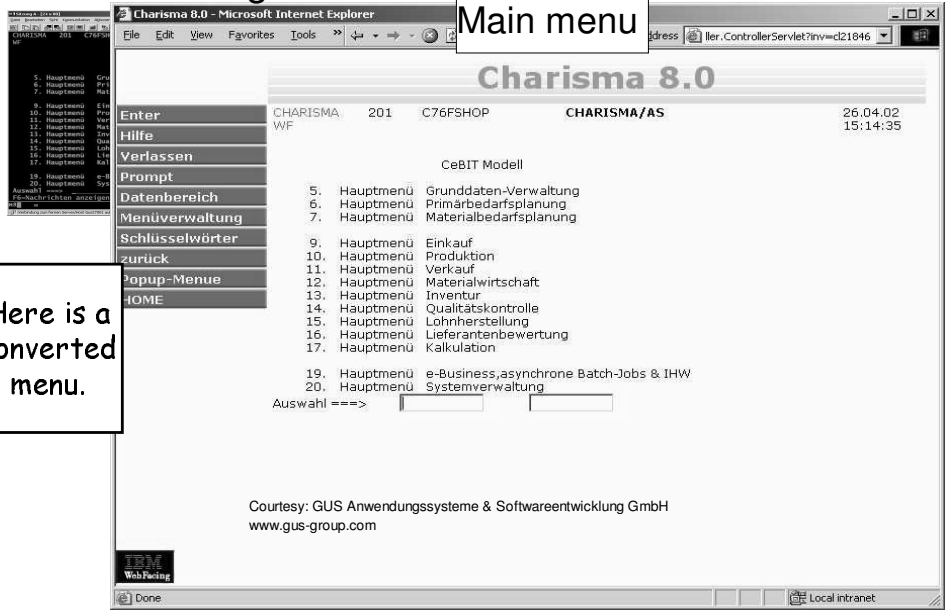
Main menu



Courtesy: GUS Anwendungssysteme & Softwareentwicklung GmbH
www.gus-group.com

Menu screen from GUS

GUS Web Page



Webfaced version of GUS menu screen

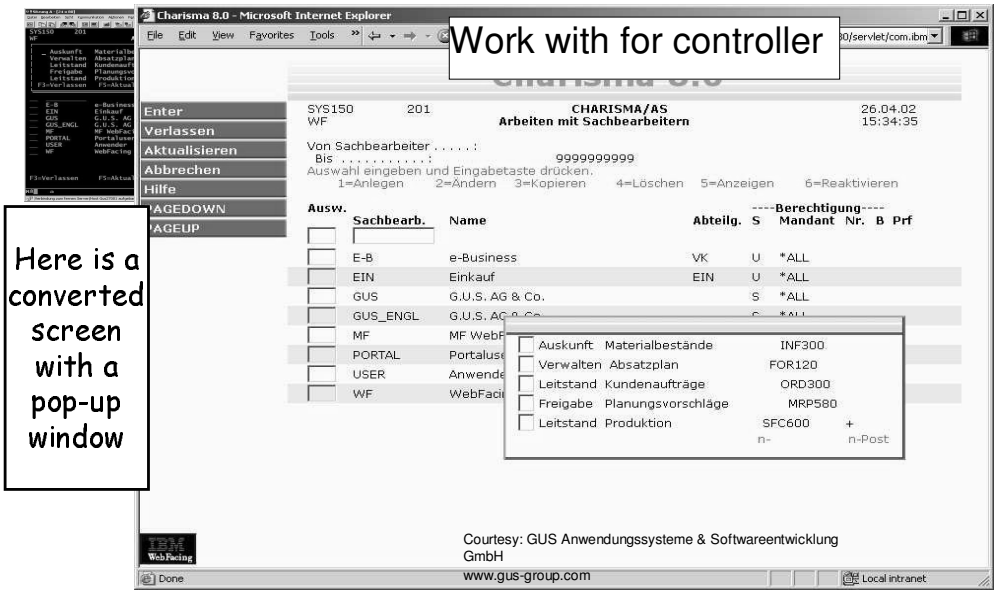
GUS Green Screen

Work with for controller

Courtesy: GUS Anwendungssysteme & Softwareentwicklung GmbH
www.gus-group.com

Example of green screen using the WINDOW keyword to display a pop-up window

GUS Web Page



The converted screen includes a window that can be moved around the screen

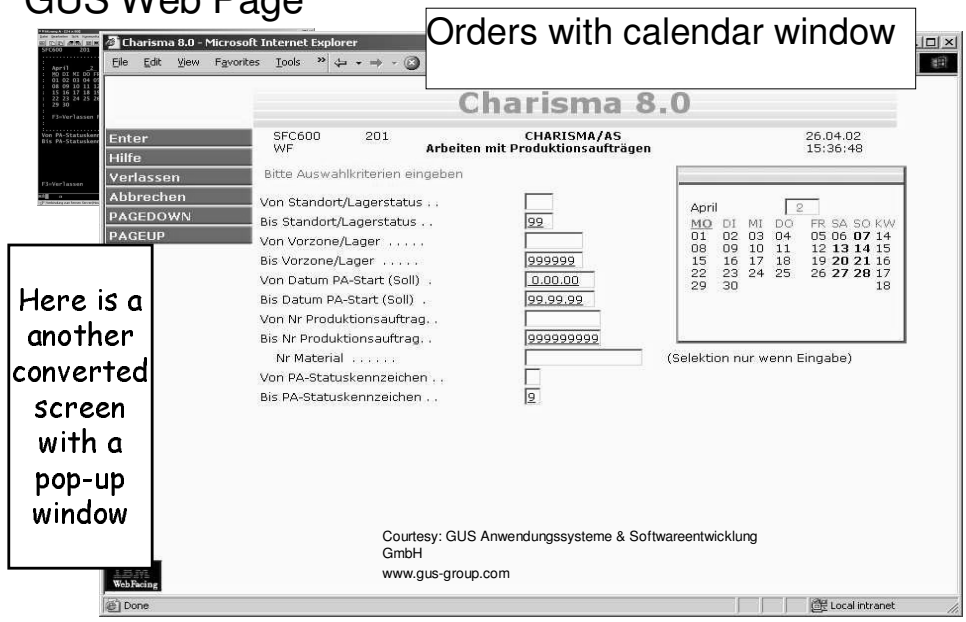
GUS Green Screen

Orders with calendar window

Courtesy: GUS Anwendungssysteme & Softwareentwicklung GmbH
www.gus-group.com

Another example of a window in a green screen showing a calendar in a window

GUS Web Page

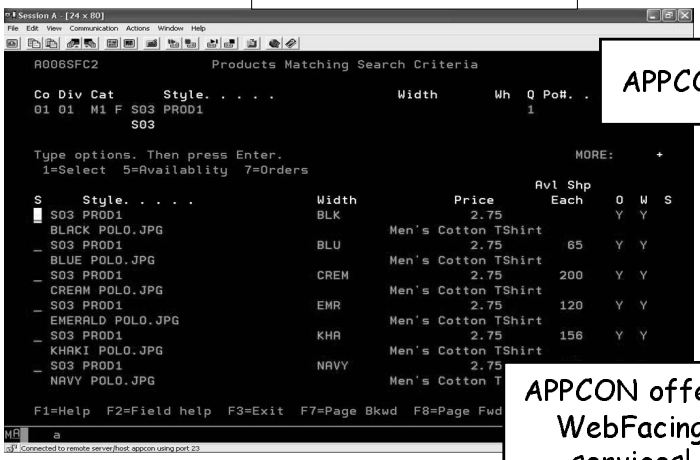


Here is a another converted screen with a pop-up window

WebFaced version of screen has a window that can be moved about the screen.

