

# **WebFOCUS**

Developer Studio  
Application Development  
Getting Started

Version 7 Release 6

DN4500796.0509

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# Preface

This documentation provides an introduction to the WebFOCUS development environment. This manual is intended for application developers and power users.

## How This Manual Is Organized

This manual includes the following chapters:

	<b>Chapter/Appendix</b>	<b>Contents</b>
<b>1</b>	Introducing WebFOCUS and Developer Studio	Describes the architecture of WebFOCUS and Developer Studio, and provides information about WebFOCUS environments and Developer Studio data source descriptions.
<b>2</b>	Exploring Your WebFOCUS Development Environment	Describes the WebFOCUS development environment, including the Explorer layout and toolbars. It also provides descriptions of the graphical development tools that enable you to quickly build and deploy reporting applications.
<b>3</b>	Setting Preferences	Provides information for setting preferences from the Options dialog box in Developer Studio.
<b>4</b>	Tutorial: Creating an OLAP-enabled Report in Developer Studio	Provides step-by-step instructions for creating an OLAP-enabled report in Developer Studio. You will use the Dimensions Tool to create a local hierarchy and the Report Painter to create a report. After you OLAP-enable your report, you will use OLAP analytic tools, such as the selections panel and the OLAP Control Panel (OCP), to query and analyze your data.

	Chapter/Appendix	Contents
<b>5</b>	Tutorial: Creating a Reporting Application Using the HTML Composer	You will use the HTML Composer to create a layout in which you can insert text, an image, a report, a frame for drill-down output, and selection parameters. During this tutorial, you will directly access other tools, such as the Advanced Graph Assistant and the Report Painter, to create procedures and an HTML form.

## Documentation Conventions

The following table lists and describes the conventions that apply in this manual.

Convention	Description
<code>THIS TYPEFACE</code> or <code>this typeface</code>	Denotes syntax that you must enter exactly as shown.
<code>this typeface</code>	Represents a placeholder (or variable), a cross-reference, or an important term.
<code>underscore</code>	Indicates a default setting.
<b>this typeface</b>	Highlights a file name or command. It may also indicate a button, menu item, or dialog box option you can click or select.
Key + Key	Indicates keys that you must press simultaneously.
{ }	Indicates two or three choices; type one of them, not the braces.
[ ]	Indicates a group of optional parameters. None is required, but you may select one of them. Type only the parameter in the brackets, not the brackets.
	Separates mutually exclusive choices in syntax. Type one of them, not the symbol.
...	Indicates that you can enter a parameter multiple times. Type only the parameter, not the ellipsis points (...).

<b>Convention</b>	<b>Description</b>
.	Indicates that there are (or could be) intervening or additional commands.
.	
.	

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You can also access support services electronically, 24 hours a day, with InfoResponse Online. InfoResponse Online is accessible through our World Wide Web site, <http://www.informationbuilders.com>. It connects you to the tracking system and known-problem database at the Information Builders support center. Registered users can open, update, and view the status of cases in the tracking system and read descriptions of reported software issues. New users can register immediately for this service. The technical support section of [www.informationbuilders.com](http://www.informationbuilders.com) also provides usage techniques, diagnostic tips, and answers to frequently asked questions.

Call Information Builders Customer Support Service (CSS) at (800) 736-6130 or (212) 736-6130. Customer Support Consultants are available Monday through Friday between 8:00 a.m. and 8:00 p.m. EST to address all your WebFOCUS Managed Reporting questions. Information Builders consultants can also give you general guidance regarding product capabilities and documentation. Please be ready to provide your six-digit site code number (xxxx.xx) when you call.

To learn about the full range of available support services, ask your Information Builders representative about InfoResponse Online, or call (800) 969-INFO.

## **Information You Should Have**

To help our consultants answer your questions effectively, be prepared to provide the following information when you call:

- Your six-digit site code (xxxx.xx).
- Your WebFOCUS configuration:
  - The front-end you are using, including vendor and release.
  - The communications protocol (for example, TCP/IP or HLLAPI), including vendor and release.
  - The software release.
  - Your server version and release. You can find this information using the Versionoption in the Web Console.
- The stored procedure (preferably with line numbers) or SQL statements being used in server access.
- The Master File and Access File.
- The exact nature of the problem:
  - Are the results or the format incorrect? Are the text or calculations missing or misplaced?
  - The error message and return code, if applicable.
  - Is this related to any other problem?
- Has the procedure or query ever worked in its present form? Has it been changed recently? How often does the problem occur?
- What release of the operating system are you using? Has it, your security system, communications protocol, or front-end software changed?
- Is this problem reproducible? If so, how?
- Have you tried to reproduce your problem in the simplest form possible? For example, if you are having problems joining two data sources, have you tried executing a query containing just the code to access the data source?
- Do you have a trace file?
- How is the problem affecting your business? Is it halting development or production? Do you just have questions about functionality or documentation?

## User Feedback

In an effort to produce effective documentation, the Documentation Services staff welcomes your opinions regarding this manual. Please use the Reader Comments form at the end of this manual to communicate suggestions for improving this publication or to alert us to corrections. You can also use the Documentation Feedback form on our Web site, <http://documentation.informationbuilders.com/feedback.asp>.

Thank you, in advance, for your comments.

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# 1

# Introducing WebFOCUS and Developer Studio

WebFOCUS is a complete Web-ready data access and reporting system that connects users to data. WebFOCUS accesses and processes information located in any format on any platform and presents that information to users through a Web browser in formats such as PDF, Excel, or PostScript.

WebFOCUS Developer Studio is a Windows-based development environment for creating WebFOCUS applications. Developer Studio provides intuitive GUI tools that free developers from the hassles of coding, thereby allowing them to concentrate on interface design, business logic, and data manipulation. Using Developer Studio, developers can build powerful Web page interfaces that allow users to create and view reports.

Data access, network communications, and server operations are provided through WebFOCUS technology. WebFOCUS technology accesses data without concern for the complexities and incompatibilities of different operating systems, data sources, file systems, file formats, and networks. You can access both local and remote data on over 35 platforms from more than 65 data source formats, including FOCUS, Microsoft SQL Server, Sybase, Oracle, Informix, Ingres, and DB2.

## Topics:

- ❑ Additional WebFOCUS Products
- ❑ WebFOCUS Architecture
- ❑ Developer Studio Architecture
- ❑ Developer Studio Directory Structure
- ❑ Developer Studio Explorer Layout
- ❑ Project-based and Remote Development Environments
- ❑ Setting Up a WebFOCUS Environment
- ❑ Custom Logon Template Support
- ❑ Enhanced Support for Netegrity SiteMinder
- ❑ Support for RSA Clear Trust
- ❑ Logging Off Areas in WebFOCUS Environments
- ❑ Developer Studio Data Access and Descriptions

## Additional WebFOCUS Products

- ❑ WebFOCUS Maintain, accessible within Developer Studio, allows you to create projects which update data as well as report on it.
- ❑ ReportCaster, an independent application, enables you to schedule and distribute WebFOCUS reports, the content of URLs, and files.

## WebFOCUS Architecture

### In this section:

- WebFOCUS and Your Network
- WebFOCUS Components
- WebFOCUS Processing
- WebFOCUS Configuration

This topic briefly explains the main WebFOCUS components and implementations. For a complete description of WebFOCUS, see the WebFOCUS documentation.

## WebFOCUS and Your Network

WebFOCUS unobtrusively integrates into your existing network by connecting your Web server to your data. End users access WebFOCUS applications through a Web browser, so they need only the following elements:

- ❑ **Web browser.** To access WebFOCUS applications, users simply need a browser and a TCP/IP connection to a Web server.
- ❑ **Web server.** Web servers handle requests by returning files to a browser or by executing processes that provide additional functionality. You can provide WebFOCUS functionality by connecting to the Web server using either the Java servlets, CGI, or ISAPI.
- ❑ **Data.** WebFOCUS can access data from almost anywhere. Once data access has been configured and your data is described, reporting on it is simple.

## WebFOCUS Components

There are two main WebFOCUS components.

- ❑ **WebFOCUS Client.** The WebFOCUS Client resides on the Web server and connects WebFOCUS to the Web through either the Java servlets, CGI, or ISAPI. When a user makes a request from Developer Studio or a browser, the WebFOCUS Client receives and processes the request by passing it to the WebFOCUS Reporting Server.

**Note:** When you perform a full Developer Studio installation for stand-alone development, you do not have to install the WebFOCUS Client separately because it is packaged with the WebFOCUS Reporting Server.

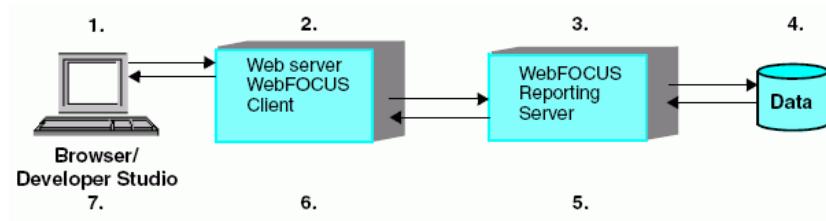
A stand-alone development environment is typically one in which all software components (the Web server, WebFOCUS Client, and WebFOCUS Reporting Server) are installed on the same local machine. This configuration gives you access to all your application files and data from a single machine. You do not need a physical network connection to access any other machine in order to accomplish your development tasks.

- ❑ **WebFOCUS Reporting Server.** The WebFOCUS Reporting Server resides on machines that can access your data. The WebFOCUS Reporting Server provides data access, number crunching, and report generation functionality.

## WebFOCUS Processing

The following steps accompany the figure and describe how WebFOCUS processes requests:

1. A user requests a report and passes parameters by calling a WebFOCUS Servlet, CGI, or ISAPI through links and forms on a Web page or through Developer Studio.
2. The request and parameters come to the WebFOCUS Client on the Web server, which processes the parameters and creates a request for the WebFOCUS Reporting Server.
3. The WebFOCUS Reporting Server receives the request, processes it, and accesses any necessary data.
4. Data is retrieved from data sources to process the request.
5. The WebFOCUS Reporting Server processes the user's request using the retrieved data.
6. The response is returned to the WebFOCUS Client on the Web server.
7. The response is returned to the user.



## WebFOCUS Configuration

WebFOCUS employs a distributed architecture, so the WebFOCUS Client, WebFOCUS Reporting Server, and your data can be located on any platform, anywhere in your network. You can easily connect an Apache Web server running on UNIX to SQL Server data on Windows or DB2 data on z/OS. There can be any number of WebFOCUS Reporting Servers connected to the WebFOCUS Client. WebFOCUS can report on all of them. The requirements are the following:

- ❑ The WebFOCUS Client must reside on a machine with a Web server.
- ❑ An instance of the WebFOCUS Reporting Server must be installed on machines with your data or machines that have access to your data.

For more information on WebFOCUS configuration options, see the WebFOCUS and ReportCaster installation manuals and the server configuration manuals.

## Developer Studio Architecture

### In this section:

Developer Studio Processing

Developer Studio includes:

- ❑ **Developer Studio.** Graphical development and code generation tools. Depending on your license, it may also include the Maintain Development Environment.
- ❑ **WebFOCUS Reporting Server.** Basic WebFOCUS Reporting Server for local processing, stand-alone development, and access to certain features such as deployment, source control, and Maintain. WebFOCUS Client Servlet, CGI, and ISAPI components are installed as part of the WebFOCUS Reporting Server to allow processing through a local Web server, which is required for a stand-alone development environment.

## Developer Studio Processing

Developer Studio processes requests the same way that WebFOCUS does. To access a remote WebFOCUS Reporting Server, Developer Studio calls a Servlet, CGI, or ISAPI on a remote Web server.

The same processing occurs when using the local WebFOCUS Reporting Server installed with Developer Studio. Developer Studio calls the local WebFOCUS Reporting Server through a local Web server using the CGI, ISAPI, or servlet. Therefore, to run reports locally, a Web server is required on your machine.

## Developer Studio Directory Structure

The Developer Studio directory structure is created under `drive:\optional_drive_folder\ibi`.

### `\apps`

Contains directories and data. By default, this is the Application Root directory (APPROOT directory) in which WebFOCUS looks for project files. Sample files are provided in the `\ibinccen` and `\ibisamp` directories.

The Application Root directory is created during the installation of Developer Studio and the WebFOCUS Reporting Server. It is defined by the APPROOT attribute located in the `edaserve.cfg` and `cgvars.wfs` files. For Project-based development, the above Application Root directories must point to the same drive. For more information about the Application Root directory, see [WebFOCUS Environments in Developer Studio](#) on page 22.

### `\DevStudio76`

Contains the graphical front-end components for creating Developer Studio projects.

### `\DevStudio76\srv76\home`

Contains the local WebFOCUS Reporting Server files.

### `\DevStudio76\srv76\wfs`

Contains the local WebFOCUS Reporting Server configuration files. WebFOCUS Client CGI and ISAPI files are installed in this directory, and some files can affect the Developer Studio front-end.

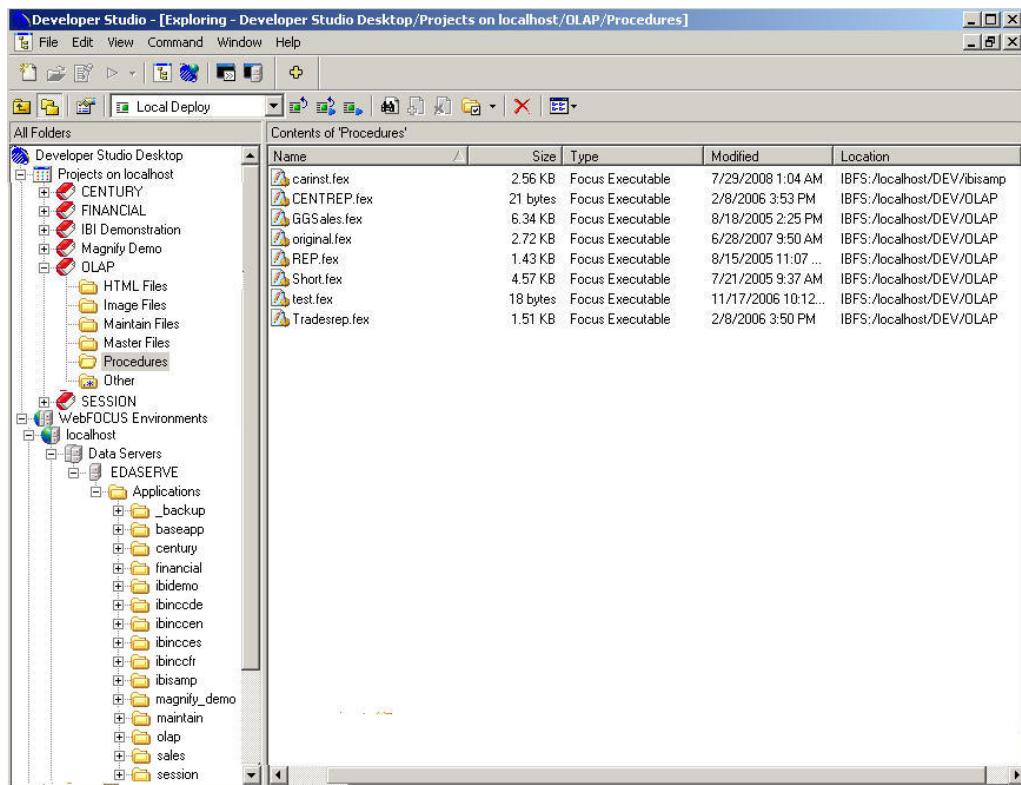
## Developer Studio Explorer Layout

### In this section:

[WebFOCUS Environments in Developer Studio](#)

[Using Demonstration Applications in Developer Studio](#)

To start Developer Studio, select *WebFOCUS Developer Studio* from the *WebFOCUS Developer Studio* program group. The Developer Studio Explorer opens. In this example, the nodes on the left are expanded to illustrate more folders in the working environment:



The Developer Studio Explorer is based on the familiar Microsoft Windows Explorer tree structure and provides access to development tools to quickly build and deploy Web-based reporting applications. In addition, you can use the Maintain features to allow updating of your data.

If the main Explorer window has been closed, you can reopen it by clicking



(New Explorer) on the main toolbar.

When the Developer Studio Explorer opens, note the following installation-based variations:

- ❑ The WebFOCUS Reporting Server installed with Developer Studio is started (with security OFF) along with Developer Studio. A command window opens in the background. The server stops automatically when you exit Developer Studio. You can change this behavior in the General tab of the Windows Options dialog box. For details, see [Setting Preferences](#) on page 129.

When you start Developer Studio, it attempts to start the Internet Information Services (IIS) Web server by default if you have performed a full installation for stand-alone development.

If you do not want the IIS Web server to start automatically when you launch Developer Studio, you can uncheck the *Start local Web server* option in the Windows Options dialog box. Even if this option is not unchecked, you can use other Web servers (such as Apache, WebSphere, and so on) for stand-alone development.

If you are using a non-IIS Web server, please ensure that you have started and configured it according to instructions in the *WebFOCUS Developer Studio Installation and Configuration* manual. If you have multiple Web servers set up on the same machine, please ensure that they use different ports or that only the required server is running.

- ❑ If the WebFOCUS Reporting Server is already running with security ON or OFF, Developer Studio will use that instance. In this case it will not stop the server automatically when you exit the product.
- ❑ If your APPROOT directory (*drive:\jbi\apps* by default) contains Developer Studio applications from previous releases (earlier than Version 5), the first time Developer Studio opens, you are prompted to migrate them.

The Developer Studio Explorer displays two top-level folders by default: Projects on localhost and WebFOCUS Environments.

An optional top-level Windows Desktop folder can be displayed to provide access to local and network drives. From the *Explorer's Window* menu in the main toolbar, select *Options*, and then *Show Desktop on explorer tree* in the Other Settings section of the dialog box.

- ❑ **Projects on localhost.** The Projects area helps you organize, develop, maintain, and deploy WebFOCUS applications. Each project appears as a suitcase folder with subdirectories (virtual folders) used to organize project resources. For example, HTML files are in the HTML Files folder, and Master Files are in the Master Files folder. The Maintain Files folder contains Maintain procedures and launches the WebFOCUS Maintain Development Environment (MDE), where you can add updating functions to your reporting applications. A sample project named SESSION is created when Developer Studio is installed. Additionally, IBI Demonstration and Magnify Demo sample applications are available. For more information about sample applications, see [Using Demonstration Applications in Developer Studio](#) on page 25.

You can create a new project by right-clicking the Projects folder and selecting *New Project*. For each of the subdirectories, you can create a new resource by right-clicking the folder and choosing *New*. For more information, press the *F1* key to access the help system.

By default, the Projects area shows projects on the localhost. However, you can manage projects on remote WebFOCUS Reporting Servers if you define WebFOCUS environments as explained.

The project files are stored in a subdirectory located under the Application Root directory (APPROOT). A directory containing project files is distinguished from other directories under APPROOT by the existence of a .gfa (graphical FOCUS application) file. When you create a project, a .gfa file and a directory are created to store the project's files. Files are grouped into virtual folders (HTML Files, Procedures, and others). These virtual folders only appear in the Developer Studio Explorer and only directories that contain a .gfa file appear under the Projects folder. Virtual folders are created by the Developer Studio interface to organize files of the same type.

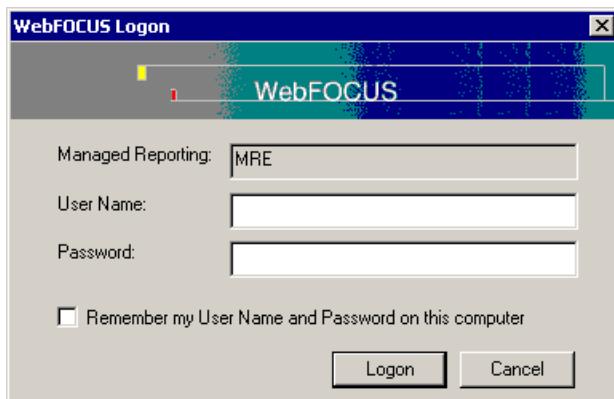
**Note:** The case of file names entered by a developer is preserved and Developer Studio does not enforce any case sensitivity rule upon any files received/sent from/to a Reporting Server or Web Server. Developer Studio projects (.gfa) are always case insensitive, but its cross-platform functionality relies on information stored in lowercase and it is the developer's responsibility to be consistent with the way a particular Reporting Server handles files on UNIX platforms. For example, when performing remote Project development against UNIX environments, developers must ensure that file names are created in lowercase and that the appropriate lowercase is also used when referencing files using the INCLUDE command. While working in the Data Servers area, by default, the Reporting Server will enforce lowercase of files and directories that are created in this area.

- **WebFOCUS Environments.** The WebFOCUS Environments area lets you manage resources and applications on remote servers as well as on your local machine if you have performed a full installation of Developer Studio. You can create and edit application files on all remote servers from one easily accessible interface. You can create and administer reports for Managed Reporting from a Windows application rather than a Web browser and access graphical tools (such as the Report Painter) that are only available in Developer Studio.

Managed Reporting development and administration through Developer Studio is only available to those designated as Administrators and Developers within Managed Reporting.

After adding WebFOCUS environments, you can browse and manage their contents. For details about the three sub-areas located under WebFOCUS Environments, see [WebFOCUS Environments in Developer Studio](#) on page 22.

When you use either the Projects folder or the WebFOCUS Environments folder to access a secure server or a secure environment, a logon box displays, prompting you for an ID and password. Note that a dialog box may appear for connection to the Web/Application server, Reporting server, Managed Reporting, or WebFOCUS Client. In the example image below, a dialog box prompts you for logon to the Managed Reporting environment.