APPCON Green Screen

Work with products



APPCON

APPCON offers WebFacing services!
www.appcon4.com

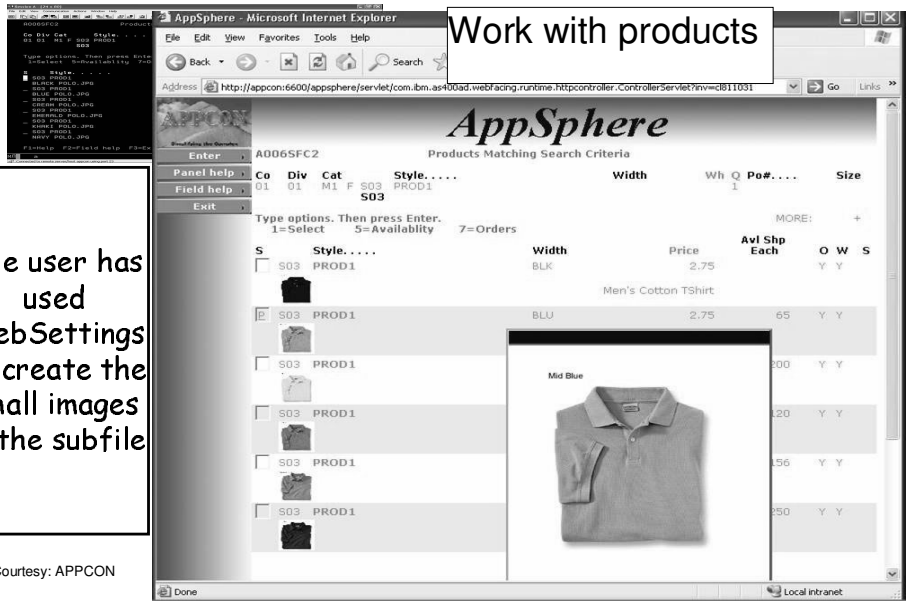
Courtesy: APPCON

Example of green screen from AppCon
Appcon provides software for the apparel industry

Is an early adopter of WebFacing

Also provides WebFacing services

APPCON Web Page



Courtesy: APPCON

WebFaced version of Appcons green screen

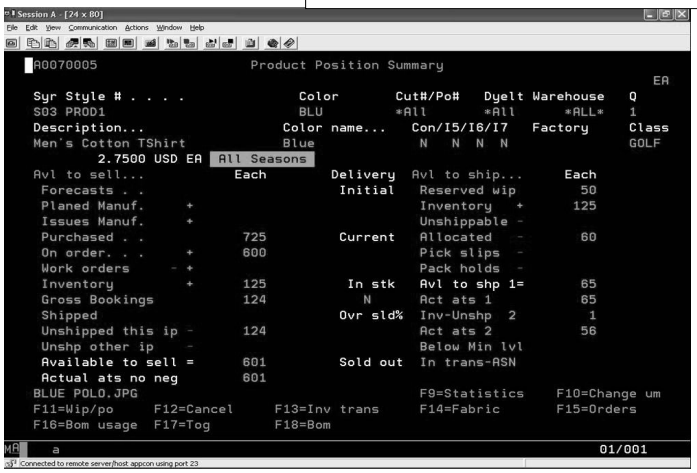
Note that the subfile shows a small image of the item

The image was created by setting WebSettings in the DDS before conversion

The pop-up window with the larger image was generated using the Web Interaction Wizard - another component of WDSC

APPCON Green Screen

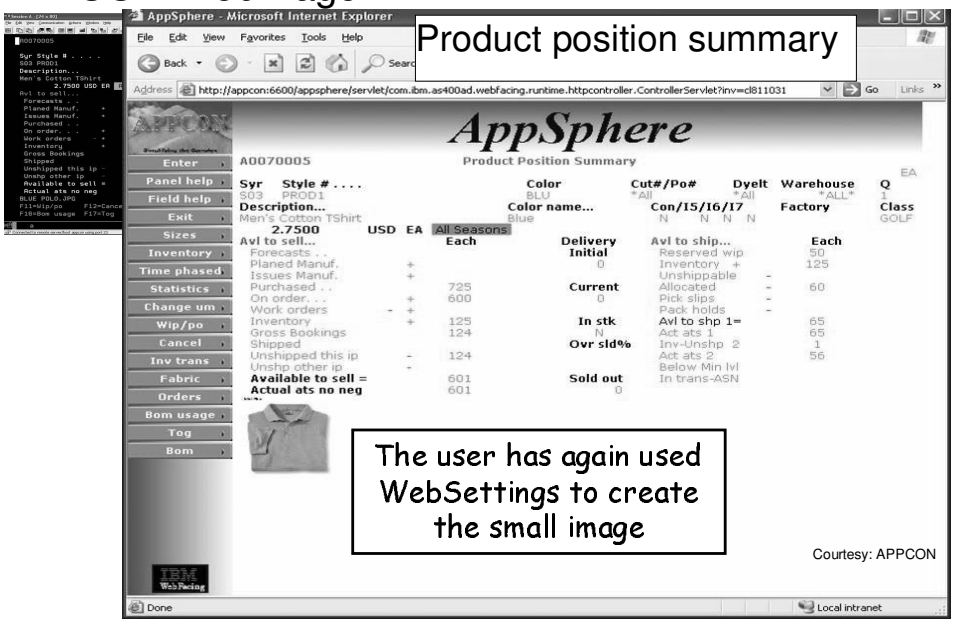
Product position summary



Courtesy: APPCON

Another green screen from Appcon showing details on an item

APPCON Web Page



WebFaced version of detail screen

Again, the image was generated by using the WebSettings feature

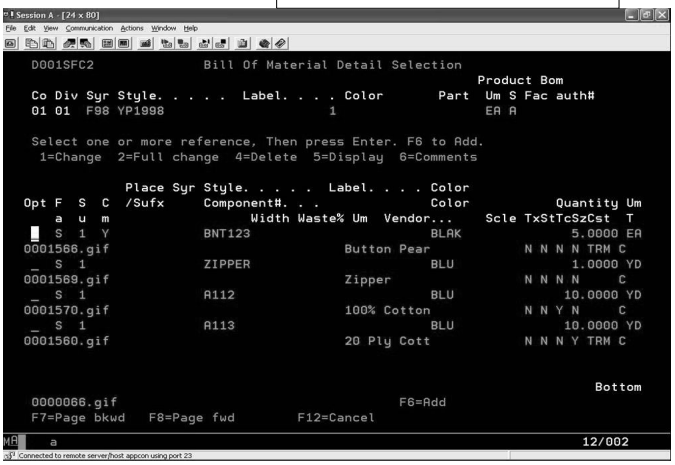
In WebSettings you can indicate that a field contains an image name

During conversion the correct tag is created

During runtime, the field value is added to the tag and the image is displayed

APPCON Green Screen

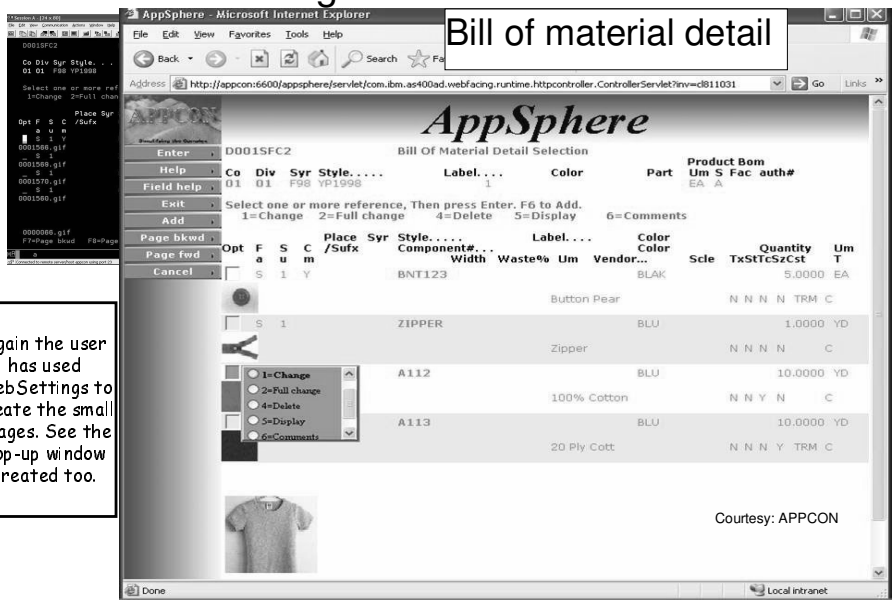
Bill of material detail



Courtesy: APPCON

Another screen from Appcon showing the bill of material for an item

APPCON Web Page



Again the user has used WebSettings to create the small images. See the pop-up window created too.

WebFaced version of Bill of Material screen

Again, WebSettings were used to create the image

Note the pop window with the radio buttons This pop up was generated because the option field had the VALUES keyword

When the user hovers the mouse over the option field the pop up is displayed

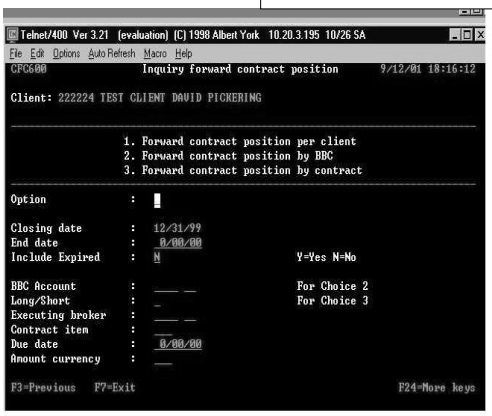
User then clicks on the option and the correct value is inserted in the option field

User can still enter directly into the option field

ebt-now Green Screen

Contract inquiry

ebt-now



ebt-now offers WebFacing services!
www.ebt-now.com

Courtesy: ebt-now
www.ebt-now.com

Example of a green screen from ebt-now

ebt-now also offers WebFacing services

ebt-now Web Page

Contract inquiry

The user has used a supplied style for conversion

Courtesy: ebt-now
www.ebt-now.com

Main Menu

Enter
CA03
CF05
CA07
CF08
CF24
HELP

CFC600 Inquiry forward contract position 11/16/01 10:34:50

Client: 222224 TEST CLIENT DAVID PICKERING

1. Forward contract position per client
2. Forward contract position by BBC
3. Forward contract position by contract

Option :

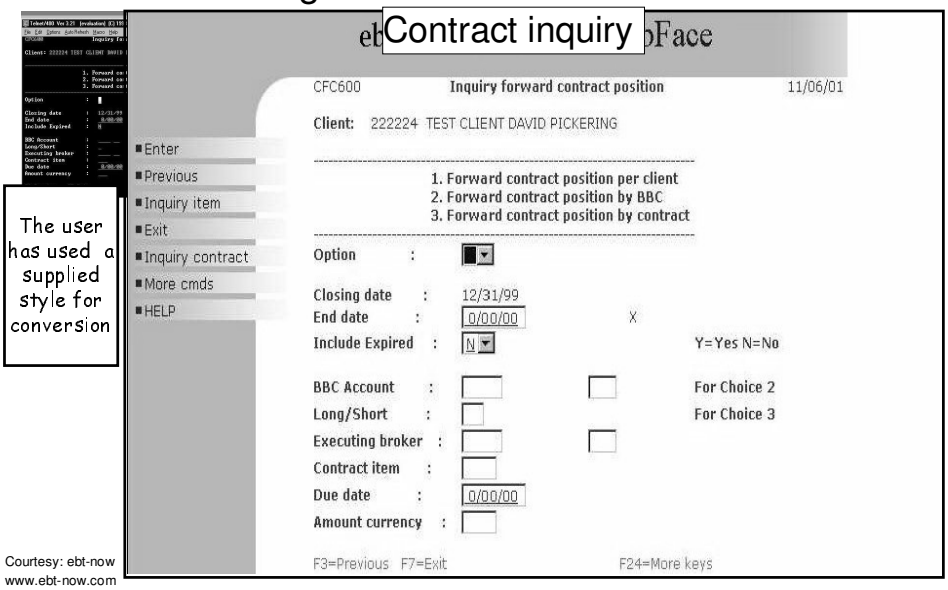
Closing date : 12/31/99
End date : 0 /00 /00
Include Expired : N Y=Yes N=No

BBC Account : For Choice 2
Long/Short : For Choice 3
Executing broker :
Contract item :
Due date : 0 /00 /00
Amount currency :