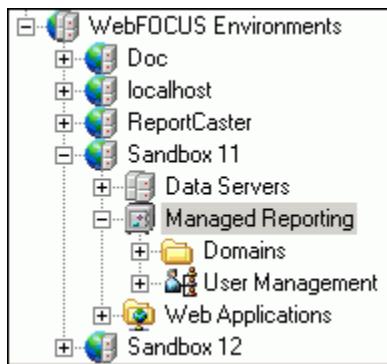
**Note:** If the local or remote configuration of the Web/Application Server is not correct and Developer Studio fails to connect to the WebFOCUS Client, a logon dialog box will be presented. This occurs even if there is no security setup for the WebFOCUS Client. Select *Cancel* from the logon dialog box and correct the WebFOCUS Client configuration before attempting to connect again.

There is a check box option on the logon dialog box for remembering the ID or password. By default, it is not checked. If you check this box, your credentials will be stored and encrypted in the wfscom.xml file, the local configuration file that stores information processed by the Developer Studio communication layer. For details about the wfscom.xml file, see [Working With Environment Properties](#) on page 43. If you decide to change the stored credentials later, you can do so from the WebFOCUS Environment Properties dialog box. For details, see [Managed Reporting/ReportCaster Properties](#) on page 50.

**Note:** In Developer Studio 5.3 and earlier, this file was named wfscom.wfs. When you launch Developer Studio 7.1, an existing wfscom.wfs file is renamed to wfscom.xml.

## **WebFOCUS Environments in Developer Studio**

The WebFOCUS Environments area contains sub-areas for the Data Servers, Managed Reporting, and Web Applications environments.



- ❑ **Data Servers.** Displays each WebFOCUS Reporting Server that the WebFOCUS Client can access. The Data Servers feature enables development against multiple WebFOCUS Reporting Servers that are configured on any supported platform. The Applications folder beneath each WebFOCUS Reporting Server displays the directories based on the Application Root directory (APPROOT directory) for that WebFOCUS Reporting Server (on Windows, drive:\ibi\apps by default).

The WebFOCUS Reporting Server uses the APPROOT setting to locate files used in development. Any directory located under APPROOT appears under the Data Servers Applications folder.

The Data Servers folder is a physical view; all files in this location are displayed. The WebFOCUS Reporting Server's Application Root directory is used to store server-based files such as procedures and metadata. You can only edit and run files processed or used by the Reporting Server (such as .fex, .mas, .acx, .gif, .htm, .html, and .sty files). For more information, see the *WebFOCUS Managed Reporting Developer's Manual*.

**Note:**

- ❑ The Application Root directory (APPROOT directory) is where WebFOCUS Developer Studio looks for application files. Each application has a directory under APPROOT containing its files. In addition, projects can be explicitly designed to use files in another application's directory, and all projects use files in the baseapp directory. You can change the APPROOT directory in the cgivars.wfs and edaserve.cfg files, but if you change one file, be sure to change the other so that they both point to the same physical location. This is a requirement for creating projects. You must ensure that configuration is set this way when you specify a remote server as the development server.
- ❑ When you use Developer Studio with a local WebFOCUS Reporting Server, the application names and files under the Data Servers folder and the Web Applications folder will be the same, since the APPROOT setting of the WebFOCUS Reporting Server points to the same place as the APPROOT setting of the WebFOCUS Client. The WebFOCUS Client resides on the Web server and uses CGI, ISAPI, or servlet, based on its configuration. The same applies for remote environments that have the WebFOCUS Client installed on the same machine as the WebFOCUS Reporting Server and the APPROOT setting of the WebFOCUS Client and the WebFOCUS Reporting Server points to the same location. If the APPROOT settings point to different locations or if WebFOCUS and the WebFOCUS Reporting Server are installed on different platforms, the Applications folder under Data Servers and the Applications folder under Web Applications will show files and directories based on their configurations.

The **cgivars.wfs** file contains the APPROOT variable for the WebFOCUS Application Root directories. Typically these files include HTML pages, graphic images, Cascading Style Sheets, and JavaScript files.

The cgivars.wfs file is located in:

Type of Installation	Location of cgivars.wfs
Developer Studio with localhost (full installation)	<i>install_drive:\ibi\DevStudio76\client\wfc\etc</i>
WebFOCUS	<i>install_drive:\ibi\WebFOCUS76\client\wfc\etc</i>

The **edaserve.cfg** file contains the APPROOT variable for the WebFOCUS Reporting Server's Application Root directory. Typically these files include procedures, WebFOCUS StyleSheets, and customized HTML pages that require processing on the Reporting Server.

The edaserve.cfg file is located in:

Type of Installation	Location of edaserve.cfg
Developer Studio with localhost (full installation)	install_drive:\ibi\DevStudio76\srv76\wfs\bin
WebFOCUS	install_drive:\ibi\srv76\wfs\bin

- ❑ **Managed Reporting.** Allows you to use Developer Studio to administer and develop against a Managed Reporting environment.

**Note:** The Managed Reporting area is not visible if WebFOCUS Managed Reporting is not installed, or if you are using CGI or ISAPI as the communication method. Beginning in Version 7 Release 1, CGI and ISAPI are not supported for development with Managed Reporting. For Managed Reporting, CGI and ISAPI are only supported for running Self-Service applications. For more details see, Technical Memo 4575: WebFOCUS Managed Reporting and CGI/ISAPI Requests.

- ❑ **Domains** provides an environment that developers can use to build and test procedures and Web pages that launch those procedures. There is no limit to the number of domains you can create. A domain is organized into a series of folders and components. The folders and components contained in a domain are the Standard Reports folder, the Reporting Objects folder, the Other Files folder, the Profile component, and the Help component. For details, see the *WebFOCUS Managed Reporting Administrator's Manual*.
- ❑ **User Management** enables Managed Reporting Administrators to access each user's reports. The User Management feature is available only to Managed Reporting Administrators. Managed Reporting Administrators can open, edit, save, and delete Managed Reporting users' reports. For details, see the *WebFOCUS Managed Reporting Administrator's Manual*.
- ❑ **Web Applications.** Displays the contents of the WebFOCUS Client's APPROOT directory (on Windows, drive:\ibi\apps by default). The WebFOCUS Application Root directory is used to store files processed by the WebFOCUS Client for self-service applications such as HTML launch pages, Cascading Style Sheets (.css files), and images. The Web Applications folder allows you to open files with the Text Editor, or the associated tool you used to create them. This is a physical view (all files in this location are visible).

## Using Demonstration Applications in Developer Studio

### **Reference:**

IBI Demonstration Applications

Magnify Demo Sample Application

The IBI Demonstration Project and the Magnify Demo Project are available as demonstration applications in Developer Studio.

### **Reference: IBI Demonstration Applications**

The IBI Demonstration project represents the types of Business Intelligence reporting applications that can be created with WebFOCUS. The demonstration is available and is installed by Developer Studio in a sample application called ibidemo (under install\_dir:\ibi\apps\).

While using the Projects area of Developer Studio, a new project is created during the installation process called IBI Demonstration.

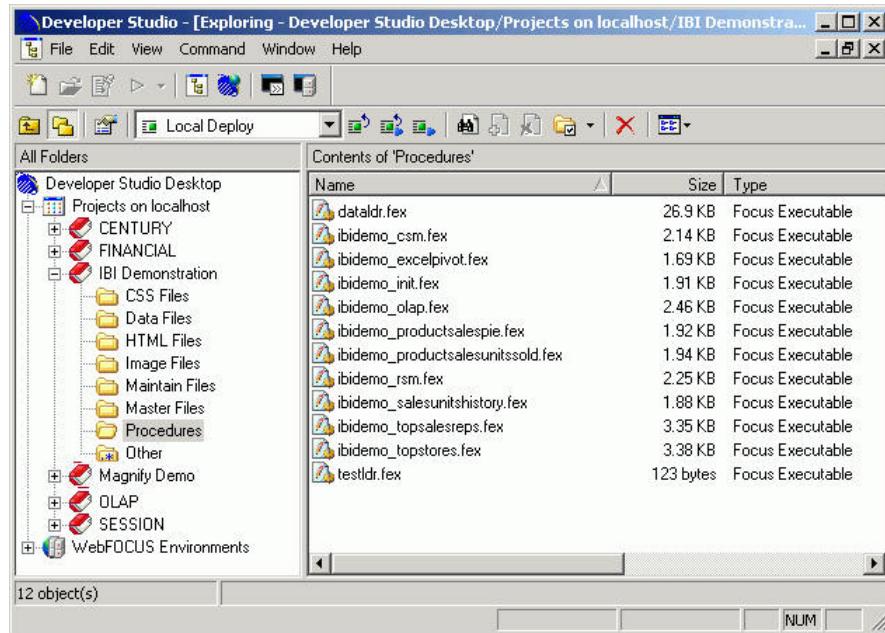
To run the application, open the HTML Files folder and run the file index.htm.

In the project's virtual folders, HTML Files and Procedures, you will find all the procedures used by this demo application.

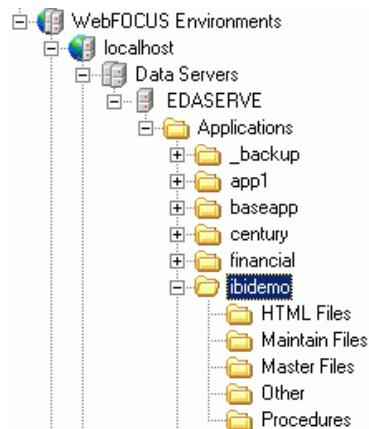
This application can also be accessed from the WebFOCUS home page ([http://<machine name or ip address>/ibi\\_apps/](http://<machine name or ip address>/ibi_apps/)) from a link called, *Run Century Electronics WebFOCUS 7 Demo Application* (<http://<machine name or ip address>/approot/ibidemo/index.htm>).

## Developer Studio Explorer Layout

The following image is an example of the IBI Demonstration Project folder in Developer Studio.



The following image is an example of the ibidemo folder in the WebFOCUS Environments area of Developer Studio.



**Reference:** Magnify Demo Sample Application

Magnify Demo demonstrates Magnify Lucene, an enterprise search solution. When Developer Studio is installed, a project folder called Magnify Demo is created. The application folder contains all the reports and data used by Magnify, as well as a form to feed new items to Magnify Lucene.

The Magnify Demo uses an enhanced version of Century Sales that is based on Century Sales found in the IBI Demonstration project. Century Sales in ibidemo has not changed. Descriptions were added for Stores, Plants, and Products. In addition, each order was assigned to customers. Customers, Employees, and Stores have also been updated with geographical information.

The Magnify Lucene index can be found in ibi\DevStudio76\lucene\_index and has been configured for environments for Port 8080. However, if you are using Port 80, a different set of index files should be used. In order to use Magnify with a Port 80 configuration, remove the contents of lucene\_index. Then, locate the Century Electronics Magnify Index for Application Servers zip file on Port 80.zip in ibi\apps\Magnify\_Demo and unzip it into ibi\DevStudio76\lucene\_index. Note that Magnify requires an Application Server, which will need to be restarted.

The sample Magnify search solution can be accessed from the stand-alone Developer Studio installation using:

`http://<hostname>:<port>/ibi_apps/search`

where:

*hostname*

Is the name of the machine where the Application server and Developer Studio resides.

*port*

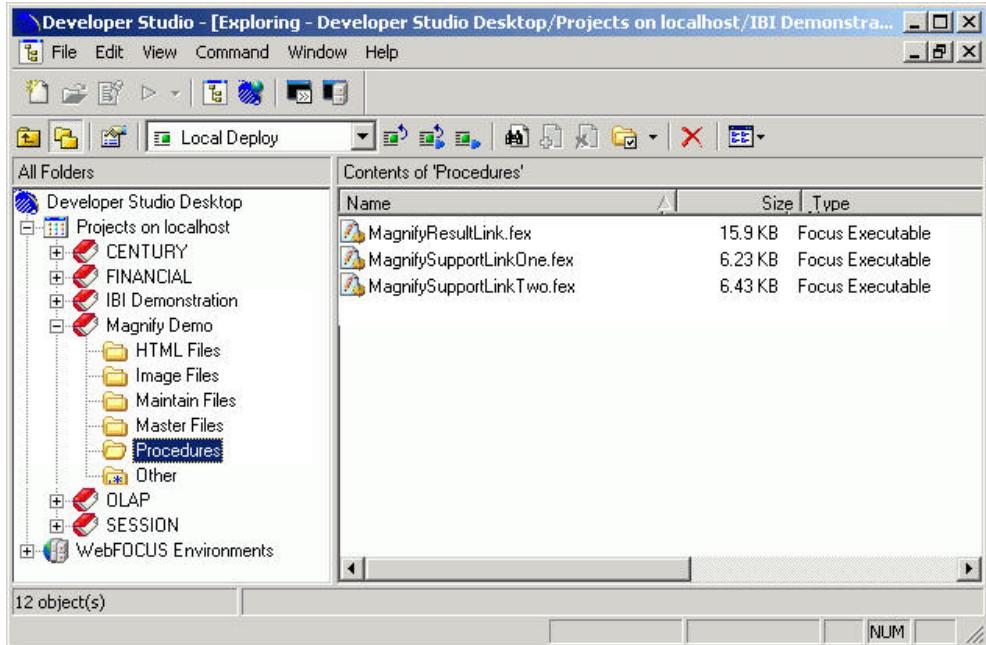
Is the port number used by the Application server.

In addition, the sample Magnify Lucene index can be migrated to WebFOCUS Environments by moving the contents of ibi\DevStudio76\lucene\_index to ibi\WebFOCUS76\lucene\_index.

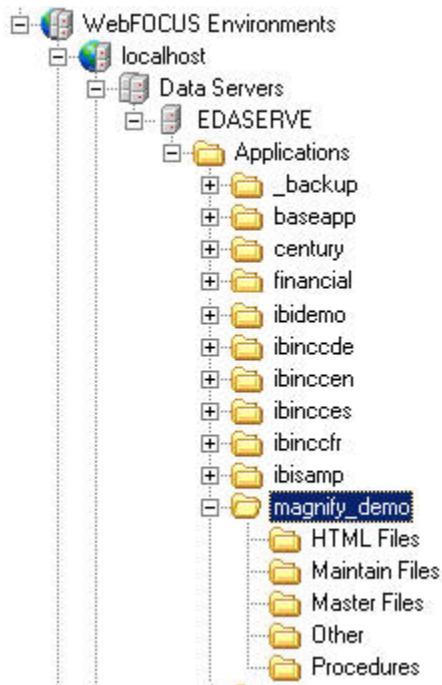
For more information about WebFOCUS Magnify, see the *WebFOCUS Magnify, Installation, Configuration and User's Guide*.

## Developer Studio Explorer Layout

The following image is an example of the Magnify Demo Project folder in Developer Studio.



The following image is an example of the magnify\_demo folder in the WebFOCUS Environments area of Developer Studio.



## Project-based and Remote Development Environments

### In this section:

[Project-based Development](#)

[Remote Development](#)

Developer Studio provides a local (stand-alone) development environment and a remote development environment. From the Explorer's Projects folder, you can develop projects locally on your machine or against a remote WebFOCUS environment. From the Explorer's WebFOCUS Environments folder, you develop directly against environments that are configured remotely.

In Developer Studio, you start building a reporting application as a *project* consisting of different kinds of files. You can create the project as a stand-alone application in the development environment or as a Web-based self-service application that you can deploy.

With a full Developer Studio installation, you can:

- ❑ Locally develop and deploy self-service applications from the Projects area.

Stand-alone Project-based development and deployment requires installation of a WebFOCUS Reporting Server on the same machine as Developer Studio. A WebFOCUS Client is also required for Project-based development. The files that you create for a local project reside in a subdirectory under APPROOT (defined in the configuration files edaserve.cfg and cgivars.wfs). The Application Root directories (APPROOT directories) attribute must point to the same directory for Project-based development since files will be created with the WebFOCUS Client, which resides on the Web server.
- ❑ Connect to one or more remote servers and modify existing self-service applications on those servers. For example, you can add a reporting procedure to an existing application.
- ❑ Configure access to one or more WebFOCUS environments so that you can manage resources on the WebFOCUS Client and Reporting Server, and in the Managed Reporting Repository (if installed). From the environment tree you can create and edit procedures, metadata, HTML files, and more.

If you do not have a WebFOCUS Reporting Server and the WebFOCUS Client on your development machine, for example if you have installed the Managed Reporting Developer edition of Developer Studio, your environment allows the last two capabilities. For details, see the *Developer Studio Installation and Configuration* manual.

## Project-based Development

### Reference:

Summary of Steps for Project-based Development

Developer Studio supports two environments for Project-based development:

- ❑ In the first environment, Developer Studio, the WebFOCUS Reporting Server, and the WebFOCUS Client are installed on the same machine (a "full" installation). This WebFOCUS environment is referred to as the *localhost*, which describes the name of your local machine. You can modify the name and the actual host name.

**Note:** When configuring a WebFOCUS Environment, provide a full domain for the host name, including top-level domain name, second-level domain, and sub-domains as specified by your organization (for example, hostname.companyname.com). This format is recommended to ensure that requests are properly resolved and redirected. In this environment, the project files that you create reside in a subdirectory under the Application Root directory (APPROOT directory). See the *Developer Studio Installation and Configuration* manual for information about other required components that you must install, such as Java SDK and a servlet engine. All required components are packaged with Developer Studio.

- ❑ In the second environment, you can use a remote WebFOCUS installation for Project-based development. Developer Studio is installed on a local machine (a “thin” installation), and the WebFOCUS components (which include a Reporting Server and the WebFOCUS Client, which resides on the Web server) are installed on remote machines.

Use of a remote environment for Project-based development requires the following:

- ❑ The WebFOCUS Reporting Server must be at a supported release level.
- ❑ The WebFOCUS Reporting Server must be installed on a supported Windows or UNIX platform.
- ❑ The WebFOCUS Reporting Server and the WebFOCUS Client must be properly configured. For example, the APPROOT variable must be set as required on both servers. APPROOT on both servers must point to the same physical location. For more information on APPROOT, see the *Developing Reporting Applications* manual.
- ❑ You must have read and write access to the WebFOCUS Reporting Server and the WebFOCUS Client.

**Reference:** [Summary of Steps for Project-based Development](#)

To create a new project:

- 1. Install Developer Studio.** Use the installation program to install Developer Studio (this includes a WebFOCUS Reporting Server for stand-alone development) on your Windows machine. For details, see the *Developer Studio Installation and Configuration* manual.
- 2. Configure the Web server.** For local stand-alone development, configure aliases and servlet functionality on the local Web server.

For Microsoft IIS or Apache Tomcat, configuration of the Web server and/or Application server is performed automatically for you during installation of Developer Studio. For other Web servers, manual configuration is necessary. For details, see the *Developer Studio Installation and Configuration* manual.

- 3. Configure communications and data access.** Set up access to remote WebFOCUS Reporting Servers and create or copy data source descriptions. You must also set up data adapters to access other data sources such as relational databases. For details, see the *Developer Studio Installation and Configuration* manual.

**4. Create a project in the Projects on localhost folder.** Before you begin Project-based development, you must create a project directory that will contain the associated files. You create this directory with the Project Wizard. The Project Wizard enables you to name the project, designate a directory for it, and optionally add other directory paths from which the project can retrieve information, or paths to other resources. For more information, see *Creating a Reporting Application* in the *Developing Reporting Applications With Graphical Tools* manual.

**5. Create, develop, and test the project's components.** Open the project, create its components (its procedures, data source synonyms, HTML files, and related files) and develop and test them on the WebFOCUS Reporting Server and Web server.

While working in the Projects area and performing local project development, files refresh automatically when you are updating your application files without requiring a manual refresh.

Automatic Refresh also improves performance as files get loaded significantly faster when launching Developer Studio and while performing development.

## Remote Development

### How to:

Perform Project-based Development Against a Remote WebFOCUS Environment

Create a Remote Application in the Data Servers Area

Edit a Remote Application in the Data Servers Area

Create an Application in the Managed Reporting Area

Edit a Managed Reporting Application on the Server

### Reference:

Summary of Steps for Remote Development

Developing in the Data Servers Area

Developing an Application in the Managed Reporting Area

Domains Folder Operations

Explorer Toolbar

WebFOCUS Environments Toolbar

Developer Studio provides the following scenarios for remote development:

- ❑ The Data Servers area enables you to develop applications directly on the WebFOCUS Reporting Server and edit resources in place against remote environments.

- ❑ The Managed Reporting area enables you to access User Administration Services (UAS) and the Managed Reporting Repository. From here, you can develop and manage Managed Reporting applications against a configured WebFOCUS environment.
- ❑ The Web Applications area enables you to manage resources on the Web server and edit the resources in place against remote environments. HTML forms, Cascading Style Sheets (CSS), and other Web components are stored in the Web Applications folder. You can view and modify HTML files with an editor.

**Reference:** [Summary of Steps for Remote Development](#)

To create a new application on a server platform:

- 1. Install Developer Studio.** Use the installation program to install Developer Studio on your Windows machine. For details, see the *Developer Studio Installation and Configuration* manual.
- 2. Add a WebFOCUS environment.** Add an environment from the WebFOCUS Environment Properties dialog box. For details, see [How to Add a WebFOCUS Environment](#) on page 44.
- 3. Create an application folder on the server.** Create the application's folder in one of the two remote development environments (the Data Servers area or the Web Applications area ) or directly against the Managed Reporting Repository.
- 4. Create, develop, and test the application's components.** Open the application, create its components (its procedures, data source synonyms, HTML files, and related files) and develop and test them on the WebFOCUS Reporting Server and WebFOCUS Client.

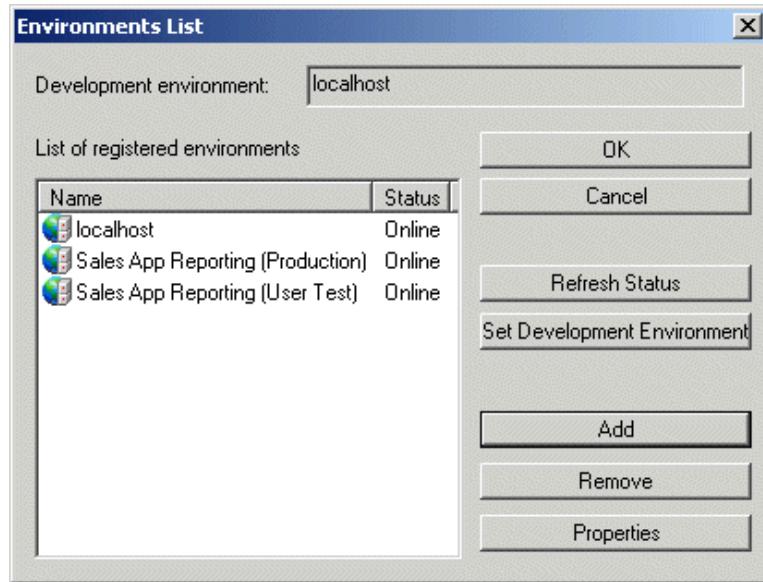
**Procedure:** [How to Perform Project-based Development Against a Remote WebFOCUS Environment](#)

If you have more than one available WebFOCUS environment, you can select which one to use for your Developer Studio projects.

If you want to add a WebFOCUS Environment first, see [How to Add a WebFOCUS Environment](#) on page 44.

1. To select a WebFOCUS environment while the Explorer window is active, select *Show Environments* from the File menu.  
The Environments List dialog box opens.
2. Select the environment you want to set as the development environment and click *Set Development Environment*.

The current development environment appears in the Development environment field.



- Click **OK** to refresh the Explorer tree. The current environment appears in the Projects area as a new node name (for example, Projects on Sales Reporting). The Explorer tree also displays available projects in that environment and allows you to create new ones.

The Status column on the Environments List dialog box displays current information about each WebFOCUS environment. The status types are:

- Online.** Indicates that the environment is available for development and the icon is enabled.
- The attempt to connect to the environment failed and the following messages may appear:**
  - "Failed to access the Web server"
  - "Object not found URL: http(s)://host\_name:port/... "

Indicates that the environment is not available or not configured properly. This occurs if the Web server is not functioning or is unavailable. The environment's icon is marked with a red "x" if it is unavailable.
- Error Attaching to ODIN node node\_name.** Indicates that the default Reporting Server for the environment is not available or functioning. Check to see if the Reporting Server is running. The environment's icon is marked with a red "x" if it is unavailable.

**Reference: Developing in the Data Servers Area**

The Data Servers feature gives you access to file resources on all WebFOCUS Reporting Servers in your environment. Using Data Servers, you can create and manage metadata, stored procedures, HTML files, and WebFOCUS StyleSheets. You can also perform operations on GIF images and other files such as FOCUS data sources. Data Servers has access to all the applications on your configured servers and gives you the ability to create and delete applications.

You can copy and paste files between applications on one server or between servers. Data Servers allows you to move files between servers on different operating systems, which is useful, for example, when upsizing an application from Windows to z/OS. You can also use Data Servers to access certain files that you wish to copy to a Managed Reporting domain, such as a procedure. For more information, see the *WebFOCUS Managed Reporting Developer's Manual*.

Data Servers is accessible from the Explorer in Developer Studio and is always visible. For Managed Reporting development, the Data Servers feature is available to Administrators and to Developers, and access to this area is restricted according to login authorization. With the Managed Reporting Developer edition, this area can be hidden based on user privileges defined by the Managed Reporting administrator. For more information about granting this privilege, see the *WebFOCUS Managed Reporting Administrator's Manual*.

**Procedure: How to Create a Remote Application in the Data Servers Area**

1. Expand a Data Servers area and click the plus (+) sign next to a server name.
2. Right-click the Applications folder and select *New Application*.
3. Type a name in the New Application dialog box and click *OK*.
4. If the APPROOT of the WebFOCUS Client (located in the cgivars.wfs file) and the APPROOT of the Reporting Server (located in the edaserve.cfg) file point to the same place, then the application you created appears below the Applications folder and you can also see it under the Web Applications folder because of the common Application Root directory (APPROOT directory).

You can copy and paste files between applications on this server or between servers.

**Procedure: How to Edit a Remote Application in the Data Servers Area**

1. Expand a Data Servers area and click the plus (+) sign next to a server name.
2. Expand the Applications folder. Open the contents of an application.
3. Choose an application component (for example, a Master File, procedure, or HTML file) and select *Open*, *Edit in Developer Studio Tool*, or other available option. The component opens in the applicable tool.

4. Edit the component, save and close the file.

**Reference:** [Developing an Application in the Managed Reporting Area](#)

When you are developing a Managed Reporting application, you are working with files that are controlled by the WebFOCUS Client and stored in a centralized location called the Managed Reporting Repository. There is no decentralized local development copy of this Repository or of Managed Reporting files. Regardless of whether the developer is using the Java applet independent of Developer Studio or Developer Studio tools, the process entails retrieving a copy of the files, making changes to the files, and saving the files back to the Repository.

All Managed Reporting developers work in a common repository simultaneously and move their application components to a common test environment. The Managed Reporting Domain/Domain Administrator concept enables two or more developers to work on different parts of the application simultaneously, without affecting each other. However, when two or more developers are working on files in a single Domain, the responsibility is on the developers to coordinate their changes. For example, if two developers are working on the same report file at the same time, the last one saving the file overwrites any changes the first developer may have made. To avoid such issues, Source Control is available in the Managed Reporting area.

Managed Reporting Developer for Windows is an offering tailored to meet the specific needs of developers who create and manage domain content. For details, see the *WebFOCUS Managed Reporting Developer's Manual*.

The Managed Reporting Developer edition does not offer administration capabilities.

Managed Reporting Development and Administration is not available in the Power Reporter edition of Developer Studio and the Managed Reporting folder is not visible.

**Procedure:** [How to Create an Application in the Managed Reporting Area](#)

1. Under the Managed Reporting area, expand the Repository by clicking the (+) sign.
2. Right-click the Domains folder and select *New Domain*.

Domains reside on the Web server in the Managed Reporting Repository and are used to build and test Standard Reports, Reporting Objects, and the Web pages that launch those procedures. Each domain that you create contains a group of folders for the different types of objects you supply for Managed Reporting users.

3. Type a name in the New Domain dialog box and click *OK*.

When a new domain is created, the Server property check box is not selected, and the drop-down list of WebFOCUS Reporting Server nodes is disabled. The default server detected for your session is displayed in the list box. All reports and reporting objects in this domain will inherit the server setting shown in this list box.

The Application Path property check box is not selected by default. This means that Managed Reporting requests will be processed by the WebFOCUS Reporting Server's default search path. The server's search path is generally determined by the settings in its profile, but can be overridden by user and group profiles also (depending on platform). For more information about server search path behavior, see the *Server Administration for UNIX, Windows, OpenVMS, i5/OS, and z/OS manual*.

To override the server's default search path behavior for reports run from this domain, check the Application Path property. This enables the associated combo box. Select an application from the drop-down list or type it in manually.

You can enter two applications in the Application Path, but you must enter them manually. You cannot choose them from the list. The Application Path property sends the APP PATH *values* command to the server, where *values* is the path or paths you entered in the text box. A supplied value overrides the server's default search path (it does not append to it). A domain's properties are inherited by the reports under it and can be overridden at the report level. For details, see *Working With Domains and Standard Reports* in the *WebFOCUS Managed Reporting Developer's Manual*.

**4.** Create a data item in one of the following folders:

- Standard Reports.** Contains the Standard Reports you create for end users. Users run these reports, but they cannot change them.
- Reporting Objects.** Contains views of your organization's data that users can access for ad hoc reporting for creating their own reports.
- Other.** Contains image (.gif, .jpg), StyleSheets (.sty), Cascading Style Sheet (.css), JavaScript (.js), HTML, and other files that you use to customize and enhance reports. Users cannot access this folder. The folder also provides temporary storage for reports and procedures that you are migrating from other WebFOCUS platforms.

For details about creating Standard Reports, Reporting Objects, and Other files, see the *WebFOCUS Managed Reporting Developer's Manual*.

## Reference: Domains Folder Operations

The following table describes the available operations for files in the Domains folder.

Folder	Operations
Standard Reports	<p>You can do the following:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Create procedures with the Procedure Viewer, SQL Report Wizard, Text Editor, and so on.</li> <li><input type="checkbox"/> Create alerts with the Alert Wizard.</li> <li><input type="checkbox"/> Create HTML files with the Document Composer or the Text Editor.</li> <li><input type="checkbox"/> Import external files.</li> <li><input type="checkbox"/> Create a new URL.</li> <li><input type="checkbox"/> Create a Standard Report subgroup folder.</li> </ul>
Reporting Objects	<p>You can do the following:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Create a new Reporting Object.</li> <li><input type="checkbox"/> Create a new folder.</li> </ul>
Other	<p>You can do the following:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Import external files.</li> <li><input type="checkbox"/> Launch the Text Editor to create a procedure, HTML file, WebFOCUS StyleSheet, or Cascading Style Sheet.</li> </ul>

## Procedure: How to Edit a Managed Reporting Application on the Server

1. Under the Managed Reporting area, expand the Repository by clicking the (+) sign.
2. Expand the Domains folder that contains the Standard Reports folder you would like to edit.
3. Open the Standard Reports folder.
4. Right-click a file in the Standard Reports folder and select *Open* to access the tool used to create the file, or *Edit in Text Editor*, to edit the file in the Text Editor.

## Reference: Explorer Toolbar

The Explorer Toolbar contains buttons that are primarily used to change the display of items in your Explorer window. Depending upon your location in the Explorer, certain toolbar buttons may be inactive or unavailable. The following table describes the buttons on the Explorer toolbar while working in the Projects area.

Button	Operation
	Moves up one level in the hierarchical file structure.
	Toggles between the double pane Explorer view and the single right pane Explorer view.
	Displays properties of the selected item.
 <span data-bbox="301 723 437 754">Local Deploy</span> <span data-bbox="532 723 564 754">▼</span>	<p>Displays the current deployment scenario. Click the down arrow and select <i>New Deploy Scenario</i> to create a deployment scenario.</p> <p><b>Note:</b> Developer Studio supplies a deployment scenario named Local Deploy, which it uses to prepare files to run on a local server. Do not modify or remove Local Deploy.</p> <p>You can set up a default scenario in the Deployment tab of the project's Properties dialog box. For details, see <i>Partitioning and Deploying Project Files</i> in the <i>Developing Reporting Applications With Graphical Tools</i> manual.</p>
	Provides deployment options for the current scenario that allow you to either deploy, deploy and run, or run the current scenario.
	Displays available items in the project's path. Note that this button is only available when you have selected the Master Files folder, the Procedures folder, the HTML Files folder, or Maintain Files folder.
	Adds the selected item to a project. Note that this button is only available when you have selected the Master Files folder, the Procedures folder, or the HTML Files folder.
	Removes the selected item from a project.

<b>Button</b>	<b>Operation</b>
	<p>This button is visible when you are at a project level.</p> <p>It launches the Edit Filters dialog box, where you can set filters for items you want to display in the selected project. If you add or remove filters, the project filter list will change.</p>
	<p>This button is visible when you are at the virtual folder level.</p> <p>It launches the Edit Filters dialog box, where you can set filters for items you want to display in the selected project. If you add or remove filters, the project filter list will change.</p> <p>Click the down arrow to display a list that shows available files and their properties. You can also filter folders in the list.</p>
	<p>Deletes the selected item from the hard drive.</p>
	<p>Displays items in the view as large icons, small icons, or in a list; also displays the item details.</p>
	<p>Indicates that source control is enabled. See the <i>Developing Reporting Applications With Graphical Tools</i> manual and the <i>WebFOCUS Managed Reporting Developer's Manual</i> for more information.</p>

### Reference: WebFOCUS Environments Toolbar

The WebFOCUS Environments toolbar accesses other WebFOCUS application development and deployment tools. This toolbar becomes active when you click a server or environment name under the WebFOCUS Environments area.

For more information about WebFOCUS products accessed from this toolbar, see the *WebFOCUS Managed Reporting Developer's Manual*.

<b>Button</b>	<b>Operation</b>
	Moves up one level in the hierarchical file structure.
	Toggles between the double pane Explorer view and the single right pane Explorer view.
	Executes the selected report in deferred mode. This option is only available in Managed Reporting.
	Displays the Deferred Report Status Interface in a new browser window. This option is only available in Managed Reporting.
	Accesses the Managed Reporting Administration interface, where you can create roles, users, and groups and associate users with groups and domains. This option is only available in Managed Reporting.
	Launches the Two-Way Email Administration interface.
	Launches the View Builder, where you can create and manage public views (general and custom) and group views. This option is only available in Managed Reporting if you have installed the WebFOCUS Business Intelligence Dashboard. For more information, see the <i>WebFOCUS Managed Reporting Administrator's Manual</i> .
	Accesses the WebFOCUS Business Intelligence Dashboard, an HTML-based thin client that allows you to create a customized user interface for access to WebFOCUS Managed Reporting. Note that you must use the View Builder to customize the Dashboard. See the <i>WebFOCUS Managed Reporting Administrator's Manual</i> for more information.
	Accesses ReportCaster if ReportCaster is installed on the WebFOCUS Reporting Server. For more information, see the <i>WebFOCUS ReportCaster Development and Administration</i> manual.
	Accesses the ReportCaster Console if ReportCaster is installed on the WebFOCUS Reporting Server. For more information, see the <i>WebFOCUS ReportCaster Development and Administration</i> manual.
	Accesses the content in the Report Library.

<b>Button</b>	<b>Operation</b>
	Launches the Server Console for the selected WebFOCUS Reporting Server, which you use to configure and manage WebFOCUS Reporting Servers. Note that the Server Console is sometimes referred to as the Web Console.
	Launches the WebFOCUS Administration Console, which you use to administer and configure remote WebFOCUS environments.
	Displays properties of the selected item.
	Deletes the selected item from the hard drive.
	Displays items in the view as large icons, small icons, or in a list; also displays item details.

## **Setting Up a WebFOCUS Environment**

### **In this section:**

- Working With Environment Properties
- Local Machine Properties
- Web Component Properties
- WebFOCUS Client Properties
- Managed Reporting/ReportCaster Properties
- Data Server Properties
- Project Development Properties
- Changing the Development Environment

A WebFOCUS environment consists of a Web server, a WebFOCUS Client, and WebFOCUS Reporting Servers. To add a WebFOCUS environment, you specify a Web server containing the WebFOCUS Client and the connection method it uses (servlet, CGI, or ISAPI). Developer Studio then finds all of the WebFOCUS Reporting Servers that the WebFOCUS Client can access.

You can add new WebFOCUS environments and edit existing environments in Developer Studio using the WebFOCUS Environment Properties dialog box. This lets you create and manage multiple environments, such as development, test, and production instances. An environment can be on the same machine as Developer Studio or elsewhere in your enterprise. One environment is set as the development environment and is used in the Projects area of Developer Studio. By default, Project-based development is done on the local machine (localhost). Once a WebFOCUS environment is defined, you can tell Developer Studio to perform Project-based development on a remote machine instead of localhost.

**Note:** For Managed Reporting development, you must set up access to a WebFOCUS environment where Managed Reporting is installed. If Managed Reporting is installed on the same machine as Developer Studio, then administrators can automatically access the local instance of Managed Reporting. However, Managed Reporting is not installed with Developer Studio.

## Working With Environment Properties

### How to:

Add a WebFOCUS Environment

When you set up access to WebFOCUS environments, your settings are retained when you restart or even reinstall Developer Studio. WebFOCUS environment settings are normally stored in:

`drive:\Documents and Settings\user_id\Application Data\Information Builders\wfscom.xml`

where:

`user_id`

Is your logged on Windows ID.

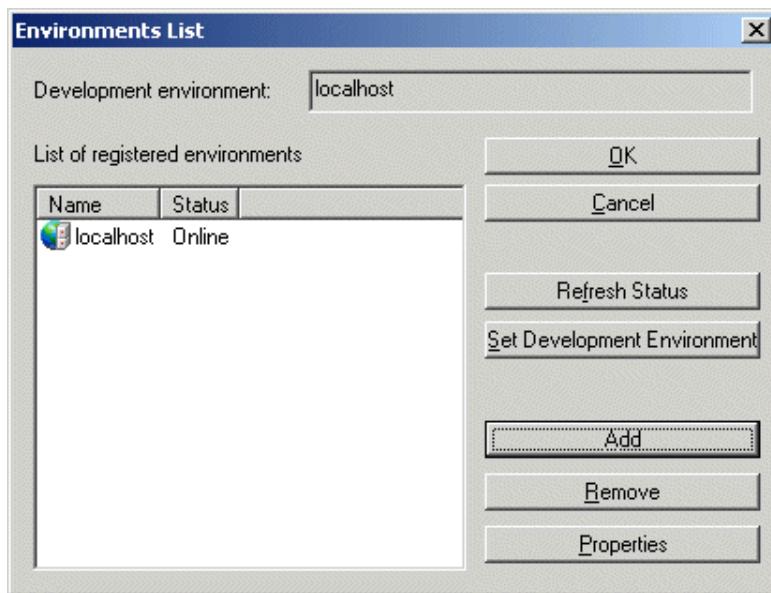
### Note:

- ❑ This file and directory may not be visible by default. To see this directory, open *Windows Explorer*, click *Tools*, choose *Folder Options*, and select the *View* tab. Then, select *Show hidden files and folders* and click *OK*.
- ❑ In Developer Studio Version 5 Release 3 and earlier, this file was named `wfscom.wfs`. When you launch Developer Studio Version 7 Release 6, an existing `wfscom.wfs` file is renamed to `wfscom.xml`.

- ❑ If an existing wfscom.xml or wfscom.wfs file existed and had a localhost environment, the existing localhost environment gets updated with settings based on the installation and configuration options selected during the installation. If localhost did not exist, it is created with settings based on the installation and configuration options selected during installation.
- ❑ User IDs and passwords stored in wfscom.xml are encrypted to keep them confidential.
- ❑ WebFOCUS environment properties apply to your current Developer Studio configuration. It will not impact other users or the WebFOCUS configuration.

**Procedure: How to Add a WebFOCUS Environment**

1. Select the *File* menu and choose *Show Environments*. The Environments List dialog box opens as shown in the following image.



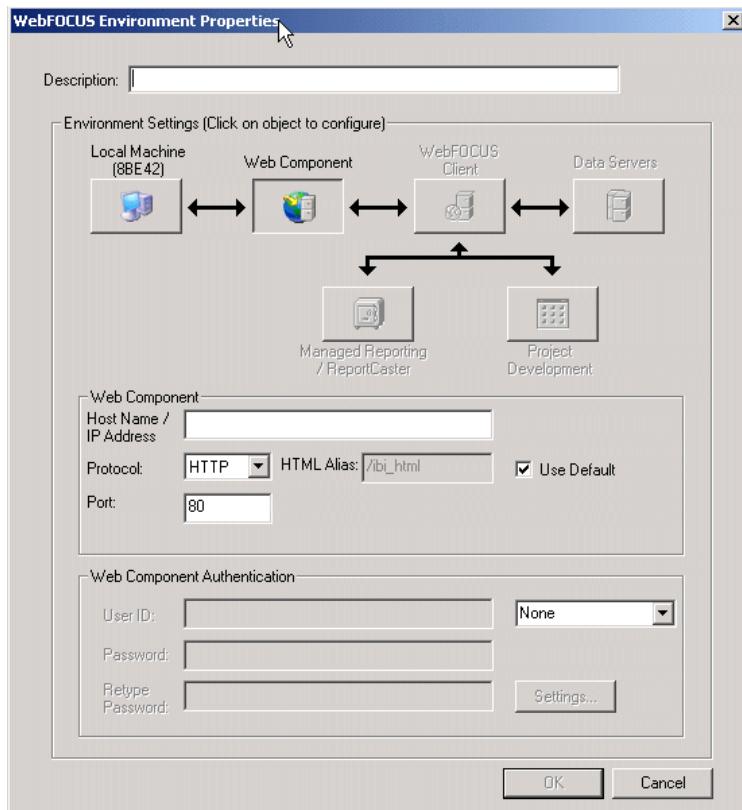
This dialog box lists all WebFOCUS Environments defined for Developer Studio. If you previously installed Developer Studio, WebFOCUS Environments may already be defined. Otherwise, only the localhost environment appears. To edit an existing environment, select and click *Properties*.

**Note:** The Set Development Environment button does not apply to Managed Reporting.

**Tip:** You can also add a WebFOCUS Environment by right-clicking *WebFOCUS Environments* on the Developer Studio Explorer and selecting *Add*.