F3=Previous F7=Exit F24=More keys

WebFaced version of ebt-now screen using one of the supplied styles

ebt-now Web Page

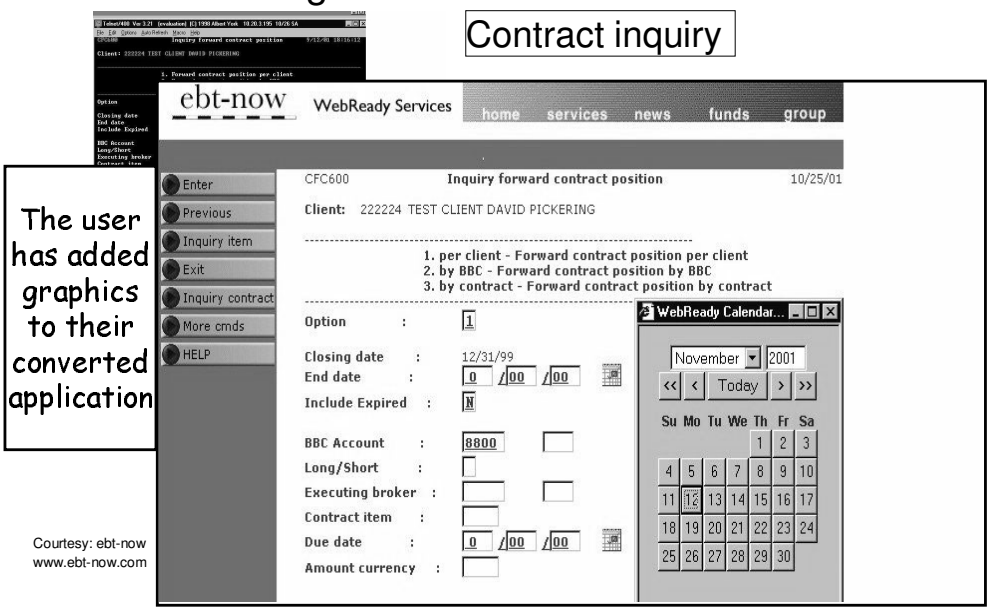


The user has used a supplied style for conversion

Courtesy: ebt-now
www.ebt-now.com

Ebt-now Web contract inquiry page. Here a supplied style for conversion was used.

ebt-now Web Page



The user has added graphics to their converted application

Courtesy: ebt-now
www.ebt-now.com

Customized version of ebt-now panel

Note the small calendar icon they have inserted next to the date fields

Clicking an icon causes the JavaScript calendar window to appear

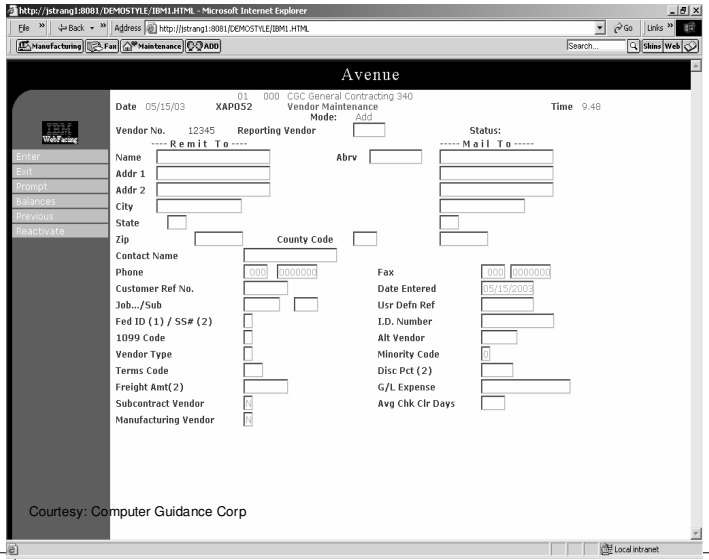
Clicking a date push-button on the calendar inserts the selected date in the date field

JavaScript calendar was developed by ebt-now

CGC sample Green Screen

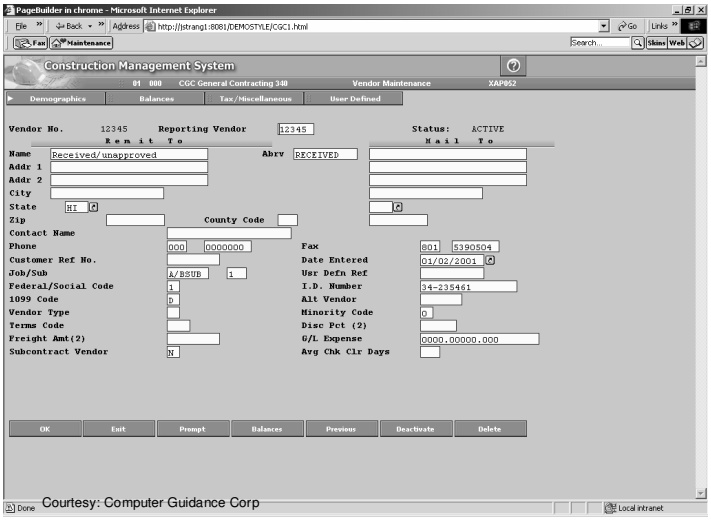
Courtesy: Computer Guidance Corp

WebFacing without enhancements



Courtesy: Computer Guidance Corp

WebFacing – with CGC tool

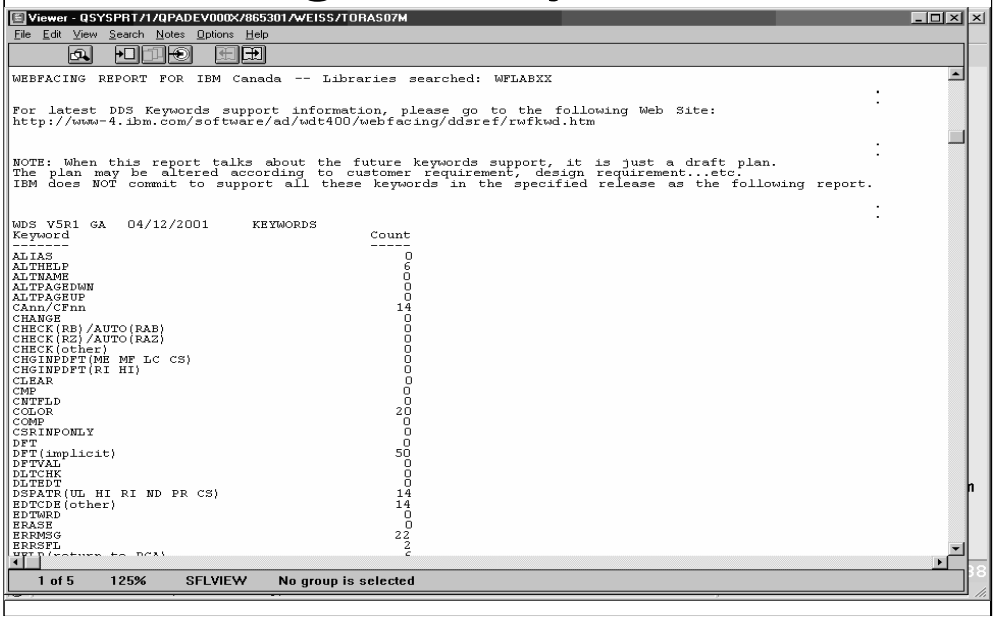


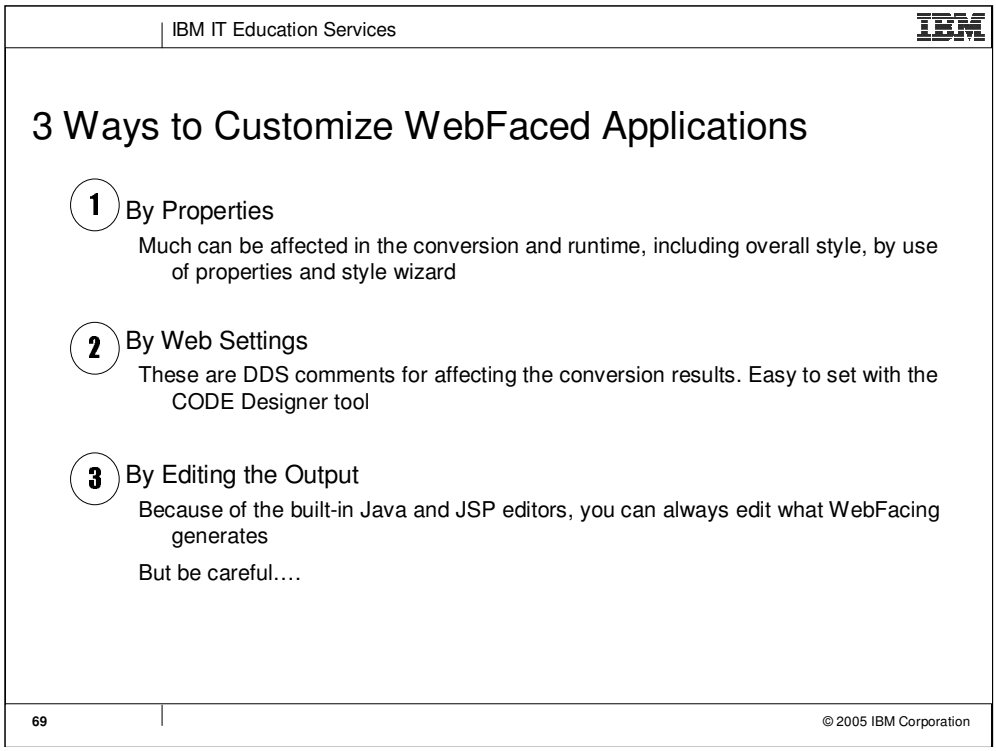
Courtesy: Computer Guidance Corp

WebFacing – Survey tool

- Downloadable from the web
- Install from savefile
- DDS source in libraries gets scanned
- Report lists
  - Keywords supported
  - Keywords not supported

WebFacing – Survey tool

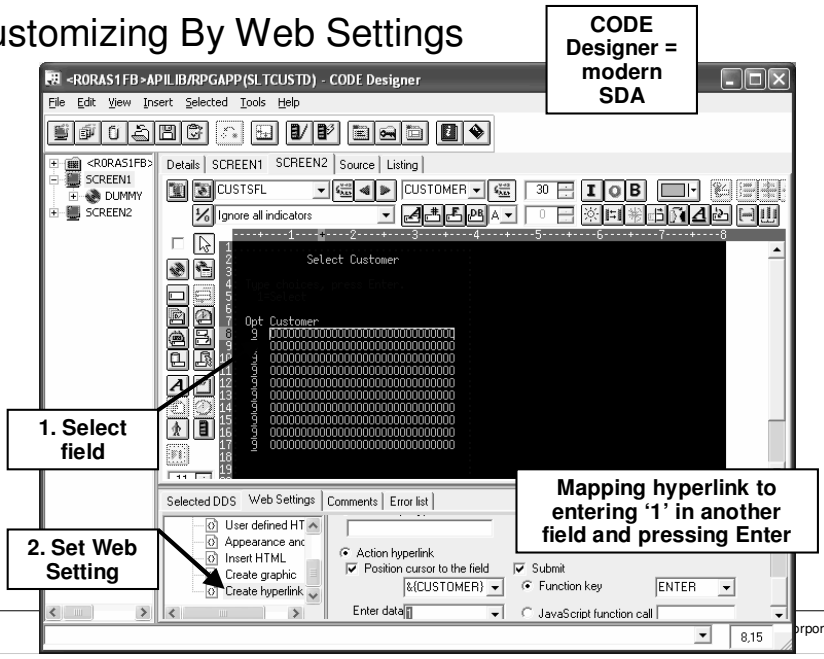




There are 3 ways to customize WebFaced applications.

1. Before conversion, use properties dialog to change conversion, runtime and style properties.
2. Before conversion use the WebSettings feature of CODE designer. WebSettings are stored as comments in the DDS. With WebSettings you may have certain fields that may not be relevant on the Web. You can specify that a field contains an image name, and an <IMG> tag should be created for that field. You can specify that a field is a hyper-link. Clicking on the link at run-time will launch the URL specifed in WebSettings.
3. After conversion, WebFacing copies the Cascading Style Sheet (CSS) to the project. With some knowledge of CSS you can modify it to customize your pages. You can use Page Designer to edit the created JSPs. Note, conversion will overwrite customized JSPs

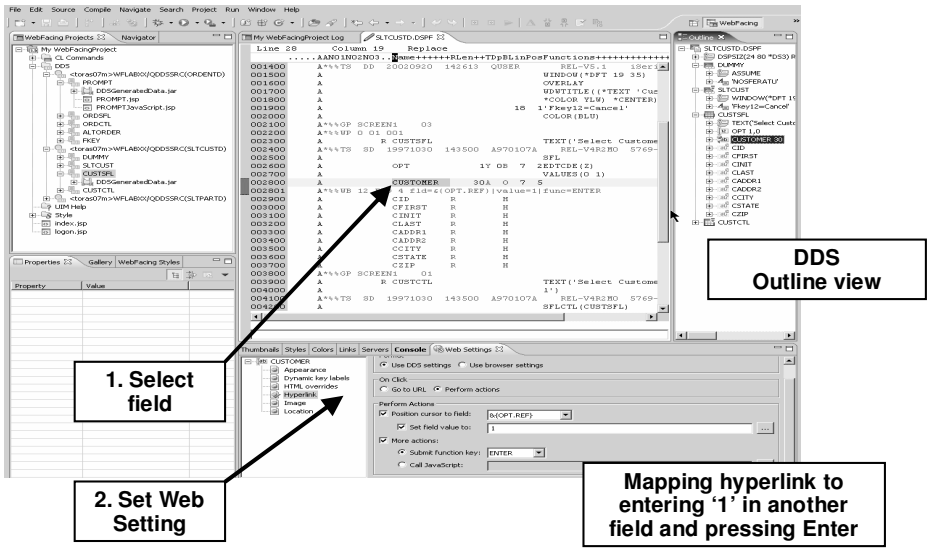
Customizing By Web Settings



After a DDS source member has been loaded into CODE Designer, Web Settings can be accessed by clicking the icons in CODE Designer's DDS Tree. The DDS Tree is located on the left-hand side of the CODE Designer window. Web Settings are also accessible by selecting DDS objects from within CODE Designer's **Details** and **SCREEN** tabs. If Web Settings are available for the selected object, the Web Settings tab will be displayed in the bottom pane of CODE Designer.

Customizing By Web Settings V6.0

In workbench



After a DDS source member has been loaded into CODE Designer, Web Settings can be accessed by clicking the icons in CODE Designer's DDS Tree. The DDS Tree is located on the left-hand side of the CODE Designer window. Web Settings are also accessible by selecting DDS objects from within CODE Designer's **Details** and **SCREEN** tabs. If Web Settings are available for the selected object, the Web Settings tab will be displayed in the bottom pane of CODE Designer.