2. Click the Add button.

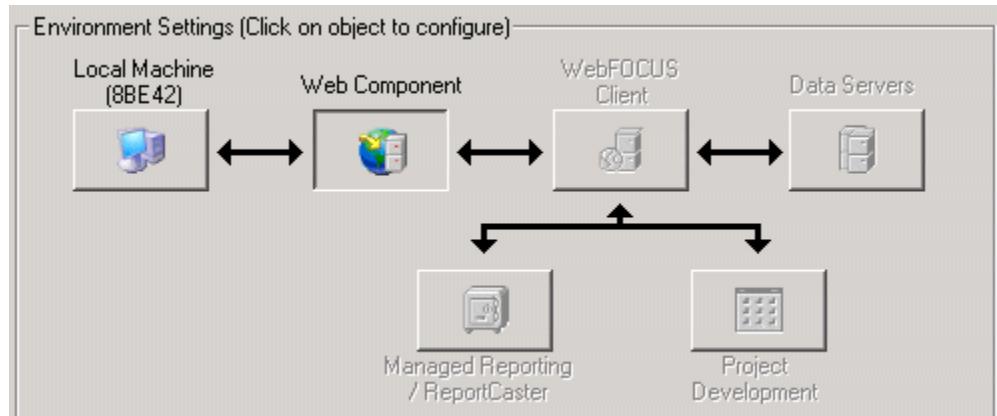
The WebFOCUS Environment Properties dialog box opens as shown in the following image. At the top part of the dialog box is the Description text box followed by the Environment Settings section, which contains a series of buttons that each represents a component in a WebFOCUS environment. At the bottom part of the dialog box are fields to set up a connection to the Web server (Host Name, Protocol, Port, and Web Server Authentication for a User ID and Password).



Use the WebFOCUS Environment Properties dialog box to define which components make up the environment. You can optionally enter authentication information for components that require logon credentials.

3. On the top of the window, type a description for the WebFOCUS environment. This description will appear in the Developer Studio Explorer under WebFOCUS Environments.

The following image shows the top area of this screen. This area contains a series of buttons that each represents a component in a WebFOCUS environment. The Web Components button is selected by default. The Project Development Environment settings is only available in the full edition of Developer Studio.



4. On the bottom of the Web Components page, specify the information needed to access the Web server.

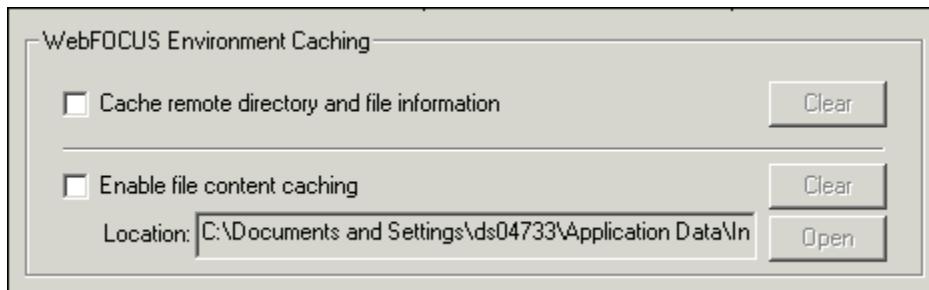
For some environments, once you specify the Web server, all other settings default. If the WebFOCUS environment you are accessing does not use default settings or components require authentication, click the appropriate button in the top pane to provide parameters. The sections that follow explain the parameters available for each component.

**Note:** WebFOCUS environment properties must be entered in a specific order. For example, if Web server security is enabled, you cannot set the WebFOCUS Client Path until you have provided valid Web server credentials. Similarly, you cannot retrieve a list of WebFOCUS Reporting Servers until you have provided a valid WebFOCUS Client Path. As you select a component button in the dialog box, Developer Studio ensures that it has the necessary information before it displays that component's properties in the lower part of the dialog box. If the required information is not available, you will not be able to proceed to the next component.

## Local Machine Properties

Local Machine properties are optional. You can select the *Local Machine* button to indicate whether to cache files when accessing the WebFOCUS environment.

The following image shows the WebFOCUS Environment Caching section of the WebFOCUS Environment Properties dialog box.



In caching, copies of files or information stored on a remote machine are temporarily stored on your local Developer Studio machine. Developer Studio then works with the locally stored files. Caching speeds Developer Studio performance because remote machines are not accessed and queried every time you request information. This is especially useful when accessing mainframes or when a network connection is slow. However, caching should not be used when multiple developers are working with the same files because the possibility exists that you may overwrite each others changes. By default, caching is not enabled.

Two properties are available:

- ❑ **Cache remote directory and file information.** This option caches information about files stored on the WebFOCUS environment. This does not actually cache files, only information about them. If selected, Developer Studio does not re-query the WebFOCUS Reporting Server every time it needs a list of files stored on the server.
- ❑ **Enable file content caching.** This option caches files normally stored on the server. Developer Studio only retrieves files once and then when you wish to read or edit them, it uses a cached copy. Be aware that when you edit a cached file, the edited cached file is returned to the server and replaces the actual file on the server.

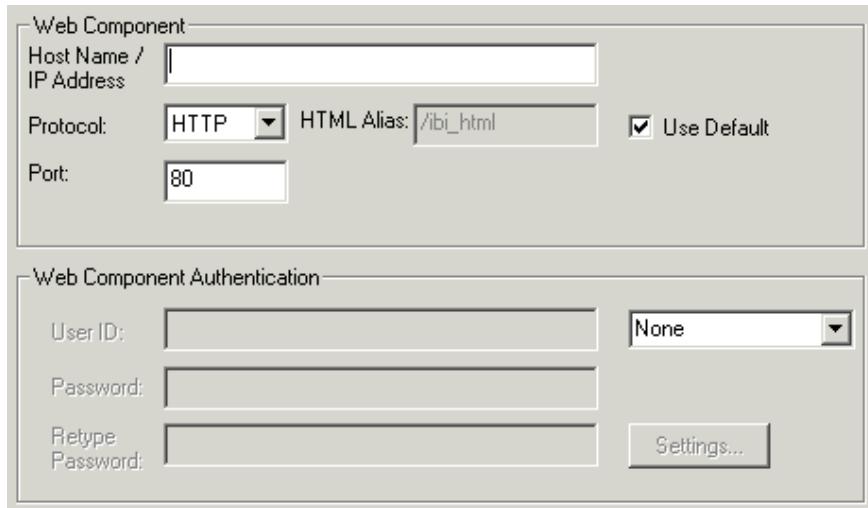
Developer Studio retrieves information and files the first time you request them and then caches them locally. Developer Studio then uses the cached copies until Developer Studio is restarted or you click the *Clear* buttons for each level. You can perform a manual refresh and clear all cache files by clicking *View*, then *Refresh*, or by pressing F5. Refresh is performed for the area that is selected in the Explorer when you perform this action.

**Note:**

- ❑ If you create a new synonym, you must manually perform a refresh to view the new files in the Developer Studio Explorer when caching is enabled.
- ❑ You cannot use the caching options for the local development environment if the Source Control feature is enabled.

## Web Component Properties

The **Web Components** button is normally selected by default. Web Component properties specify how Developer Studio accesses the Web server. The Web server must be identified before any other components. The following image shows the Web Server section of the WebFOCUS Environment Properties dialog box.



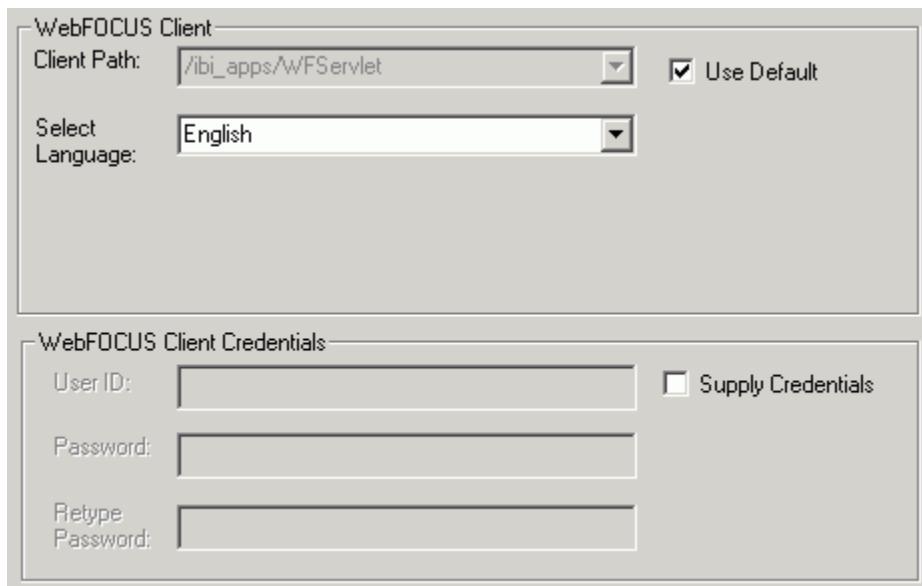
The following properties are available:

- ❑ **Host Name/IP Address.** This specifies the hostname or IP address where your Web server is running. This field is required and will not default. For a network installation, ensure this is the actual hostname and not localhost.
- ❑ **Protocol.** This is the protocol to use for accessing the Web server.
- ❑ **Port.** This is the TCP/IP port for accessing the Web server. Port 80 is the default for HTTP with most servers. However with Tomcat, this is port 8080.
- ❑ **HTML Alias.** This is the alias defined on the Web server for the environment's ibi\_html directory. If your WebFOCUS environment does not use the default ibi\_html alias, specify the custom alias defined on the remote Web server. Developer Studio must know this alias to retrieve key information from WebFOCUS Client files such as cgipath.js and ibiapplets.txt.
- ❑ **Use Default.** This specifies whether to use the default ibi\_html alias. Leave this checked unless you change the *HTML Alias*.

- **Web Component Authentication.** This specifies whether authentication is required on the Web server. To set security, select *Basic* in the drop-down list and type a Web server *User ID* and *Password*. If this is set to *None*, the Web server must allow anonymous access. Additional custom security methods can be added, such as SiteMinder. For more information see the *WebFOCUS Security and Administration* manual.

## WebFOCUS Client Properties

When you click the *WebFOCUS Client* button, Developer Studio makes a connection to your Web server to retrieve information about the WebFOCUS environment. Therefore, you must first specify Web Component properties and your Web server must be running. The following image shows the WebFOCUS Client section of the WebFOCUS Environment Properties dialog box.



**Note:** If the Client Path field is empty and the Use Default option is selected, there is a problem connecting to the WebFOCUS Client. Ensure your Web server is started and that you typed the correct properties on the Web Components page. If you cannot connect, contact your WebFOCUS Administrator.

The following properties are available:

- **Client Path.** This specifies how calls are made from Developer Studio to the Web server. By default, when you add a new WebFOCUS environment, it is set to use the WebFOCUS Servlet with the default ibi\_apps context path:

`/ibi_apps/WFServlet`

If the WebFOCUS environment does not use servlet or uses a non-default context path, uncheck *Use Default* and provide the correct Client Path. Common default settings appear in the Client Path drop-down list. They are:

`/ibi_apps/WFServlet` (Servlet)  
`/cgi-bin/ibi_cgi/ibiweb.exe` (CGI)  
`/cgi-bin/ibi_cgi/webapi.dll` (ISAPI)

Servlet is required for Managed Reporting or Tomcat. If the Client Path is incorrect for the environment, you receive an error when you click the *Data Servers* button on the top of the page. If you do not know your path, ask your WebFOCUS Administrator or check the WebFOCUS Administration Console of the environment to which you want to connect. The Client Path settings for the environment are located under *Utilities* and *Client Selection*.

- ❑ **Select Language.** This specifies the GUI language that is used when Developer Studio connects to a remote utility (Managed Reporting, HTML tools). When a multi-language master file is used, this setting specifies the language titles in reports.
- ❑ **Supply Credentials.** If required, you can check this box and type a WebFOCUS Client *User ID* and *Password*. These credentials are only used for Project-based development and do not apply to Managed Reporting. They are used to ensure that a developer is authorized to perform certain activities such as deploying an application and writing to Web server directories.

WebFOCUS Client user IDs are the same IDs used to access the WebFOCUS Administrative Console in Developer mode. If authentication is enabled for the Console and these fields are empty, you are prompted to log on to the WebFOCUS Client when you access the environment. Your WebFOCUS Administrator will let you know if you need to supply WebFOCUS Client credentials.

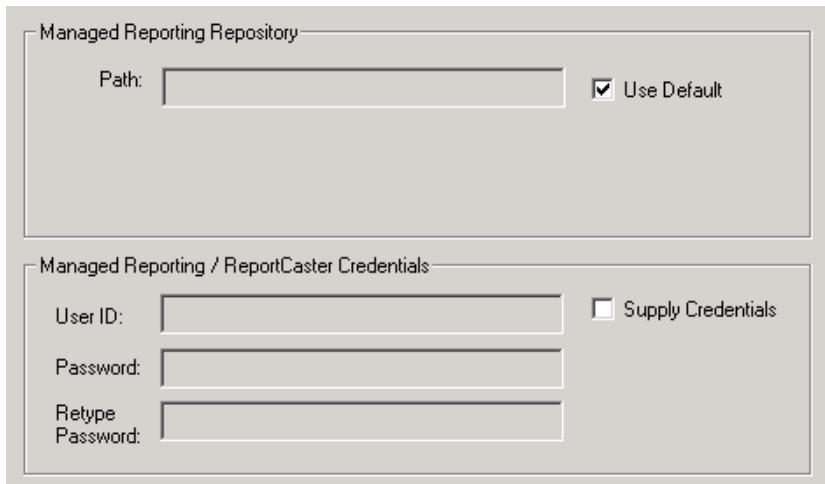
When the correct WebFOCUS Client Path is provided, you can specify properties for the remaining component.

## **Managed Reporting/ReportCaster Properties**

If you plan to work with Managed Reporting (MR) and/or ReportCaster, you can optionally select the *Managed Reporting/ReportCaster* button. This allows you to set logon credentials or change the default Managed Reporting repository.

This feature is not applicable to the Power Reporter edition of Developer Studio.

The following image shows the Managed Reporting Repository section of the WebFOCUS Environment Properties dialog box.



The following properties are available:

- ❑ **Path.** This lets you specify a non-default Managed Reporting repository. For a default Managed Reporting repository, the Path field is empty and the Use Default check box is selected. Your WebFOCUS Administrator may instruct you to deselect the Use Default check box and enter a path, for example:

```
e:\user_test\basedir01
/usr/user_test/basedir01
```

You will not see a value in this field when Use Default is checked, because it is not currently possible for WebFOCUS to detect the list of potential repositories on the Web server.

**Note:** ReportCaster only supports the Managed Reporting Repository as defined in the WebFOCUS Client Configuration file MR\_BASE\_DIR.

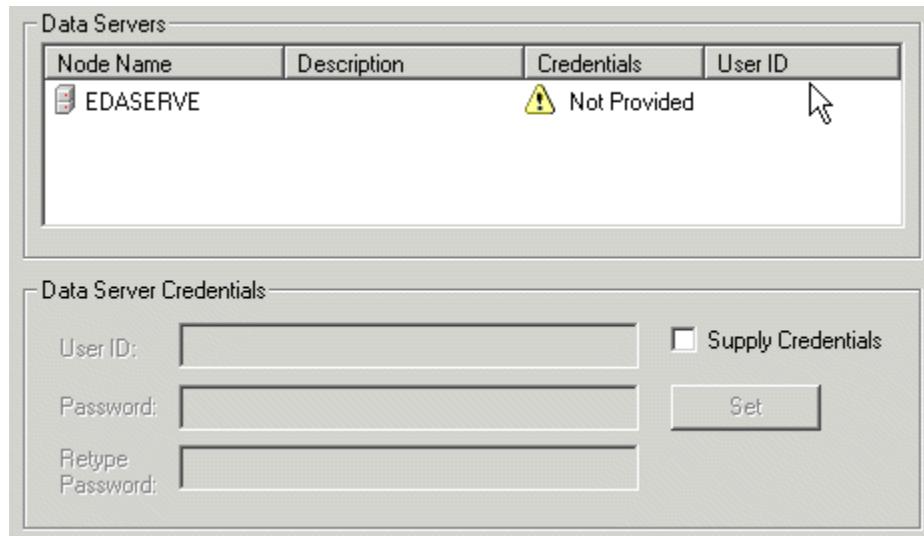
- ❑ **Supply Credentials.** If required, you can check this box and type a Managed Reporting/ReportCaster logon. Developer Studio will automatically use this logon each time it accesses MR or ReportCaster. If this is blank, Developer Studio prompts you for the logon when it requires access to MR or ReportCaster.

**Note:** If your WebFOCUS Administrator has integrated MR authentication with Web server authentication, do not supply MR credentials here. They will be picked up from the Web server component properties.

## Data Server Properties

You can set authentication and view available WebFOCUS Reporting Servers by clicking the Data Servers button. When you select Data Servers, Developer Studio connects to the WebFOCUS Client and retrieves a list of servers from its communication configuration file (odin.cfg).

The following image shows the WebFOCUS Servers section of the WebFOCUS Environment Properties dialog box.



The following property is available:

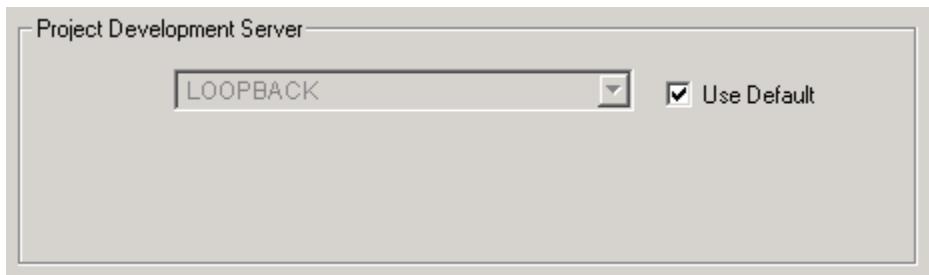
- Supply Credentials.** If checked, you can type a WebFOCUS Server ID and password for the server highlighted in the list. Clicking Set stores the credentials with the environment properties, and the ID entered is shown next to the server in the list. The credentials are checked the next time you use a feature on that server, not when you click the Set button.

## Project Development Properties

**Note:** These properties only apply to self-service application development, not to Managed Reporting.

If you use remote Project-based development and your remote environment has multiple WebFOCUS Reporting Servers, click the *Project Development* button to specify which server to use when processing requests. This server is referred to as the Project Development Server. The Project Development Server and the WebFOCUS Client must be installed on the same machine and use the same Application Root directory (APPROOT directory) as each other.

The following image shows the Project Development Server section of the WebFOCUS Environment Properties dialog box.



The following property is available:

- ❑ **Project Development Server.** This specifies which server to use for Project Development. All servers defined in the WebFOCUS Client appear in the drop-down list.

## Changing the Development Environment

### How to:

Change the Development Environment

To use remote Project-based development, you must change the development environment. If you do not plan to use remote Project-based development, you can skip this procedure.

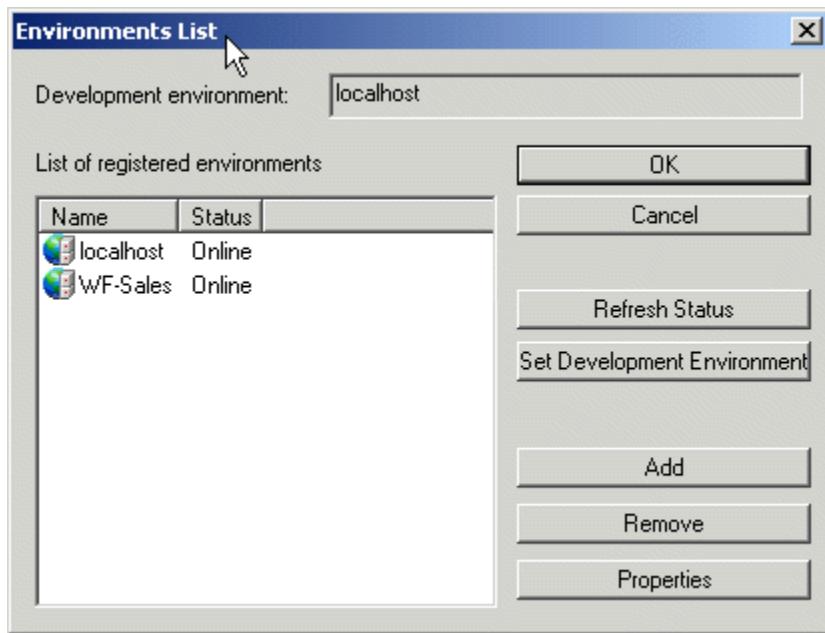
After you set up connections to WebFOCUS environments, you can add, edit, and delete files on remote machines through the WebFOCUS Environments folders. However, you may want to use the organizational tools available in the Projects folders to manage applications on remote machines. This is known as remote Project-based development and it allows developers on different desktops to share files and work on the same application.

Remote Project-based development requires that all WebFOCUS components in the remote environment reside on the same machine as each other, but not necessarily the same machine as Developer Studio. In addition, the remote WebFOCUS environment must have the same Application Root directory (APPROOT directory) for its WebFOCUS Reporting Server and WebFOCUS Client.

You can change the development environment using the Environments List.

**Procedure: How to Change the Development Environment**

1. Select *File* and then *Show Environments* to bring up the Environments List:



**Note:** If an environment appears as unavailable, click *Refresh Status*.

2. Select the WebFOCUS Environment that you wish to use for Project-based development.
3. Click *Set Development Environment*.
4. Click *OK*.

The Developer Studio Explorer now shows Projects on the WebFOCUS environment you chose. Resources will be stored on the remote machine. If multiple WebFOCUS Reporting Servers are defined, reports are run using the WebFOCUS Reporting Server that is set for project development in this environment.