New Book

ISBN: 1-931182-09-4

www.mcpressonline.com/ibmpress

This book, the first in the IBM Press Guided Tour series, describes how to get started with IBM's new WebFacing tool and how to make progress with WebFacing efforts.

The systematic approach presented here takes readers through WebFacing a sample green screen application using IBM WebSphere Development Studio Client. It also demonstrates how to use the different features in the tool to enhance the application after the initial conversion. Even debugging strategies are discussed.

To maximize the speed and completeness of your learning experience, the author takes a practical, hands-on approach to explaining WebFacing features and how to use them. This approach, gained from involvement in defining the capabilities of the WebFacing tool allows you to benefit from both the step-by-step nature of the book as well as the most comprehensive treatment offered on WebFacing training.

The book's many exercises will teach you a variety of features in the WebFacing tool and the WebSphere Development Studio Client product. The relationship between these products will also be explained as well as the reason for each of the various exercises.

New Redbook

SG24-6801-00

www.ibm.com/redbooks

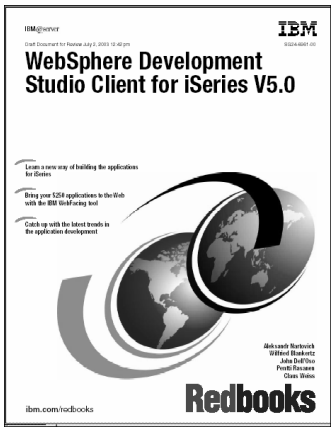
This redbook explains how the application conversion works and how you can customize your Web interface. It explains how to work with JavaServer Pages and cascading style sheets. It also offers helpful performance considerations and troubleshooting tips. Plus it looks at how to deploy WebFaced applications to Apache Tomcat.

This redbook is written for iSeries application developers who want an easy way to extend the life of existing host applications. It also applies to those who want to expand the reach of existing host applications to a wider set of clients.

New Redbook

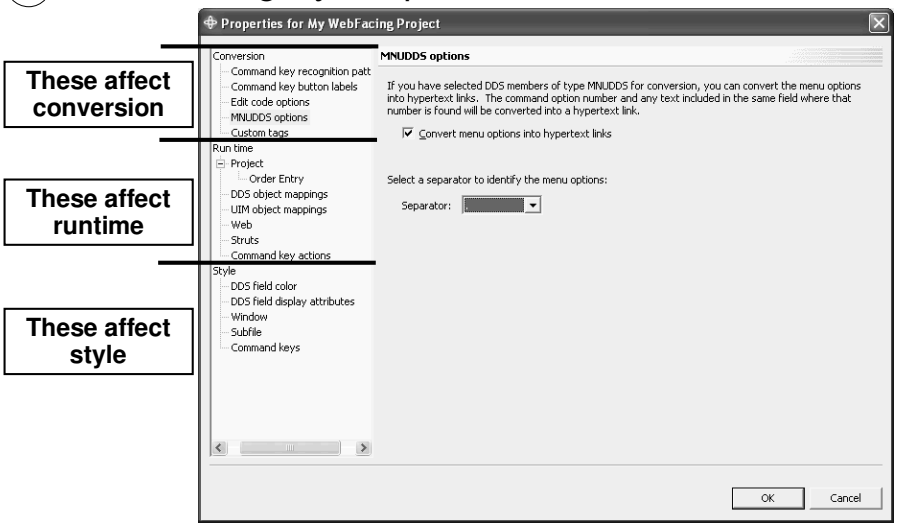
SG24-6961-00

www.ibm.com/redbooks



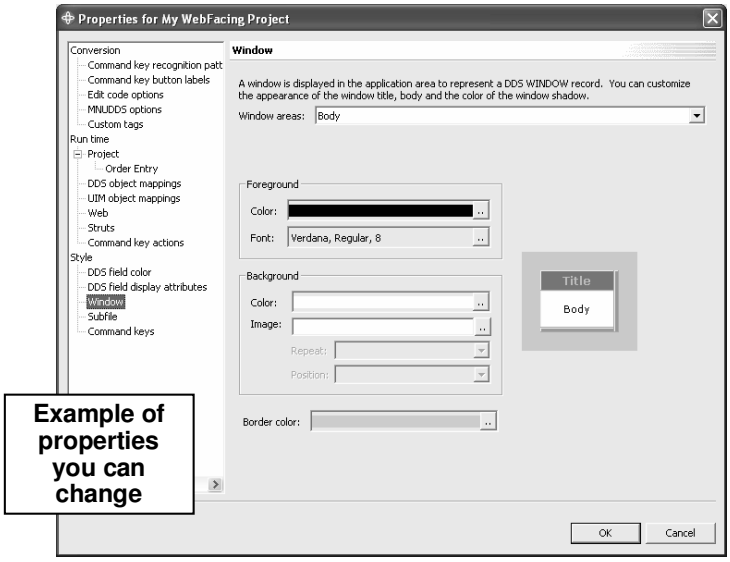
Java and e-business are key to the future of the iSeries server. Web-enabling your 5250 applications allows you to quickly participate in the e-business arena by using existing applications and programming skills.
This Redbook discusses WebSphere Development Studio Client for iSeries V5.0 of which the WebFacing tool is a part. Development Studio Client includes several powerful tools that target the iSeries application developers:
- WebSphere Studio Site Developer Advanced (in WebSphere Development Studio Client Standard Edition for iSeries V5.0) or WebSphere Studio Application Developer (in WebSphere Development Studio Client Advanced Edition for iSeries V5.0) - the new IDE for developing applications. The unique characteristic of this IDE is the ability to add new features in the form of the plugins. Anyone can develop a new plugin and install it into the tool without creating a "plumbing" infrastructure. WSSD and WSAD include the development environment for creating plugins.
- Development Studio Client includes several iSeries specific features, like the IBM WebFacing Tool and the iSeries Web development tools, that are installed as plugins.
- Cooperative Development Environment (CODE) - a workstation-based tool that supports the development of the applications in many different host languages, including RPG and Java.
- VisualAge RPG - If you are already an experienced RPG IV programmer, you can create graphical user interfaces to RPG programs very quickly in VisualAge RPG.
- Integrated iSeries Debugger.