## Custom Logon Template Support

If you are protecting WebFOCUS with custom security, you may be able to access it from Developer Studio by using a custom logon template. Logon templates are developed by an administrator and describe certain behavior specific to the custom security solution. The template uses XML tags to describe the path to the logon resource (for example, a servlet, JSP, ASP, or CGI), the protocol to use (for example, HTTP or HTTPS). The security system must return a cookie, named in an XML tag, upon successful signon. Developer Studio will then continuously forward this cookie to the site protecting WebFOCUS for the duration of its session. These templates are distributed to each developer or referenced from a shared location on the network. Developers may then select a custom logon template from the environment properties dialog and use it to access the protected WebFOCUS environment. See the *WebFOCUS Security and Administration* manual for more details.

## Enhanced Support for Netegrity SiteMinder

The Netegrity SiteMinder logon option has been redesigned to use an XML-based logon template architecture. This approach allows a site to customize its SiteMinder logon behavior. For example, your logon resource can now be located on a machine different from the machine hosting WebFOCUS if you add the SMAGENTNAME variable and assign it the appropriate value. See the *Netegrity SiteMinder Integration with WebFOCUS* technical memo for more details.

## Support for RSA Clear Trust

Developer Studio includes an option for RSA ClearTrust logon. This option is implemented with a new XML-based logon template architecture that allows the site to customize the logon behavior. See the *WebFOCUS Security and Administration* manual for more details.

## Logging Off Areas in WebFOCUS Environments

### How to:

#### Logoff Areas in WebFOCUS Environments

You can logoff and then reconnect using different credentials for the following areas in WebFOCUS Environments (without having to restart Developer Studio):

- The environment name.
- All available Data Server nodes.
- Managed Reporting.

If credentials are stored in the Environment properties, required cookies are deleted during the logoff process and stored credentials are reused to establish a new connection.

**Procedure: How to Logoff Areas in WebFOCUS Environments**

1. Select the WebFOCUS Environments object area.
2. Either right-click the object and select *Logoff* or select *Logoff* from the File menu.

When you select the Logoff option, the following occurs:

- ❑ Any open tools are closed and you are prompted to save changes. If you choose not to save changes and click Cancel, the Logoff action is also canceled.
- ❑ When tools are closed, any open trees collapse and the following cookies are deleted:
  - ❑ At the environment name (client and Web connection):  
WFC\_cookie
  - ❑ For available Data Server nodes:  
WF\_cookie
  - ❑ For Managed Reporting:  
MR\_cookie

**Note:**

- ❑ For Managed Reporting, a connection to a WebFOCUS Reporting Server is usually required and most likely established. Clearing the MR\_cookie will not clear the WebFOCUS Reporting Server cookie since a new connection may need to use the same WebFOCUS Reporting Server.
- ❑ If caching is enabled, cache of remote directory and file information (metadata level caching) is automatically refreshed when you logon, create, delete, or rename applications or files across all areas of the product.
- ❑ You do not have to clear file I/O (content) caching. File content caching is performed for individual environments and metadata is refreshed when you log on. If a file is cached and user has access to this file, the cached file will be opened.
- ❑ The logoff option is visible only after a connection is established for the selected area.

## Developer Studio Data Access and Descriptions

### In this section:

Configuring Data Adapters, Remote Servers, and Synonyms in Developer Studio

Using the Reporting Server Web Console for Data Access and Synonym Preparation

Developer Studio includes sample data and Master Files to help you familiarize yourself with the interface and practice creating applications. However, to create applications that report on your own data, you need Master (.mas) and Access (.acx) Files (synonyms). Master Files describe the data so WebFOCUS can report on it. Access Files provide information that WebFOCUS needs to access the data. A synonym is a collection of Master and Access Files for a specific data source.

To create and run applications on your local machine, Master and Access Files must be in a subdirectory of the Application Root directory (APPROOT) located on *drive:\ibi\apps* by default. If you are developing applications using a remote WebFOCUS environment, you have access to the Master and Access Files on the remote WebFOCUS Reporting Server.

If you use a local copy of the WebFOCUS Reporting Server, you can create and run applications locally by configuring the local WebFOCUS Reporting Server. There are two ways to configure the local server to access data:

- Connect the local WebFOCUS Reporting Server to remote WebFOCUS Reporting Servers that have access to your data. Data adapters should be configured on the remote servers if they have not been already.

or
- Configure data adapters for your data sources using the local server. This is only an option when your local machine has access to your data sources. The data sources must be on your machine or accessible through a third-party product. For example, Oracle Client is needed to create a data adapter to a remote Oracle Server, and OLE DB is needed to create a data adapter to a remote Microsoft SQL Server.

After you have added a remote server or a data adapter, the synonym tool can create your Master and Access Files as explained in [How to Create a Synonym in Developer Studio](#) on page 69.

**Note:** If you are not using a local copy of the WebFOCUS Reporting Server, you use resources on the remote environment. If you have administration rights to the remote Reporting Server, you can launch the Reporting Server Console in order to administer the server, configure data adapters, create synonyms, and perform other tasks. All processing will be done on the remote machine.

## Configuring Data Adapters, Remote Servers, and Synonyms in Developer Studio

### How to:

- Access the Create Synonym Tool
- Access the Create Synonym Tool From Developer Studio Reporting Tools
- Configure an Adapter in Developer Studio
- Add a Remote Server in Developer Studio
- Create a Synonym in Developer Studio
- Refresh Synonyms
- Delete Synonyms
- View or Edit Synonym Code
- View and Modify the Properties of a Synonym

### Reference:

- Synonym Creation Parameters for Microsoft SQL Server
- Synonym Creation Parameters for Stored Procedures

You can set up access to your data using the Create Synonym Tool within Developer Studio or the Server Console. Both approaches edit the same underlying server files, so it does not matter which you use. This topic explains how to add a remote server, configure a data adapter, and create a synonym using the Create Synonym Tool within Developer Studio. For information on the Server Console, see [Using the Reporting Server Web Console for Data Access and Synonym Preparation](#) on page 86.

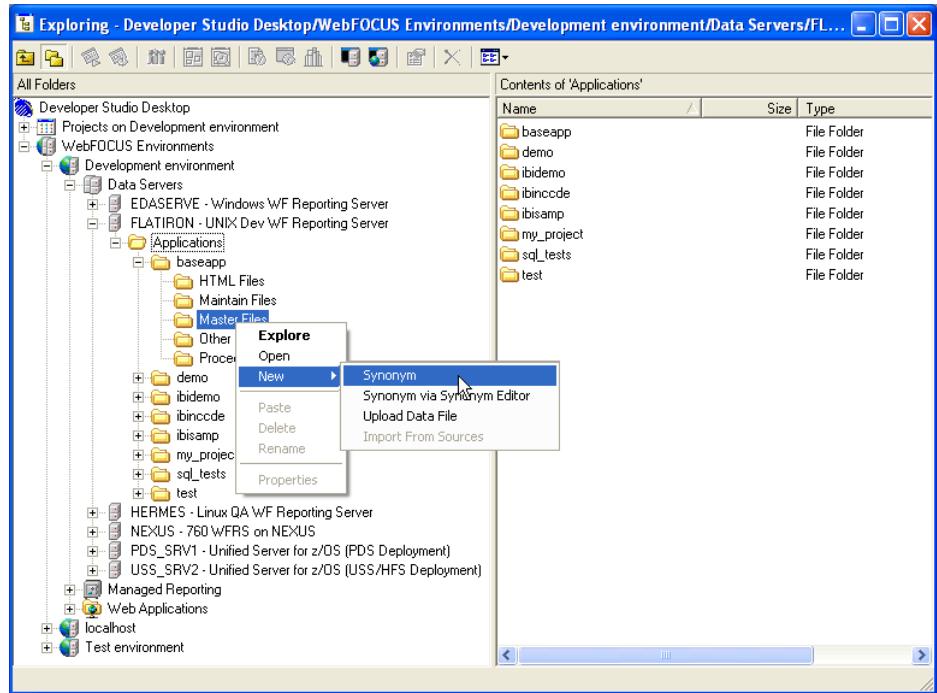
### Procedure: How to Access the Create Synonym Tool

To launch the Create Synonym tool from the WebFOCUS Environments area of the Explorer:

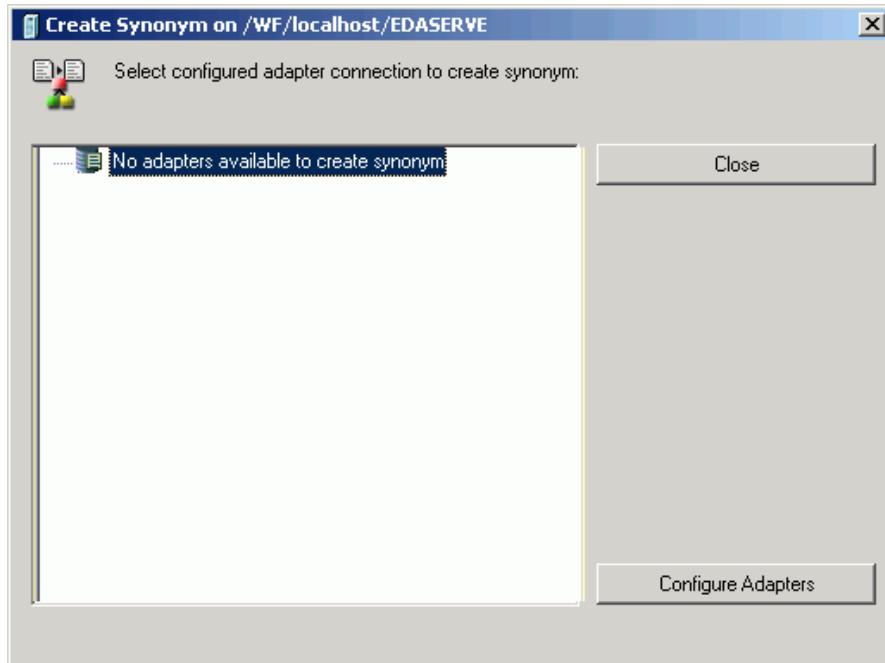
1. Expand your WebFOCUS environment (for example, FLATIRON-canUNIX Dev. WF Reporting Server), expand *Data Servers*, expand the server, expand the *Applications* folder, expand an application, and right-click the *Master Files* folder for the application in which you wish to access the data source.

If you wish to use the data source in multiple applications, or have not yet created your application, you can use the *baseapp* application, where resources can be stored for sharing and access by other applications.

**Tip:** If you are developing from the Projects area of the Explorer, expand the project, and right-click the *Master Files* folder, then proceed as described.

**2.** Select New and then Synonym.

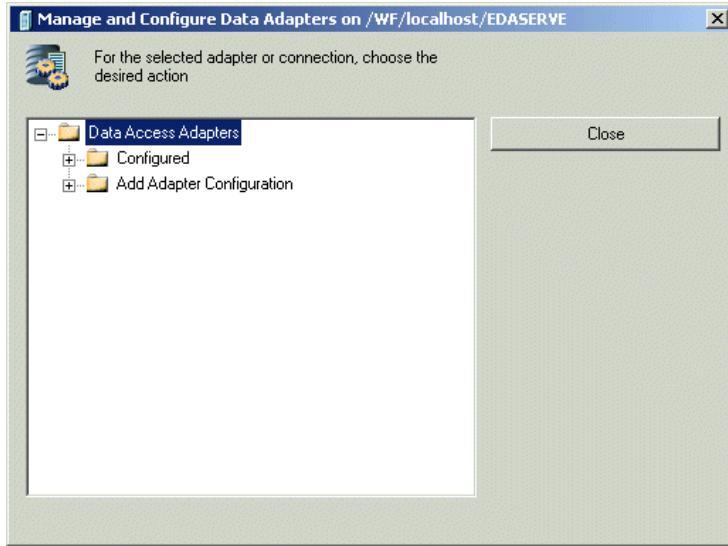
The Create Synonym tool opens. By default, no adapters are available. Your first task is to configure an adapter in order to be able to access a relational, multidimensional, or other type of data source.



**Note:** If any adapters have already been configured for the server you will not see this message. Instead, you will see the available adapters, from which you can immediately begin to create synonyms.

- 3.** In this instance, we are assuming that no adapters are available. Click the *Configure Adapters* button at the bottom right to start the configuration process.

The Manage and Configure Data Adapters window opens.



Depending upon your needs, you can use this Window to start configuring an adapter, adding a remote server, or both.

- ❑ **Configured.** This folder contains any data adapters or remote servers that are already configured. By default, when Developer Studio is installed on its own, the Configured folder displays a *Remote Servers* folder that contains *EDASERVE*, the default WebFOCUS Reporting Server.

You can use the Configured folder to add new connections for existing data adapters or servers, edit existing data adapters or servers, or create synonyms.

Note that this folder will not initially be visible for a WebFOCUS installation; it becomes visible only after an adapter or a remote server has been explicitly configured.

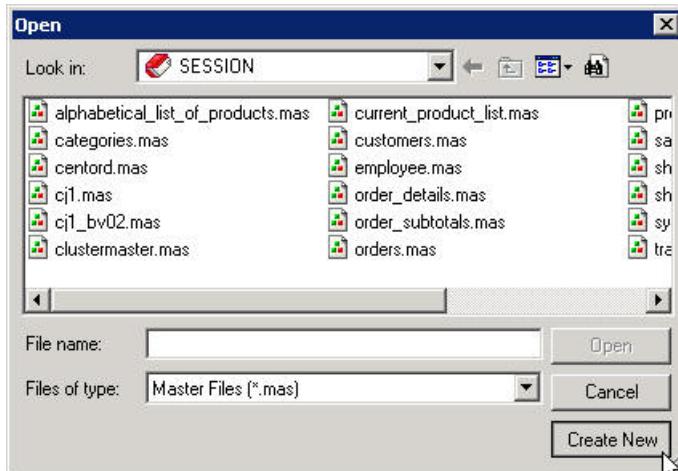
- ❑ **Add Adapter Configuration.** This folder lists the data adapters that you can configure on the WebFOCUS Reporting Server platform.

#### Procedure: How to Access the Create Synonym Tool From Developer Studio Reporting Tools

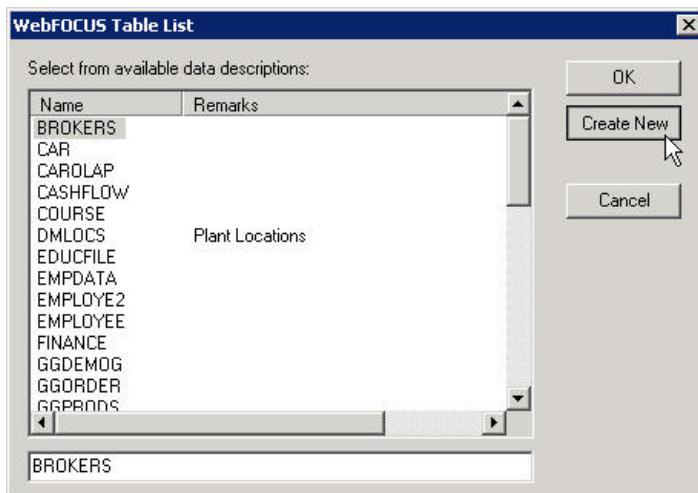
When building a report, you can access the Create Synonym Tool directly from any of the Developer Studio reporting tools when you want to report against a synonym that is not available in the list.

**1.** To launch the Create Synonym tool from Developer Studio reporting tools:

- ❑ Click *Create New* from the Open dialog box, as shown in the image below.

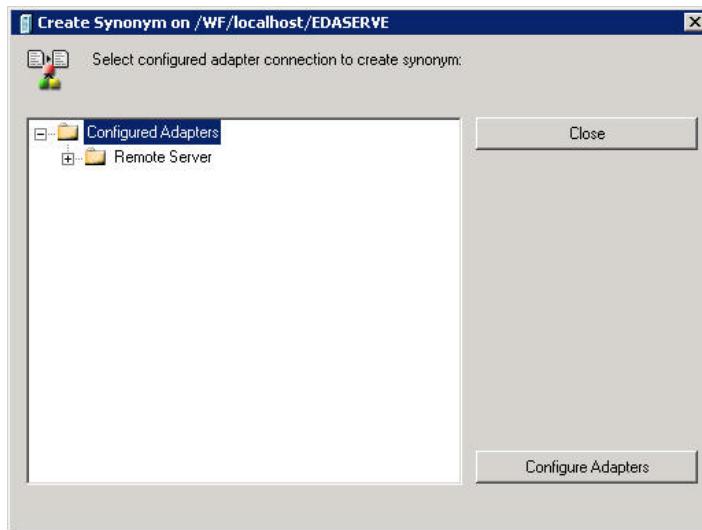


- ❑ Click *Create New* from the WebFOCUS Table list, as shown in the image below.



**Note:** When accessing a Developer Studio Tool in the Managed Developer Edition, the Create New button will not appear for developers without Data Server privileges. The Data Server privilege is optional for Developers and standard for Content Managers and Managed Reporting Administrators. This restriction does not apply to the full edition of Developer Studio.

The Create Synonym Tool opens.



2. Continue using the tool as described in this chapter.

For more information, see *Configuring Adapters and Remote Servers in Developer Studio* in the *Describing Data With Graphical Tools* manual.

When you have completed the synonym creation process, the new synonym appears in the list of available synonyms. You can then select it and continue to create your report request.

#### **Procedure: How to Configure an Adapter in Developer Studio**

This procedure assumes that you have opened the Create Synonym tool and clicked the *Configure Adapter* button to access the Manage and Configure Data Adapters window. You are now ready to proceed as described below:

1. Expand the *Add Adapter Configuration* folder in the Manage and Configure Data Adapters window.
2. Expand folders to select from the list of available adapters and select an adapter to configure.
3. Click the *Configure* button to add the selected adapter.  
Fields for defining the adapter appear.
4. Complete the form for your adapter.

**Tip:** If you need information about these fields, refer to the Server Console help, which you can access by choosing *WebFOCUS Reporting Server Console* from the Command menu. The Server Console opens. Click *Help* on the menu bar, select *Contents and Search*, expand the *Adapters* topic in the Table of Contents pane, and look for the adapter you are configuring. (This is the same information contained in the *Adapter Administration for UNIX, Windows, OpenVMS, i5/OS, and z/OS* manual.)

**5.** Click *Configure*.

A message from the Reporting Server confirms that the adapter has been added to your configuration.

**6.** Click *Continue* to return to the Manage and Configure Data Adapters window.

A folder for your adapter should appear under *Configured*.

**7.** Expand your adapter folder and click the connection you defined.

The Create Synonym, Test, Delete, and Properties buttons appear.

**8.** Click *Test* to test the connection.

If you typed the correct connection parameters, sample data should appear.

If the test fails, click the connection, choose *Properties*, and adjust your information accordingly.

**9.** When sample data appears, click *Close*.

**Procedure: How to Add a Remote Server in Developer Studio**

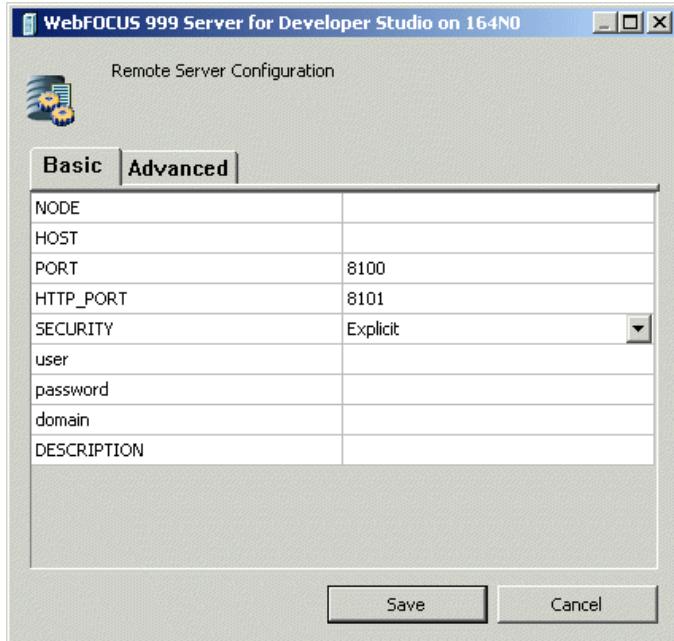
This procedure assumes that you have opened the Create Synonym tool and clicked the *Configure Adapter* button to access the Manage and Configure Data Adapters window. You are now ready to proceed as described below:

**1.** Expand the *Configured* folder in the Manage and Configure Data Adapters window of the Create Synonym tool.

**Note:** If you do not see the *Configured* folder, expand *Add Adapter Configuration* instead.

**2.** Instead of choosing an adapter from the list, select *Remote Servers* and choose *Add connection* or *Configure*.

A window appears containing fields to define the connection.



- 3.** Complete the fields as follows:

<b>Basic Parameters</b>	<b>Description</b>
NODE	Type a name by which you will refer to the server. The name is your choice, but cannot be the same as any other server. It must begin with a letter and cannot be more than eight characters.
HOST	Specify the hostname or IP Address for the server.
PORT	Specify the base TCP port for the server. The default is normally 8120, not 8100.
HTTP_PORT	Specify the HTTP port for the server. This is normally one more than the base TCP port. The default is normally 8121, not 8101.
CLASS	If this is a z/OS server, you must include a qualifier. (Pertains only to z/OS servers.)

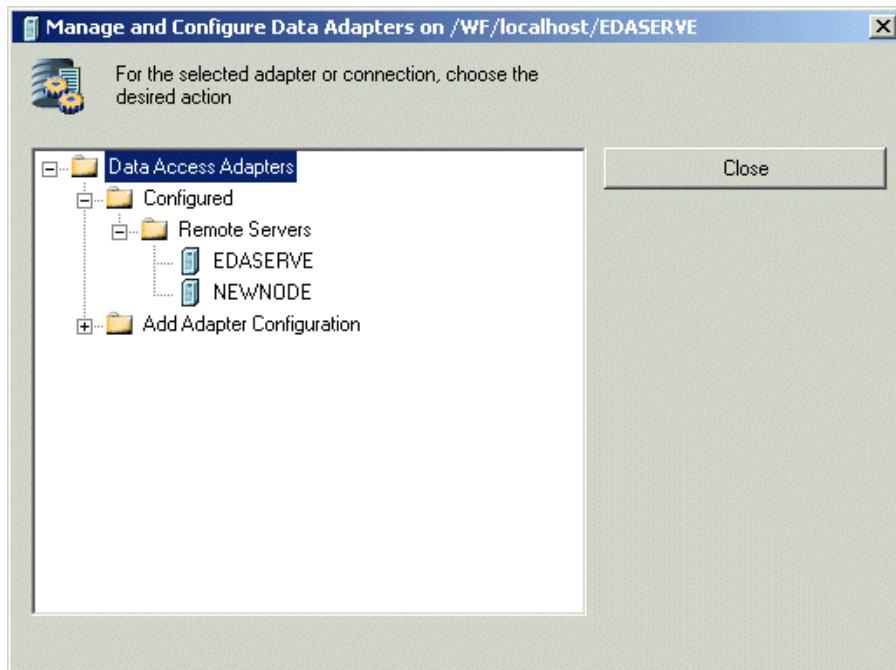
<b>Basic Parameters</b>	<b>Description</b>
SECURITY	<p>Specify how a user should log on to the remote server:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>IWA</b> (Integrated Windows Authentication; Windows only). Passes your Windows user ID and password to the server when a connection is made.</li> <li><input type="checkbox"/> <b>Explicit</b>. Passes the user ID and password you provide.</li> <li><input type="checkbox"/> <b>Password Passthru</b>. The user ID and password received from the client application are passed to your data source at connection time. This option requires that the server be started with security off.</li> <li><input type="checkbox"/> <b>Trusted</b>. For a trusted connection, where the current logged on user ID is passed to the server.</li> </ul> <p>If the server is not on Windows and runs with security ON, providing an explicit user ID and password is required to create synonyms.</p>
user	If security is set to Explicit, enter a specific user ID.
password	If you entered a user, provide a password.
domain	For a server on Windows, you can specify the domain where the user ID is defined.
DESCRIPTION	Optionally, type a description for the node. This description displays in the WebFOCUS front-end tools.

4. When connecting to a Unified Server, click the Advanced tab and specify the SERVICE NAME, and other parameters, as required.

Advanced Parameters	Description
SERVICE NAME	<p>CLIENT (servicename)</p> <p>Defines how to send outbound communications to a remote server.</p> <p>servicename is optional. If servicename is provided, it must match the value of SERVICE in the service block of the server.</p>
HTTP_SSL	<p>Defines whether the Secure Sockets Layer protocol is used in the Web Console listener of the remote server. Enter:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 0 if no SSL is used in the connection to the Web Console.</li> <li><input type="checkbox"/> 1 if SSL is used in the connection to the Web Console.</li> </ul>
COMPRESSION	<p>Activates data compression in a data transfer between client and server. Enter:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 0 for no compression.</li> <li><input type="checkbox"/> 1 for compression on.</li> </ul>
ENCRYPTION	<p>Defines the encryption. Enter:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 0 for no encryption.</li> <li><input type="checkbox"/> DES for 56-bit fixed-key Data Encryption Standard.</li> <li><input type="checkbox"/> Advanced, enables you to easily select and combine ciphers, modes, and RSA key lengths. This option provides the following ciphers: 3DES, AES 128, AES192, AES 256, and the following modes: ECB and CBC.</li> <li><input type="checkbox"/> IBCRYPT for user-defined algorithm. Key is 512-bit RSA-encrypted.</li> </ul> <p><b>Note:</b> Encryption is not supported for PIPE protocol. Only 0 and DES are supported for HTTP protocol.</p>

<b>Advanced Parameters</b>	<b>Description</b>
CONNECT_LIMIT	<p>Defines the maximum time, in seconds, that the client will wait for a TCP connection response from the server. Enter:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> -1 for indefinite wait.</li> <li><input type="checkbox"/> 0 for no wait.</li> </ul>
MAXWAIT	<p>Defines the time, in seconds, that the client will wait for a response from the server: -1 indicates indefinite timeout.</p>

5. Click Save when you have provided your parameter values.  
A message indicates that a new server was added.
6. Click Continue.
7. Expand *Configured* and *Remote Servers* to see the new server.



8. Select the new server.

The Create Synonym, Test, Delete, and Properties buttons appear.

9. Click *Test* to test the connection.

If the remote server is started and you typed the correct connection parameters, sample data should appear.

10. Click *Close*.

If the test fails, click the server, choose *Properties*, and provide an explicit user ID and password. Then click *Save* and try the test again.

11. Click *Close*.

#### **Procedure: How to Create a Synonym in Developer Studio**

If it is not already open, to launch the Create Synonym tool from the WebFOCUS Environments area of the Explorer:

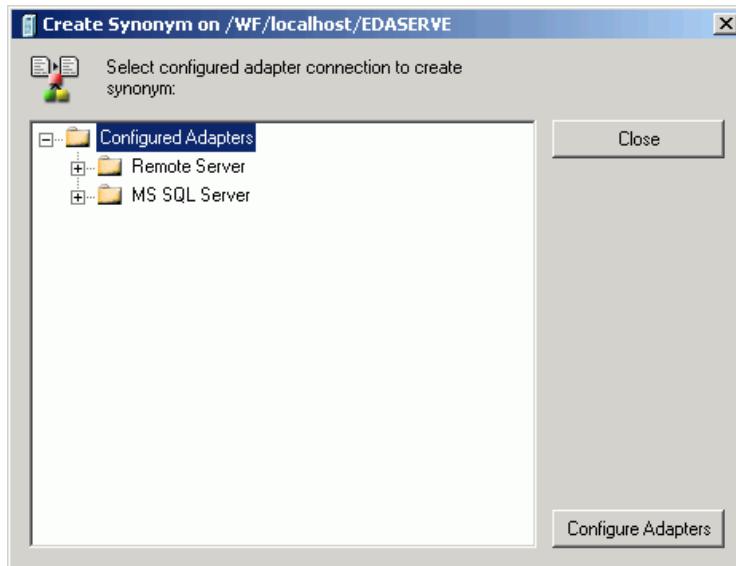
1. Expand your WebFOCUS environment (for example, FLATIRON (UNIX Dev WF Reporting Server), expand *Data Servers*, expand the server, expand the *Applications* folder, expand an application, and right-click the *Master Files* folder for the application in which you wish to access the data source.

If you wish to use the data source in multiple applications, or have not yet created your application, you can use the *baseapp* application, where resources can be stored for sharing and access by other applications.

**Tip:** If you are developing from the Projects area of the Explorer, expand the project, and right-click the *Master Files* folder, then proceed as described.

2. Select *New* and then *Synonym*. The Create Synonym tool opens.

3. In the first window, you can choose any configured data adapter or any remote server that has been added to the default Reporting Server. (Note that when you are creating a synonym through a remote server, the remote server should already contain the required synonyms and the corresponding adapters.)



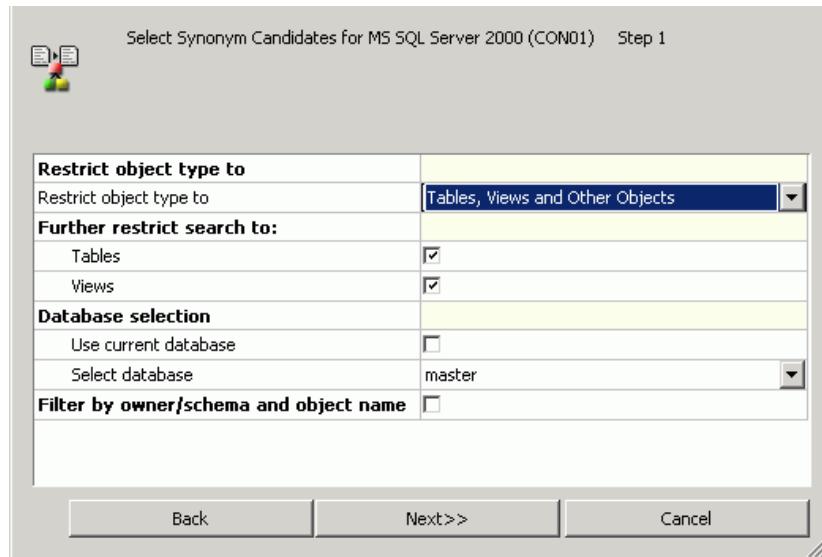
The server configuration, indicated by the server profile, determines which adapters and servers appear. In this example, the Adapter for Microsoft SQL Server is configured. If you have configured remote servers, they will appear expanded in the Remote Server folder.

4. Expand the folder for your adapter or the Remote Server folder.
5. Select the server or adapter that you configured and click **OK**.

A window opens in which you can enter additional information about the data source you wish to access.

**Important:** The options in this window vary depending on the type of adapter or server you are using. To access the pertinent information for your adapter directly from Developer Studio, choose *WebFOCUS Reporting Server Console* from the Command menu. The Server Console opens. Click *Help* on the menu bar, select *Contents and Search*, expand the *Adapters* topic in the Table of Contents pane, and look for the adapter for which you wish to create the synonym. The relevant synonym creation parameters are fully defined.

The following example is for accessing an adapter for Microsoft SQL Server.

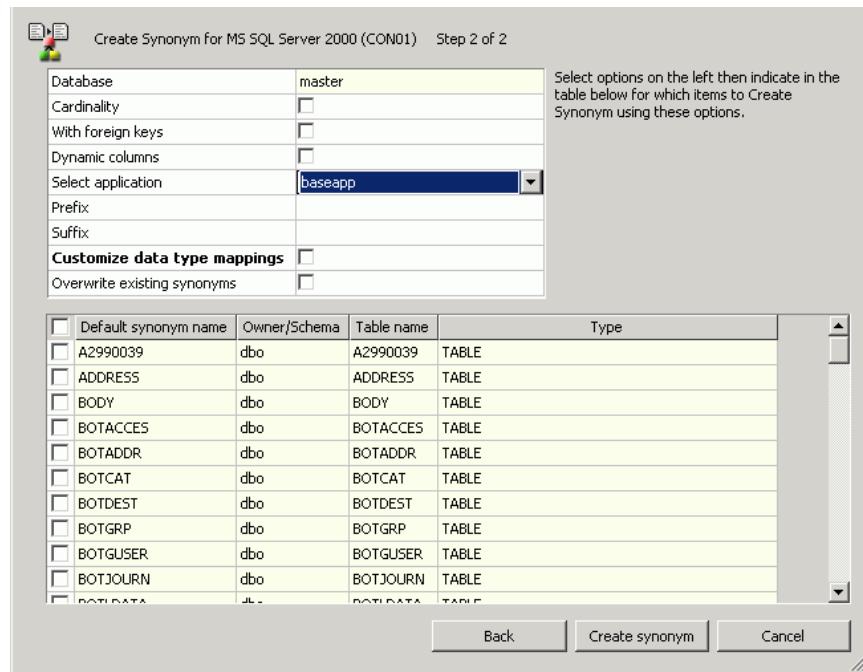


After you complete this window, the data source or server is queried to determine the metadata you can use to create synonyms. For a relational database, this is usually a list of tables or views. This window lets you filter the results so there are fewer tables from which to choose. Optionally, choose whether both Tables and Views should be returned. By default, both are checked.

For some data sources, you can select to generate synonyms for other object types, for example, Stored Procedures. If you do, the remaining input parameters will vary slightly. For details, see [Synonym Creation Parameters for Stored Procedures](#) on page 78.

6. For some data sources, you have the option to choose a database or other parameter. In this Microsoft SQL Server example, select the appropriate database or choose *Use current database*. You will be able to choose from the database tables when this window is complete.
7. Optionally, check *Filter by owner/schema and object name* to filter the results based on owners or table prefixes. This limits the list of tables returned from the remote data source and makes it easier to choose the data for which you want to create synonyms. If you do not include selection criteria, the entire list of tables is displayed.
8. Click *Next*.

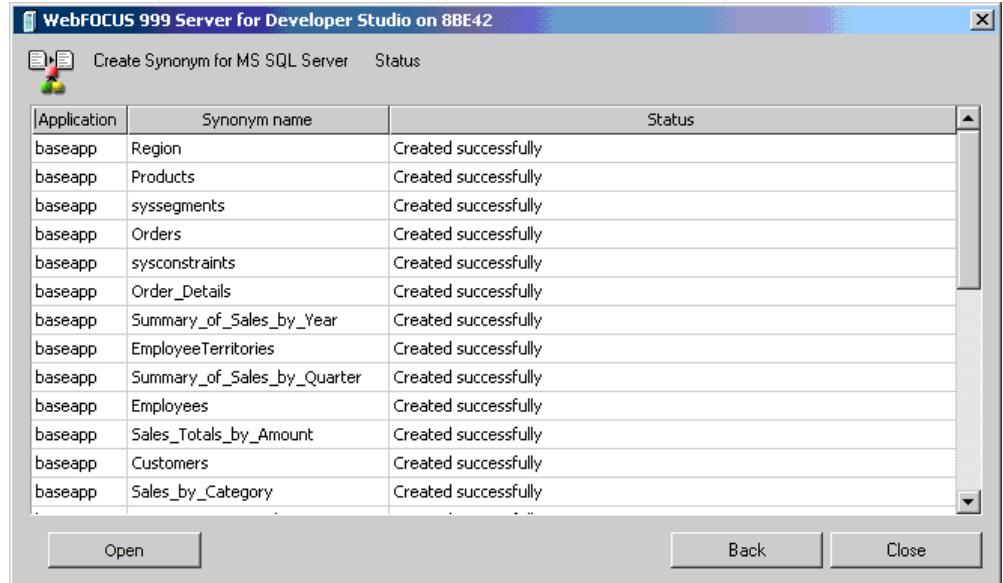
The top of the Create Synonym window now displays additional fields you can use to refine your synonym. Remember that the parameters vary depending on the type of adapter or server you are using.



The bottom of the Create Synonym window provides a list of tables for which you can create synonyms. To choose all, select the check box to the left of Default synonym name.

**9.** Click Create synonym.

The synonym is created and a confirmation window appears. Once again, note that the window may vary depending on the type of adapter or server you are using.



The synonyms are created in the selected application directory. (In this example, the default application, baseapp, is used.)

**10.** Click Close.

**Reference: Synonym Creation Parameters for Microsoft SQL Server**

The following table describes the synonym creation parameters for Microsoft SQL Server, based on Tables, Views, or External SQL Scripts.

Parameter/Task	Description
Restrict object type to	<p>Restricts candidates for synonym creation based on the selected object types: Tables, Views, External SQL Scripts, and any other supported objects.</p> <p>Choosing <i>External SQL Scripts</i> from the drop-down list enables you to represent SQL SELECT statements as synonyms for read-only reporting. A Synonym candidate can be any file that contains one (and only one) valid SQL Query and does not contain end-of-statement delimiters (";" or "/") and comments. For related information, see <i>Location of External SQL Scripts</i> in this chart.</p> <p>Depending on the adapter, you can further restrict your search by choosing check boxes for listed objects.</p>
Database selection	<p>To specify a database from which you can select a table or other object, do one of the following:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Check <i>Use current database</i> to use the database that has been set as the default database.</li> <li><input type="checkbox"/> Select a database from the <i>Select database</i> drop-down list, which lists all databases in the current DBMS instance.</li> </ul> <p>Before selecting a database, if <i>Use current database</i> is checked, uncheck it. (This does not apply to Informix SE, for which <i>Use current database</i> must be checked.)</p>

Parameter/Task	Description
Filter by owner/schema and object name	<p>Selecting this option adds the owner/schema and object name parameters to the screen.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Owner/Schema.</b> Type a string for filtering the selection, inserting the wildcard character (%) as needed at the beginning and/or end of the string. For example, enter:           <ul style="list-style-type: none"> <li><input type="checkbox"/> ABC% to select tables or views whose owner/schema begin with the letters ABC.</li> <li><input type="checkbox"/> %ABC to select tables or views whose owner/schema end with the letters ABC.</li> <li><input type="checkbox"/> %ABC% to select tables or views whose owner/schema contain the letters ABC at the beginning, middle, or end.</li> </ul> </li> <li><input type="checkbox"/> <b>Object name.</b> Type a string for filtering the procedure names, inserting the wildcard character (%) as needed at the beginning and/or end of the string. For example, enter:           <ul style="list-style-type: none"> <li><input type="checkbox"/> ABC% to select all procedures whose names begin with the letters ABC.</li> <li><input type="checkbox"/> %ABC to select all procedures whose names end with the letters ABC.</li> <li><input type="checkbox"/> %ABC% to select all procedures whose names contain the letters ABC at the beginning, middle, or end.</li> </ul> </li> </ul>

Parameter/Task	Description
Location of External SQL Scripts  Extension	<p>If you specify <i>External SQL Scripts</i> in the <i>Restrict object type</i> to field, these additional fields are displayed.</p> <p>The following standard naming conventions apply for UNIX, i5/OS IFS, and z/OS HFS:</p> <ul style="list-style-type: none"> <li>❑ In the <i>Location of External SQL Scripts</i> field, specify the physical directory location of the file that contains the SQL Query.</li> <li>❑ In the <i>Extension</i> field, enter the extension of the script files to filter the list of candidates.</li> </ul> <p>On i5/OS you can use alternative IFS naming conventions to access library members. The following entry illustrates this method:</p> <ul style="list-style-type: none"> <li>❑ In the <i>Location of External SQL Scripts</i> field, enter: <code>/QSYS.LIB/MYLIBRARY.LIB/MYSRC.FILE</code></li> <li>❑ The <i>Extension</i> is understood to be MBR. You can enter this value explicitly or leave the input box blank.</li> </ul> <p>During synonym generation, the adapter issues native API calls to obtain a list of elements in the select list and builds the Master File with a field for each element. The generated Access File references the location of the SQL script in the DATASET attribute, which contains the full path, including the file name and extension to the file containing the SQL Query. For example,</p> <pre>DATASET=/u1/home2/apps/report3.sql</pre> <p>When a WebFOCUS report is created, the SQL Query is used to access data.</p>
Select Application	Select an application directory. baseapp is the default value.

Parameter/Task	Description
Cardinality	<p>Select the <i>Cardinality</i> check box to reflect the current cardinality (number of rows or tuples) in the table during metadata creation. Cardinality is used for equi-joins. The order of retrieval is based on the size (cardinality) of the table. Smaller tables are read first.</p> <p>If the cardinality of the tables to be used in the application are dynamic, it may not be beneficial to choose this setting.</p>
With foreign keys	<p>Select the <i>With foreign keys</i> check box to include within this synonym every table related to the current table by a foreign key. The resulting multitable synonym describes all of the foreign key relationships for the table.</p>
Dynamic columns	<p>To specify that the Master File created for the synonym should not contain column information, select the <i>Dynamic columns</i> check box.</p> <p>If this option is selected, column data is retrieved dynamically from the data source at the time of the request.</p>
Prefix/Suffix	<p>If you have tables with identical table names, assign a prefix or a suffix to distinguish them. For example, if you have identically named human resources and payroll tables, assign the prefix HR to distinguish the synonyms for the human resources tables. Note that the resulting synonym name cannot exceed 64 characters.</p> <p>If all tables and views have unique names, leave prefix and suffix fields blank.</p>
Customize data type mappings	<p>To change the data type mappings from their default settings, select this check box. The customizable mappings are displayed.</p>
Overwrite existing synonyms	<p>To specify that this synonym should overwrite any earlier synonym with the same fully qualified name, select the <i>Overwrite existing synonyms</i> check box.</p>
Default synonym name	<p>This column displays the name that will be assigned to each synonym. To assign a different name, replace the displayed value.</p>

Parameter/Task	Description
Select tables	<p>Select tables for which you wish to create synonyms:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> To select all tables in the list, select the check box to the left of the <i>Default synonym name</i> column heading.</li> <li><input type="checkbox"/> To select specific tables, select the corresponding check boxes.</li> </ul>

### Reference: Synonym Creation Parameters for Stored Procedures

For data sources that support stored procedures, you can use a reporting tool to execute a procedure and report against its output parameters and answer set. Among the benefits of this method of executing a stored procedure are:

- The retrieval of output parameters (OUT parameters, and INOUT parameters in OUT mode) as well as the answer set. (Other methods of invocation retrieve only the answer set.)
- The ease with which you can process, format, and display output parameters and the answer set, using TABLE and other reporting tools.

The first step is to create a synonym for the stored procedure you wish to report against.

A synonym describes the parameters and answer set for the stored procedure.

An answer set structure may vary depending on the input parameter values that are provided when the procedure is executed. Therefore, you need to generate a separate synonym for each set of input parameter values that will be provided when the procedure is executed at run time. For example, if users can execute the stored procedure using three different sets of input parameter values, you need to generate three synonyms, one for each set of values. (Unless noted otherwise, input parameters refers to IN parameters and to INOUT parameters in IN mode.)