1 Customizing By Properties

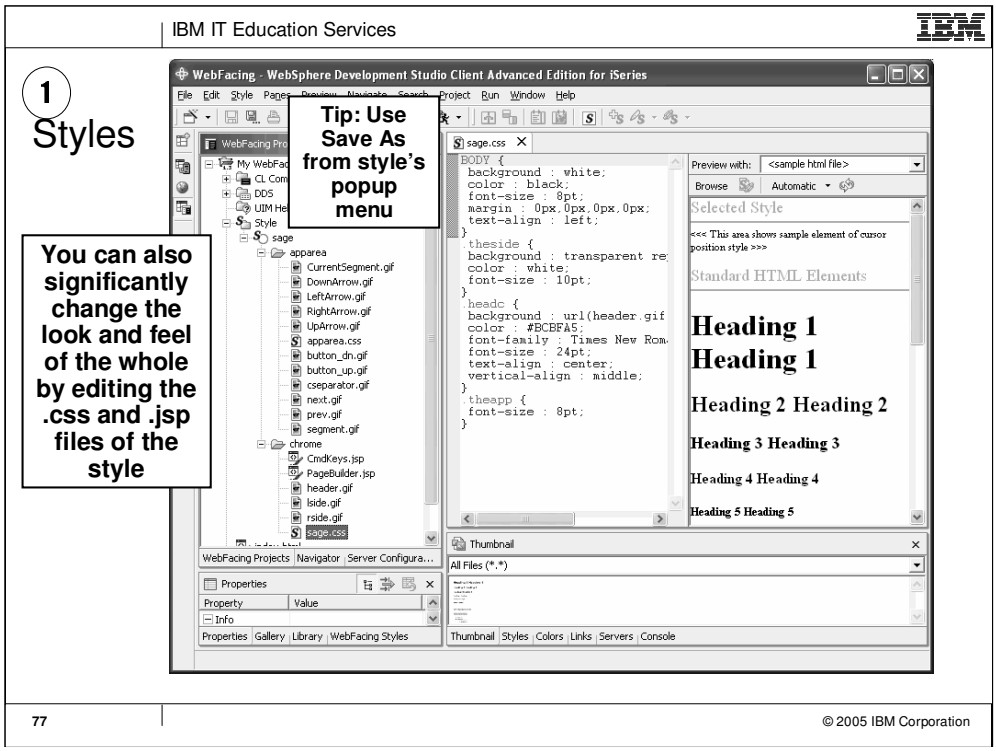


To edit the properties for a WebFacing project, in the WebFacing Projects view, right-click the icon for your Project, CL commands, DDS, UIM Help, or Style folder and select **Properties**. Conversion properties control how selected DSPF and UIM files are being converted for WebFacing use. Values for conversion properties are stored in the file conversion.rules under the config directory of the WebFacing project. Run-time properties determine the behavior of the converted Web application when it is being used by an end user. You can customize the look of the application area and the command keys using the Style properties. If you want to change the look of the layout and frame surrounding these areas, you must use a CSS editor to update the style files stored in the chrome directory.

1



Here you see an example of changing the style property Window. You use the Window screen to indicate how you would like DDS WINDOW records to look when they are converted for Web use. You can customize the look of the title, body, and shadow of the window.

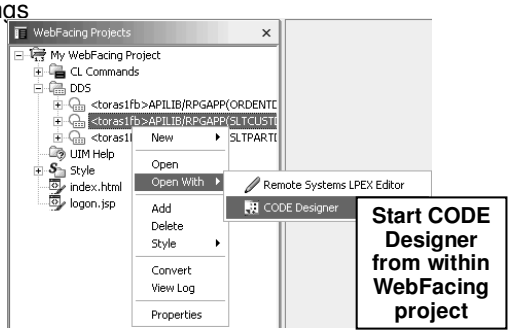


If you want to edit the style that is used for the application area and command key elements, you can use the Style properties pages or you can edit the apparea.css file directly using tools supplied in the IDE. The Style properties pages make it easier to visualize the modifications that are being made and shows you how these changes apply to the DDS elements such as window and subfile records. The changes made through the Style properties pages are then applied to the corresponding style class names in the apparea.css file.

If you want to edit the layout and the frame surrounding the application area and command keys, edit the user-defined CSS files in the \chrome directory. To use the IDE's CSS editor, right-click the file that you want to edit and choose **Open with** --> **CSS Designer**. If you want to edit the layout of the frame, edit the file PageBuilder.jsp. To edit the frame style, right-click **Style** --> **Edit Style**. PageBuilder.jsp can then be edited using the Page Designer tool supplied by the IDE. The CSS file in the \chrome directory can be edited using the CSS Designer in the IDE. The Web perspective can be useful when editing CSS files. To open the Web perspective, select **Window** --> **Open Perspective** --> **Other** --> **Web**.

Customizing

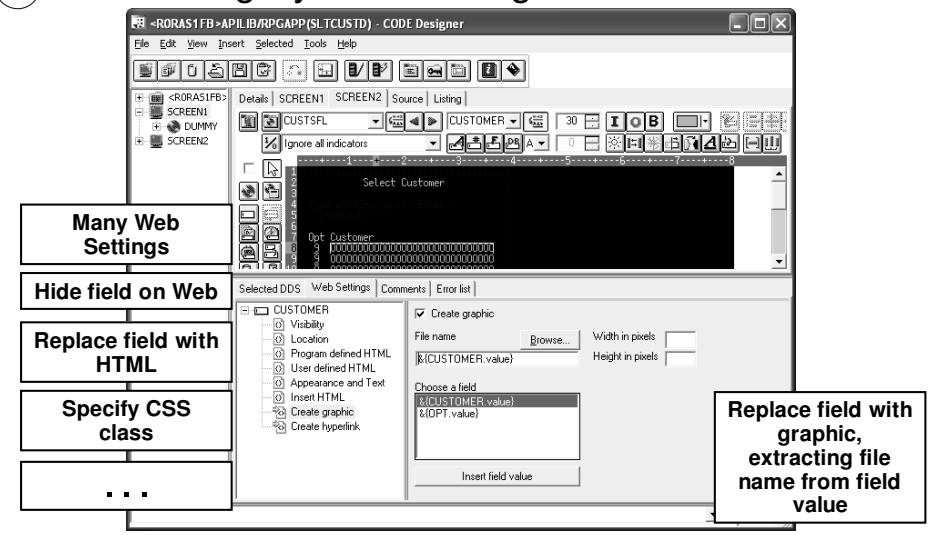
2 By Web Settings



You can use the Web Settings tab in CODE Designer to customize how your programs will look and function when accessed through a Web browser. Programs that use DDS source to describe 5250 display screens can be accessed with a Web browser after the DDS source has been converted with the WebFacing Tool. Use Web Settings when you want to manipulate the Web presentation of individual screens and individual fields within screens. If you want to change the Web presentation of multiple screens or of an entire WebFacing project, use Style properties.