**Note:** If you know the internal logic of the procedure, and are certain which range of input parameter values will generate each answer set structure returned by the procedure, you can create one synonym for each answer set structure, and for each synonym simply provide a representative set of the input parameter values necessary to return that answer set structure.

A synonym includes the following segments:

- INPUT, which describes any IN parameters and INOUT parameters in IN mode.  
If there are no IN parameters or INOUT parameters in IN mode, the segment describes a single dummy field.
- OUTPUT, which describes any OUT parameters and INOUT parameters in OUT mode.

If there are no OUT parameters or INOUT parameters in OUT mode, the segment is omitted.

- ANSWERSET $n$ , one for each answer set.

If there is no answer set, the segment is omitted.

The following chart describes the parameters used to create the synonym.

<b>Parameter/Task</b>	<b>Description</b>
Restrict object type to	Select <i>Stored Procedures</i> .
Filter by owner/schema and object name  (for DB2, this applies to all platforms except i5/OS)	<p>Selecting this option adds the owner/schema and object name parameters to the screen.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <b>Owner/Schema.</b> Type a string for filtering the selection, inserting the wildcard character (%) as needed at the beginning and/or end of the string. For example, enter:           <ul style="list-style-type: none"> <li><input type="checkbox"/> ABC% to select tables or views whose owner/schema begin with the letters ABC.</li> <li><input type="checkbox"/> %ABC to select tables or views whose owner/schema end with the letters ABC.</li> <li><input type="checkbox"/> %ABC% to select tables or views whose owner/schema contain the letters ABC at the beginning, middle, or end.</li> </ul> </li> <li><input type="checkbox"/> <b>Object name.</b> Type a string for filtering the procedure names, inserting the wildcard character (%) as needed at the beginning and/or end of the string. For example, enter:           <ul style="list-style-type: none"> <li><input type="checkbox"/> ABC% to select all procedures whose names begin with the letters ABC.</li> <li><input type="checkbox"/> %ABC to select all procedures whose names end with the letters ABC.</li> <li><input type="checkbox"/> %ABC% to select all procedures whose names contain the letters ABC at the beginning, middle, or end.</li> </ul> </li> </ul>

Parameter/Task	Description
Library  Object Name (i5/OS only)	<p>To avoid the return of an extremely large and potentially unmanageable list, always supply a value for Library or Object Name:</p> <ul style="list-style-type: none"> <li>❑ <b>Library.</b> Type a string for filtering the Library (or DB2 Collection), inserting the wildcard character (%) as needed at the beginning and/or end of the string. For example, enter:           <ul style="list-style-type: none"> <li>❑ ABC% to select tables or views whose owner IDs begin with the letters ABC.</li> <li>❑ %ABC to select tables or views whose owner IDs end with the letters ABC.</li> <li>❑ %ABC% to select tables or views whose owner IDs contain the letters ABC at the beginning, middle, or end.</li> </ul> </li> <li>❑ <b>Object name.</b> Type a string for filtering the table, view, or object names, inserting the wildcard character (%) as needed at the beginning and/or end of the string. For example, enter:           <ul style="list-style-type: none"> <li>❑ ABC% to select all tables, views, or objects whose names begin with the letters ABC.</li> <li>❑ %ABC to select all whose names end with the letters ABC.</li> <li>❑ %ABC% to select all whose names contain the letters ABC at the beginning, middle, or end.</li> </ul> </li> </ul>
Select	Select a procedure. You can only select one procedure at a time since each procedure will require unique input in the Values box on the next synonym creation pane.
Name	The name of the synonym, which defaults to the stored procedure name.
Select Application	Select an application directory. baseapp is the default value.

Parameter/Task	Description
Prefix/Suffix	<p>If you have stored procedures with identical names, assign a prefix or a suffix to distinguish their corresponding synonyms. Note that the resulting synonym name cannot exceed 64 characters.</p> <p>If all procedures have unique names, leave the prefix and suffix fields blank.</p>
Overwrite existing synonyms	<p>To specify that this synonym should overwrite any earlier synonym with the same fully qualified name, select the <i>Overwrite existing synonyms</i> check box.</p>
Customize data type mappings	<p>To change the data type mappings from their default settings, select this check box. The customizable mappings are displayed. For information about them, see <i>Data Type Support</i> in the chapter for your adapter in the <i>Adapter Administration for UNIX, Windows, OpenVMS, i5/OS, and z/OS</i> manual.</p>

Parameter/Task	Description
Values	<p>Select the check box for every parameter displayed for the specified procedure.</p> <p>Note the following before you enter parameter values. If the procedure you selected has input parameters (IN parameters and/or INOUT parameters in IN mode), you will be prompted to enter values for them. However, the need for an explicit Value entry depends on the logic of the procedure and the data structures it produces. Therefore, while you must check the parameter box, you may not need to enter a value. Follow these guidelines:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Explicit input values (and separate synonyms) are required when input parameter values cause answer sets with different data structures, which vary depending on the input parameters provided.</li> <li><input type="checkbox"/> Explicit input values are not required when you know the internal logic of the procedure, and are certain that it always produces the same data structure. In this situation, only one synonym needs to be created and you can leave the Value input blank for synonym creation purposes.</li> </ul> <p>If a Value is required, enter it without quotation marks. Any date, date-time, and timestamp parameters must have values entered in an ISO format. Specify the same input parameters that will be provided when the procedure is executed at run time if it is a procedure that requires explicit values.</p>

### **Example: Synonym for Microsoft SQL Server Stored Procedure CustOrders**

The following synonym describes a Microsoft SQL Server stored procedure with one input parameter, one output parameter, and one answer set containing four variables.

The Master File for the synonym is:

```
FILENAME=CUSTORDERS, SUFFIX=SQLMSS, $
SEGMENT=INPUT, SEGTYPE=S0, $
  FIELDNAME=@CUSTOMERID, ALIAS=P0001, USAGE=A5, ACTUAL=A5,
  MISSING=ON, ACCESS_PROPERTY=(NEED_VALUE), $
SEGMENT=OUTPUT, SEGTYPE=S0, PARENT=INPUT, $
  FIELDNAME=@RETURN_VALUE, ALIAS=P0000, USAGE=I11, ACTUAL=I4, $
SEGMENT=ANSWERSET1, SEGTYPE=S0, PARENT=INPUT, $
  FIELDNAME=ORDERID, ALIAS=OrderID, USAGE=I11, ACTUAL=I4, $
  FIELDNAME=ORDERDATE, ALIAS=OrderDate, USAGE=HYYMDs, ACTUAL=HYYMDs,
  MISSING=ON, $
  FIELDNAME=REQUIREDDATE, ALIAS=RequiredDate, USAGE=HYYMDs,
  ACTUAL=HYYMDs, MISSING=ON, $
  FIELDNAME=SHIPPEDDATE, ALIAS=ShippedDate, USAGE=HYYMDs,
  ACTUAL=HYYMDs, MISSING=ON, $
```

The Access File for the synonym is:

```
SEGNAME=INPUT, CONNECTION=ITarget, STPNAME=Northwind.dbo.CustOrders, $
SEGNAME=OUTPUT, STPRESORDER=0, $
SEGNAME=ANSWERSET1, STPRESORDER=1, $
```

### **Procedure: How to Refresh Synonyms**

Refreshing a synonym enables you to update field information while preserving the original synonym title, description, usage, virtual field, and DBA information. The action also synchronizes the Master File with the table on which the synonym is based.

You can refresh synonyms from either the Data Servers area under the WebFOCUS Environments folder or from the Projects area.

- 1.** Right-click a synonym (Master File).
  - In the WebFOCUS Environments folder, Master Files are listed within an application in the Data Servers, Applications area.
  - In the Projects area, Master Files are listed in a Master Files folder under a project name.
  
- 2.** Choose *Refresh Synonym* to recreate the Master File.

**Note:** Refresh is not applicable to Cube data sources at the current time, and not supported for FOCUS files.

**Procedure: How to Delete Synonyms**

Master Files and Access Files are removed from the server when you delete a synonym.

- 1.** Right-click the synonym you want to delete and select *Delete*.

You are asked to confirm the deletion.

- 2.** Click Yes to delete or No to cancel.

**Procedure: How to View or Edit Synonym Code**

This feature is available in the Projects area and in the Data Servers area under the WebFOCUS Environments folder.

- 1.** Right-click a synonym (Master File).

- In the Projects area, Master Files are listed in a Master Files folder under a project name.
- In the WebFOCUS Environments folder, Master Files are listed within an application in the Data Servers Applications area, or in the Data folder under the Cataloged Path folder if the server is set up to use EDAPATH (also known as Cataloged Path).

2. Choose one of the following:

**In the Projects area:**

- Edit in Synonym Editor* opens the file in the Synonym Editor. This is the default option if you double-click the Master File or synonym.
- Edit in Text Editor* displays code in the text editor.
- Edit in registered tool* appears if an external tool is registered through Windows Explorer. The registered tool name is Notepad, WordPad, and so on.

**In the WebFOCUS Environments area:**

- Edit in Synonym Editor* opens the file in the Synonym Editor. This is the default option if you double-click the Master File or synonym.
- Edit in Text Editor* displays code in the text editor.
- Edit in registered tool* appears if an external tool is registered through Windows Explorer. The registered tool name is Notepad, WordPad, and so on.
- Export to Sources* creates an extract file containing WebFOCUS metadata that is used for import with Ascential's MetaStage software. This option is enabled if the Ascential MetaStage software is installed on your PC.

**Note:** By default, you also see Access (.acx) Files in the Master Files folder.

If the server is using EDAPATH, these files are visible under the Cataloged Path/Data folder. To view Access File code, right-click the Access (.acx) File and then choose *Open* or *Edit Access File As Text*.

**Procedure: How to View and Modify the Properties of a Synonym**

Right-click a synonym in the Explorer window and select *Properties*. The Properties dialog box displays general file information, such as location, size, and other attributes.

The Projects area has options for Attributes. Check one of the following:

- Read-only**, which secures the file so you cannot edit or delete it.
- Encrypted**, which encrypts the contents of the file if the file has DBA security.

## **Using the Reporting Server Web Console for Data Access and Synonym Preparation**

### **How to:**

Access the Reporting Server Web Console

A server administrator, or an application administrator who has been granted these privileges, can configure and manage WebFOCUS Reporting Servers through the Reporting Server Web Console. You can use the Server Console as an alternative to the Developer Studio tools to configure adapters, add remote servers, and create synonyms. In addition, many other configuration options are available through the Server Console. For a full understanding of configuration options and server capabilities, see the Server Console help system or the following manuals: *Server Administration for UNIX, Windows, OpenVMS, i5/OS, and z/OS* and *Adapter Administration for UNIX, Windows, OpenVMS, i5/OS, and z/OS*.

### **Note:**

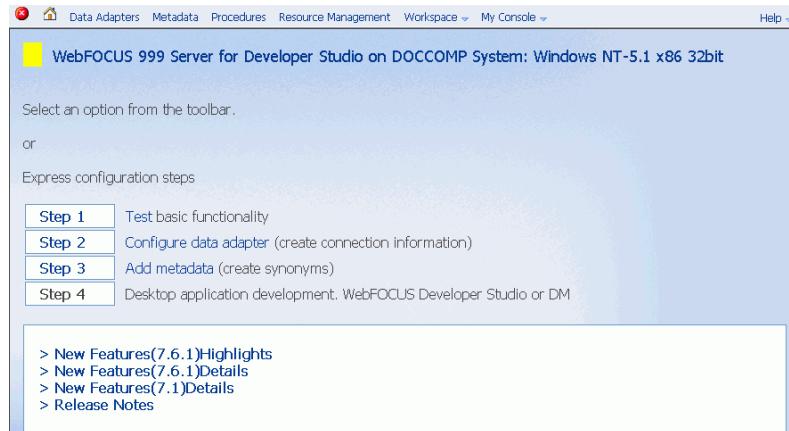
- This console is sometimes referred to as the Web Console or the Reporting Server Console.
- For Developer Studio installations that allow stand-alone development, the local, default WebFOCUS Reporting Server normally runs with security OFF, and the user who installed Developer Studio is the default administrator.

## **Procedure: How to Access the Reporting Server Web Console**

1. Open the Reporting Server Web Console from Developer Studio by selecting its icon from the Object Explorer toolbar or opening the following page in a Web browser:

`http://hostname:port#/webconsole`

The Server Console opens in your Web browser.



2. To add an adapter through the Server Console, click *Data Adapters* on the menu bar. On the expanded menu bar, click *New Adapter*, expand folders on the right, and click your adapter type to bring up a form for adding the data adapter.
3. To create a synonym through the Server Console, click *Metadata* on the menu bar. On the expanded menu bar, click *New Synonym*, select the remote server or adapter on the right, and complete the forms that follow.
4. To access the Server Console help, click *Help* on the menu bar and choose *Contents and Search*. Expand the *Adapters* folder in the Table of Contents, and review the information for your adapter.

**Note:** You may need to use Internet Explorer to properly view the help.



# 2

# Exploring Your WebFOCUS Development Environment

The WebFOCUS development environment is based on the familiar Microsoft Windows Explorer tree structure. This integrated interface provides the development tools that enable you to quickly build and deploy Web-based reporting applications.

**Topics:**

- Development Environment
- Development Tools

## Development Environment

### In this section:

QuickLinks

### How to:

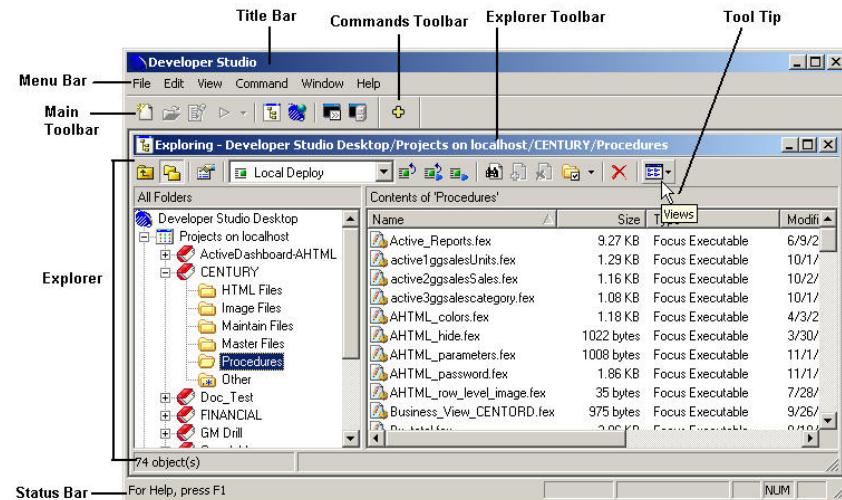
Add or Modify External Tools

### Reference:

Main Toolbar

Commands Toolbar

The Explorer is the main window from which all tools and facilities are accessed.



The Explorer contains the following features:

Feature	Description
<b>Menu Bar</b>	Displays pull-down menus; menus and options are context-sensitive and are determined by the active window or selected object. Depending upon your location in the Explorer, certain menu options may be inactive.

<b>Feature</b>	<b>Description</b>
<b>Main Toolbar</b>	Contains buttons that provide quick access to commonly performed functions. These buttons always appear on the toolbar, but their behavior is determined by the active window and the selected object. Depending upon your location in the Explorer, certain toolbar buttons may be inactive. For details, see <a href="#">Main Toolbar</a> on page 91.
<b>Commands Toolbar</b>	Provides quick access to any external program added in the External Tools tab of the Developer Studio Options dialog box. When you add an external program, it appears as an additional icon on the Commands Toolbar. Select the icon from the Commands Toolbar to launch the external tool. For details, see <a href="#">Commands Toolbar</a> on page 93.
<b>Explorer Toolbar</b>	Contains buttons to perform the available operations for the selected object and area in the Explorer window. Depending upon the object you select, certain toolbar buttons may be inactive or unavailable. For details, see <a href="#">Introducing WebFOCUS and Developer Studio</a> on page 13.
<b>Title Bar</b>	The active window's title bar has information for the specific window or tool.
<b>Tool Tip</b>	Small descriptive text labels appear when the mouse pointer rests on a toolbar button.
<b>Status Bar</b>	Displays current status of WebFOCUS (either idle or busy executing a report or other procedure) and a description of the Main toolbar buttons; click and hold a button to display a description.

**Reference:** [Main Toolbar](#)

The Main toolbar contains buttons that provide quick access to commonly performed functions. These buttons always appear on the toolbar. However, the behavior they initiate varies based on the active window and the object selected. Therefore, depending upon your location in the project, certain toolbar buttons may be inactive.

The following table gives a brief description of the buttons on the Main toolbar.

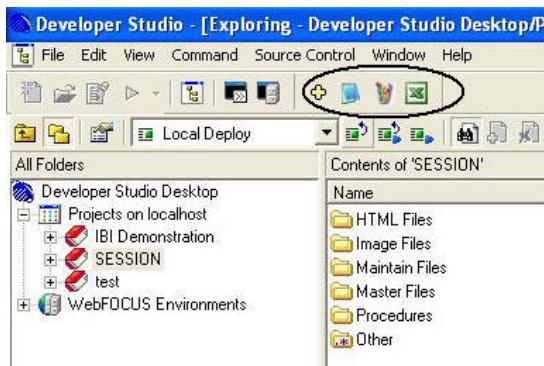
Button	Operation
	Enables you to create a new object; the object type is determined by the selected folder or item. For example, when the Projects on localhost folder is selected, the Create a Project dialog box opens; when the Master Files folder is selected, the Add Master File dialog box opens.
	Opens the appropriate tool to graphically edit the selected object. For example, if a Master File is selected, the Synonym Editor opens.
	Opens the Text Editor and enables you to edit the FOCUS commands for the selected object.
	<p>Executes the selected object (FOCUS procedure, HTML file). Multi-selected objects are executed in the order in which they are selected.</p> <p>To run multi-selected objects, select <i>Window</i>, then <i>Options</i>, and in the General tab of the Developer Studio Options dialog box which opens, select the <i>Use new browser to execute</i> option.</p> <p><b>Note:</b> A special pointer appears whenever you execute a procedure and are still able to perform another task. For example, if you execute a report that takes a while to run, your pointer may appear as both an hourglass and an arrow pointer while you are in the Report Painter. You are free to continue to style or format your next report, or perform tasks from the Projects folder while a previous request is being processed. However, you cannot run your next request until the previous one has completed processing.</p> <p>You may also turn on the Message Viewer which enables you to see messages including error messages, informational messages, and Dialogue Manager commands. These messages appear in a separate frame below the report output and serve as a good resource for debugging an application.</p>
	Opens a new Explorer window.
	Opens the WebFOCUS Maintain Development Environment (MDE). This is only available in the Developer Studio edition.
	Opens the Command Console, where you can enter commands and see the results of your queries. See <i>Using the Command Console</i> in the <i>Developing Reporting Applications</i> manual for more information.

Button	Operation
	Opens the WebFOCUS Reporting Server Console used for project development. This is where you configure the local server for creating Developer Studio applications. If you are performing remote project development, the Server Console for the remote server will be launched. For more information, see <a href="#">Introducing WebFOCUS and Developer Studio</a> on page 13.

### Reference: Commands Toolbar

You may edit the list of registered external tools by clicking the Add or Modify External Tools icon, located on the Commands Toolbar. The Commands Toolbar enables you to access any external program added in the External Tools tab of the Developer Studio Options dialog box. When you add an external program, it appears as an additional icon on the Commands Toolbar. Select the icon from the Commands Toolbar to launch the external tool.

An example of the Commands Toolbar with external tools (Notepad, Paint, and Excel) is shown in the image below.



### Procedure: How to Add or Modify External Tools

- From the Developer Studio Explorer, select *Commands Toolbar* from the View menu.

**Note:** The Commands Toolbar is not visible by default.

The Commands Toolbar appears next to the Main toolbar, displaying the Add or Modify External Tools icon. You may move, dock, or float this toolbar.

- Click the Add or Modify External Tools icon .

The Developer Studio Options dialog box opens at the External Tools tab.

3. Type the *Tool title* and enter the *Tool path*, or click the Browse button, to find the selected program.

4. Click *OK* to close the Developer Studio Options dialog box.

The external tool appears as an additional icon on the Commands Toolbar.

5. Select the added program icon from the Commands Toolbar to launch the external tool.

**Note:** The external program added is also available from the Command menu.

**Tip:** You may also access the Developer Studio Options dialog box by selecting *Options* from the Windows menu. Click the *External Tools* tab to see the list of registered external tools.

## QuickLinks

The QuickLinks dialog box opens by default when you launch Developer Studio. This dialog box provides links to the most popular Developer Studio tools, enabling you to launch them more quickly.



The links to tools are grouped into the following categories:

- ❑ **Help.** Launches Developer Studio help or the Information Builders online library.

- ❑ **Environment.** Launches tools that allow you to configure WebFOCUS environments, create new projects, start Maintain, and open new Object Explorer windows, the Command Console, or the WebFOCUS Reporting Server console.
- ❑ **Metadata.** Launches the Create Synonym Wizard, Synonym Editor, or Update Assist tool.
- ❑ **Reports and Applications.** Launches any tools that enable you to create new reports and graphs.
- ❑ **Recent Files.** Launches the procedure you have accessed most recently.

You can view bubble help for each link by positioning your mouse pointer over it. You can also see a description of the task by clicking the question mark icon. The arrows to the left of the categories (Help, Environment, Metadata, and so on) expand and collapse the items in that category.

If you close the QuickLinks dialog box and need to access it again, select *QuickLinks* from the View menu (when you are in the Developer Studio Explorer).