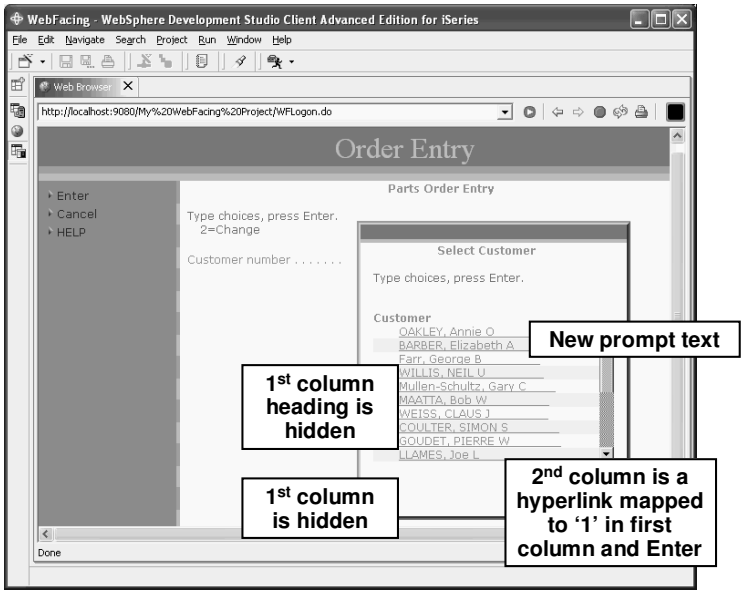
Web Settings enable you to affect how your pages will appear before they are created using the WebFacing wizard. If you would like to modify your pages after conversion, you can use a text editor or a Web design tool such as WebSphere Studio. An advantage to customizing your pages with Web Settings is that the instructions for the customizations are embedded as comments in your DDS source; since Web Settings become part of your source, changes that you make are not lost if you later reconvert a WebFacing project.

2 Customizing By Web Settings



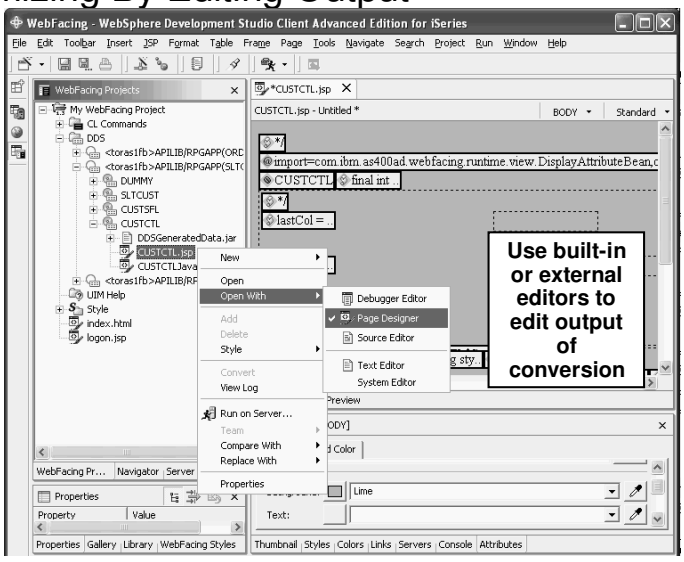
CODE Designer allows you to design DDS screens graphically. In CODE Designer, each DDS object is represented by an icon or push button. For example, there are push buttons so that you can easily create named fields or text constants for your DDS screen. The Web Settings available for each DDS object vary depending on the object that you are working with. The online help lists the Web Settings available for each DDS object. In the online help refer to the section of this document *Web Setting descriptions* for more details on each setting. When you use Web Settings for an object, special comments are added to your DDS source which later get processed by the WebFacing conversion. Web Setting comments begin with the characters *%%WB.

2 After Customizing By Web Settings

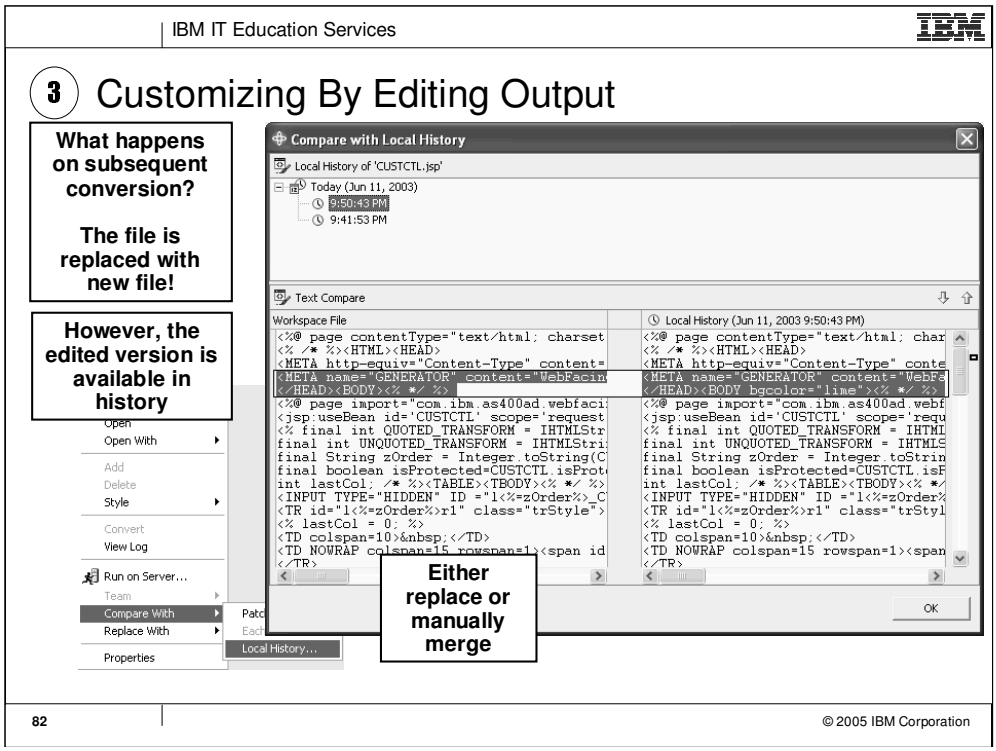


Here you can see the results of customizing your WebFaced application style using Web Settings. 1st column heading is hidden, new prompt text appears and the 2nd column heading is a hyperlink.

3 Customizing By Editing Output



If you want to edit the layout and the frame surrounding the application area and command keys, edit the user-defined CSS files in the \chrome directory. To use the IDE's CSS editor, right-click the file that you want to edit and choose **Open with** --> **CSS Designer**. If you want to edit the layout of the frame, edit the file PageBuilder.jsp. To edit the frame style, right-click **Style** --> **Edit Style**. PageBuilder.jsp can then be edited using the Page Designer tool supplied by the IDE. The CSS file in the \chrome directory can be edited using the CSS Designer in the IDE. The Web perspective can be useful when editing CSS files. To open the Web perspective, select **Window** --> **Open Perspective** --> **Other** --> **Web**.



Changes to the styles made through the property pages or by direct editing apply only to the current project. To save them for use in other projects, right-click **Style** --> **Save as** and give your style a name. Then this named style becomes available for selection the next time you choose a Web style during project creation or the next time you select a style to replace the current project style using right-click **Style** --> **Select Style**.

Summary

e-business Primer

WebSphere Development Studio Client

What is WebFacing?

WebFacing Tools

Samples and Customizing WebFacing

Summary

This presentation reviewed what e-business was all about. Then we looked at WebFacing and what it is. Next we introduced Development Studio Client. The steps to WebFace an application were described in detail. WebFacing customization was described followed by a review of the new WebFacing Tool Version 5.0 features.

Disclaimer

- **Acknowledgment:**

  This presentation is a collaborative effort of the IBM Toronto iSeries Application Development presentation team, including work done by:

  Claus Weiss, Phil Coulthard, George Farr, Don Yantzi, Satish Gungabeesoon

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