## Development Tools

<b>In this section:</b>	
Project Wizard	USE Tool
Synonym Editor	Impact Analysis
Create Synonym Tool	Execute Wizard and Include Tool
Synonym Wizard	Dimensions Tool
Dimension Builder	HTML Composer
Component Connector Toolbar	Document Composer
Report Painter	Match Wizard
SQL Report Wizard	Engine Tool
Graph Assistant	OLAP Graphical Tools
Advanced Graph Assistant	Text Editor
Define Tool	SQL Editor
Join Tool	Deploy Wizard
Set Tool	Command Console
Allocation Wizard	WebFOCUS Reporting Server Console

Developer Studio offers a selection of graphical development tools for building Web-based reporting applications. These tools can be accessed from the Projects on localhost folder for local development and deployment to the Web. A subset of the tools can also be accessed from the WebFOCUS Environments folder for development or editing directly on the WebFOCUS Reporting Server and the Web Server.

Below are some of the tasks and tools that you can use in Developer Studio.

### **Creating your local project**

The Project Wizard, which you can access only from the Projects area, creates an application control file and defines search paths for additional project resources. See *Project Wizard* on page 99.

## Creating data source descriptions

Use one or more of the following:

- ❑ **Create Synonym Tool** creates synonyms on the WebFOCUS Reporting Server if they do not already exist. You can also create synonyms using the Server Console. For details, see the *Describing Data With Graphical Tools* manual.
- ❑ **Synonym Wizard** creates synonyms for a z/OS platform. For details, see the *Describing Data With Graphical Tools* manual.

## Building report procedures

Use one or more of the following:

- ❑ **Procedure Viewer** is a graphical presentation of components that make up a procedure.
- ❑ **Component Connector Menu** displays available procedure components and provides access to graphical tools such as the text editor which you can use to create components. See *Component Connector Toolbar* on page 102.
- ❑ **Report Painter** creates complex, styled reports in a WYSIWYG environment. See *Report Painter* on page 104.
- ❑ **SQL Report Wizard** assists you with SQL passthru which allows you to execute SQL code that retrieves data from an RDBMS. See *SQL Report Wizard* on page 108.
- ❑ **Graph Assistant** transforms almost any type of data into a graph that you can customize to suit your needs. See *Graph Assistant* on page 109.
- ❑ **Advanced Graph Assistant** is a powerful graph tool that provides a user-friendly, intuitive interface with advanced functionality for creating and editing basic and complex graphs.
- ❑ **Define Tool** creates virtual fields that are evaluated before the report is executed. See *Define Tool* on page 112.
- ❑ **Join Tool** defines a relationship between two or more data sources so that a report can use data from all of them at once. See *Join Tool* on page 113.
- ❑ **HTML Composer** creates reporting procedures and highly refined HTML pages where procedures can be run in a single process. See *HTML Composer* on page 118.
- ❑ **Document Composer** creates compound reports and coordinated compound reports in one integrated process. See *Document Composer* on page 119.
- ❑ **Match Wizard** to create logical expressions. See *Match Wizard* on page 120.
- ❑ **Engine Tool** exposes the FOCUS ENGINE SET commands and enables you to enter ENGINE commands or connection attributes, and override parameters. See *Engine Tool* on page 121.

- ❑ **Dialogue Manager** allows you to control the flow of your application with the use of variables. For more information, see *Managing Flow of Control in an Application* in the *Developing Reporting Applications* manual.
- ❑ **Execute Wizard and Include Tool** call other procedures from the current procedure. See *Execute Wizard and Include Tool* on page 117.
- ❑ **Dimensions Tool** creates temporary OLAP hierarchies for a procedure. See *Dimensions Tool* on page 118.

### **Creating launch pages**

Developer Studio creates launch pages that prompt for values.

**HTML Composer** creates reporting procedures and highly refined HTML pages from which the procedures can be run, in a single process. See *HTML Composer* on page 118.

### **Performing iterative OLAP analysis**

Use the following:

- ❑ **OLAP Control Panel** manipulates multi-dimensional data for analysis.
- ❑ **OLAP Selections Panel** provides quicker ad hoc data selection, graph transformation, and drill downs on measures. See *OLAP Graphical Tools* on page 121.

### **Deploying projects to the Web**

**Deploy Wizard** partitions and copies files to the specified WebFOCUS Reporting Server and Web server. You can only access this option from the Projects folder. See *Deploy Wizard* on page 125.

### **Coding project components**

Use the following:

- ❑ **Text Editor** enables you to create, view, and edit source code for procedures, Master and Access files, and other types of project files. This tool is especially useful for writing code that does not have a corresponding graphical tool, such as Dialogue Manager code. See *Text Editor* on page 123.
- ❑ **SQL Editor** allows you to code SQL Passthru and highlights any SQL commands within the code. See *SQL Editor* on page 124.

### **Managing your environment**

Use one or more of the following:

- ❑ **Set Tool** resets parameters to change aspects of WebFOCUS default behavior that affect both the local development and deployment environments. See *Set Tool* on page 114.

- ❑ **Allocation Wizard** assigns temporary names and storage locations to files created and used by WebFOCUS. See [Allocation Wizard](#) on page 115.
- ❑ **Use Tool** identifies a FOCUS data source. See [USE Tool](#) on page 116.
- ❑ **Impact Analysis** to analyze Master Files and fields and determine if they are used in WebFOCUS procedures. See [Impact Analysis](#) on page 117.

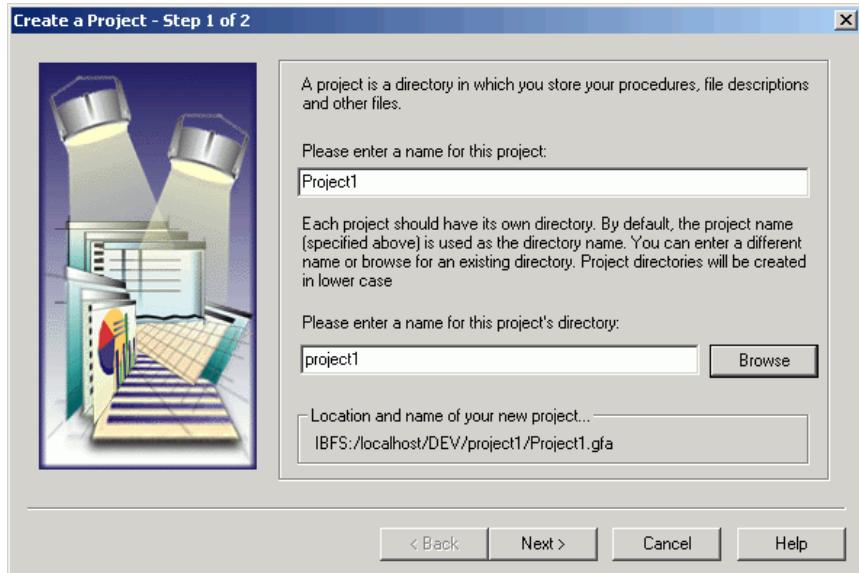
### Managing communication with the server

- ❑ **Command Console** enables you to issue commands to a WebFOCUS Reporting Server. See [Command Console](#) on page 127.
- ❑ **WebFOCUS Reporting Server Console** remotely manages your Reporting Server environment. You can view server and agent status and statistics and manage agent connections. See [WebFOCUS Reporting Server Console](#) on page 127.

## Project Wizard

The Project Wizard enables you to name the project, designate a directory for it, and optionally add other directory paths to data sources from which the project can retrieve information, or paths to other resources.

**Note:** Projects directories are created in lowercase.



When you have completed the Project Wizard, the new project is added as a node in the Explorer under Projects on localhost.

For details about this tool, see *Creating a Reporting Application* in the *Developing Reporting Applications With Graphical Tools* manual.

## Synonym Editor

The Synonym Editor enables you to view and edit existing synonyms. This tool generates the data description language required to read the data.

The Synonym Editor supports hierarchical data and the Financial Report Painter uses this data to create a tree hierarchy.

For details about the Synonym Editor, see *Using the Synonym Editor* in the *Describing Data With Graphical Tools* manual.

For more information about the Financial Report Painter, see *Creating Reports With Financial Report Painter* in the *Creating Reports With Graphical Tools* manual.

## Create Synonym Tool

Whether you are developing projects in the local server environment (the Projects on localhost area), or running procedures from the Data Servers area under WebFOCUS Environments, you will need to ensure that the WebFOCUS Reporting Server has the data source descriptions or synonyms it requires to locate and interpret your data sources. You can create synonyms using the Create Synonym tool.

You must configure a data adapter before you can create a synonym. You may configure adapters with the Create Synonym Tool. For details about this tool, see *Accessing Data and Creating Synonyms* in the *Describing Data With Graphical Tools* manual.

## Synonym Wizard

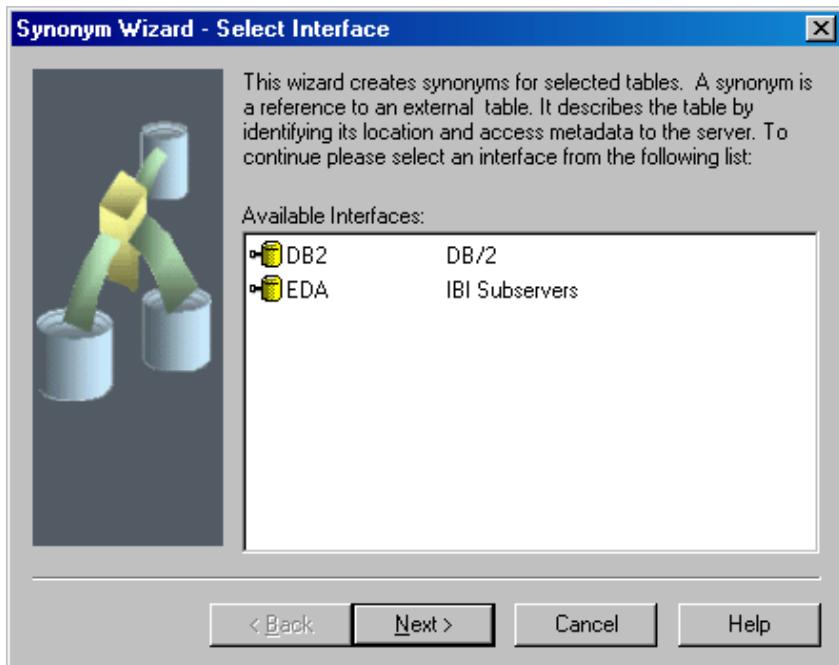
For z/OS platforms, the Synonym Wizard is used to create synonyms when reporting against other remote servers (or subservers) that are configured on the target server. You can also create synonyms against DB2, the only relational data source supported on MVS.

You can use the Synonym Wizard to create a synonym for a data source on the WebFOCUS Reporting Server, based on the native schema that resides with the data. If the remote server is configured as a subserver to a hub server, the Synonym Wizard can generate a synonym on the hub server, including an Access File that identifies the location of the data on the subserver.

The Synonym Wizard guides you through the creation process for one or more synonyms. The synonyms are created on the WebFOCUS Reporting Server in the current application. The new synonym appears in the Master Files folder from which the wizard is launched.

**Note:** For FOCUS data sources, WebFOCUS uses the original Master Files stored on the server, therefore no synonyms are required.

The wizard consists of panels beginning with one shown below, in which you select the relational data source for which you want to generate a synonym.

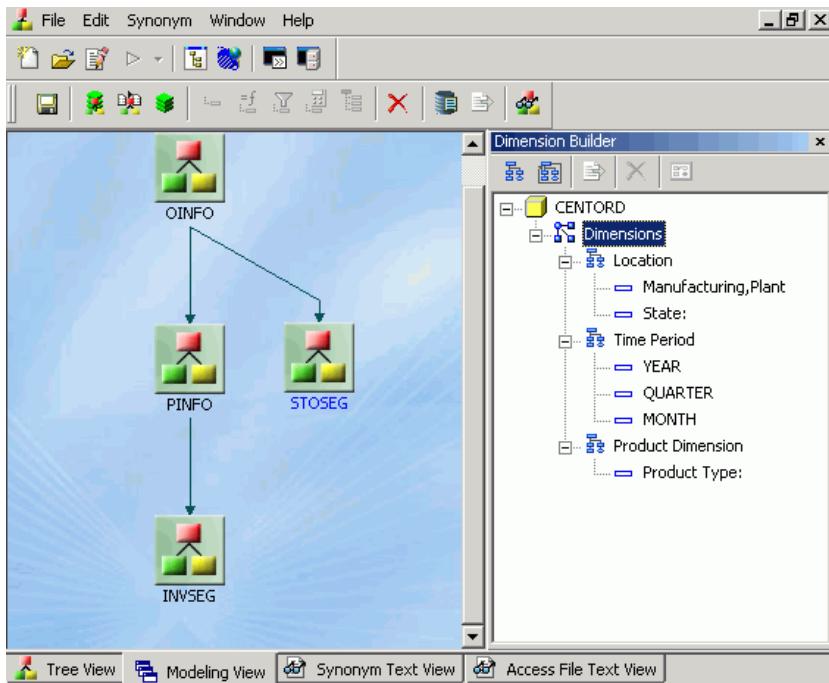


For details about this tool, see *Accessing Data and Creating Synonyms* in the *Describing Data With Graphical Tools* manual.

## Dimension Builder

The Dimension Builder is a tool that enables you to define dimensions in your Master Files to support multi-dimensional OLAP analysis.

Working with relational tables or FOCUS data sources, the Dimension Builder creates a virtual join across tables or segments within a single Master File structure. You can then drag and drop fields from the "join" pane into the adjacent Dimensions pane, creating a multi-dimensional hierarchy, like the one in the following illustration.

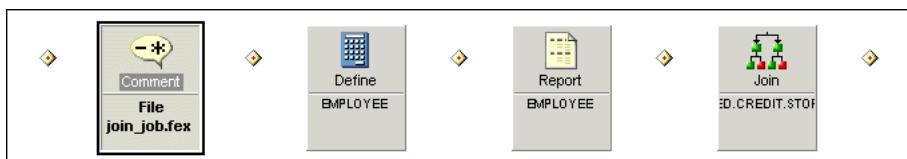


The Dimension Builder is available for local and server-based development.

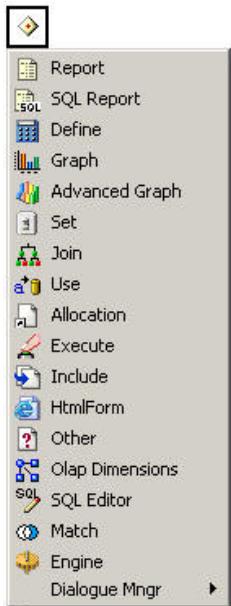
For details about this tool, see *Defining Dimensions for OLAP Analysis in Using the Synonym Editor* in the *Describing Data With Graphical Tools* manual.

## Component Connector Toolbar

The Component Connector menu, which appears in the Procedure window, enables you to create components that make a procedure executable. A Comment component is displayed by default. A procedure can include one or a combination of components, as illustrated in the following window:



Open the Component Connector toolbar by clicking one of the yellow diamonds:



As you add components, the Procedure window displays an icon that represents the component. Each icon on the Component Connector toolbar launches either a graphical tool or the text editor.

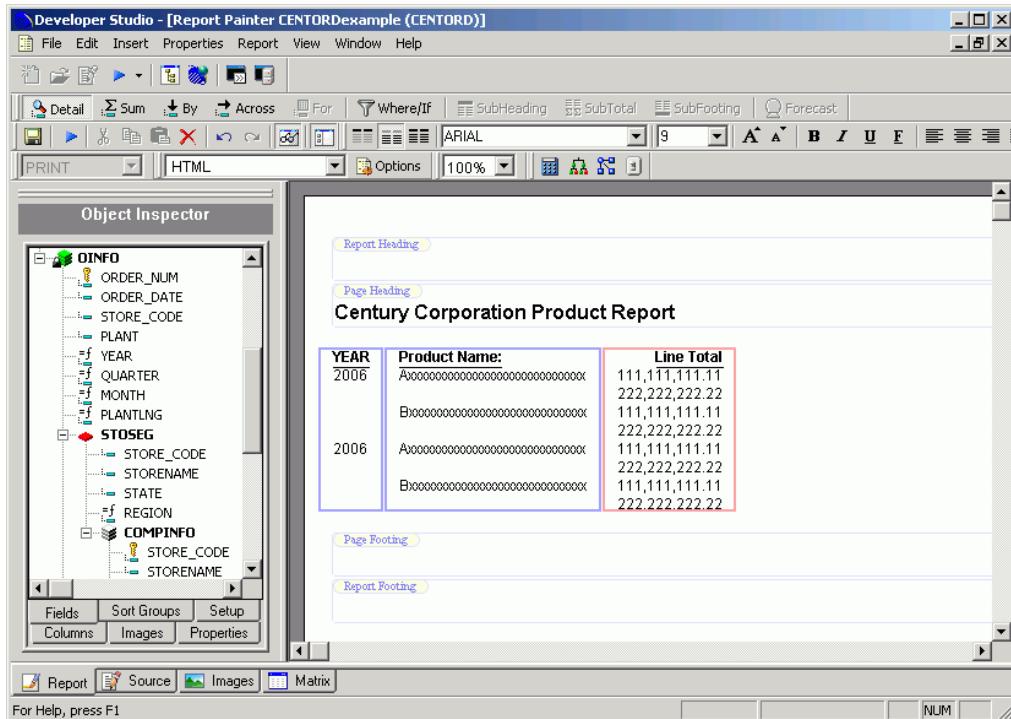
You can check components in order to locate errors. Each component tool includes a Check button that checks the syntax of the code against the server.

The options available in the Component Connector menu are also available in the Task Viewer toolbar and in the Insert menu.

For details about this tool, see *Creating a Reporting Procedure* in the *Developing Reporting Applications With Graphical Tools* manual.

## Report Painter

The Report Painter provides a graphical representation of the report you are creating.



The Report Painter offers great flexibility in how you can:

- Display and sort data.
- Select records.
- Include totals, subtotals, column calculations, heading, footings, and images.
- Format columns.
- Style fonts, colors, and grids.
- Add drill-downs to detailed reports and URLs.
- Save output in many types of formats for display and reuse.

For details about these and many other features, see *Creating Reports With the Report Painter* in the *Creating Reports With Graphical Tools* manual.

The following list highlights features that extend your reporting capabilities:

- ❑ **Formatting and styling capabilities.** You can:
  - ❑ Drag the column border to the desired width.
  - ❑ Add a border to an entire report, a column, or any object area (for example, Page Heading, Page Footing, Subheading, Subfooting). You can add borders in a variety of line styles, widths, and colors.
  - ❑ Style the background color for an entire report, including all column titles and all data components. You can also specify a background color for individual columns and alternating rows.
  - ❑ Apply a page color. The report on the page inherits the page color.
  - ❑ Insert the current page number and total page count for a report as embedded fields in a report heading or footing.
  - ❑ Insert a spot marker. A spot marker divides text in a heading or footing into separate items. You can then individually position and style these items.
  - ❑ Align decimal points. You can align decimal points when the displayed data has a varying number of decimal places.
  - ❑ Insert the current date. You can insert the current date as an embedded field in any object area (for example, Page Heading, Page Footing, Subheading, Subfooting) in the Report Painter. Once the date is inserted, you can justify, position, and change the font of the date field.

You can also specify the date format and a display format for the time. For more information, see *Assigning Field Formats* in the *Creating Reports With Graphical Tools* manual.

- ❑ Select a column component (Title, Data, or Title and Data) and apply styling options (font and font color, grid, border, or background color), using the Style tab on the Field Properties dialog box. In addition, you can create a condition and apply to it any style available on the Style tab.
- ❑ Copy an existing drill-down component to a column component, using the Drill Down tab on the Field Properties dialog box. You can also open a child report from this tab for viewing or modification in a new instance of Report Painter.
- ❑ Remove an underline from a column title on a report, using the General tab on the Field Properties dialog box.

- ❑ Enter replacement text using the Features tab. The Features tab on the Report Options dialog box features a Report Title input field. The text you enter into this input field replaces the default text in the Internet Explorer title bar when you run the report in HTML format.

For Excel report formats, you can enter a worksheet title in the Customize worksheet title input field of the Format tab. The text in the Customize worksheet title input field replaces the default Worksheet tab text in Excel 2000.

- ❑ Use the Range option in the Variable Editor dialog box. You can specify a range of values instead of a list of acceptable values when you access the Variable Editor dialog box.
- ❑ Use the Select Format option. The Report Options dialog box provides a Select Format drop-down list that enables you to specify output formats such as HTML, HTML Table, AHTML, PDF, PS, Exl2K, Exl2K Formula, Exl2k Pivot, Exl97, Default, and User.
- ❑ Use shading patterns and scaling options to improve data visualization. Data visualization is supported for PDF and PS formats. Although the color option on the Data Visualization dialog box is the default for HTML, PDF, and PS formats, you can select different shading patterns for PDF and PS formats. The shading patterns make graphs in black and white reports more readable.

There are two options for specifying relative bar graph scaling for multiple report columns under a common Across sort field to which data visualization is applied. Use the Uniform scale option if you want each vertical bar graph to be scaled based on the minimum and maximum values of all values compiled from each Across column. Use the Distinct scale option to specify that each vertical bar graph should be scaled based on the distinct minimum and maximum values for each Across column.

- ❑ Apply an external Cascading Style Sheet (CSS) to an HTML report. The Style tab features a Style File Selection button that allows you to apply an external Cascading Style Sheet to an HTML report. You can also assign a Cascading Style Sheet class to a report object in the StyleSheet.
- ❑ **WYSIWYG environment.** The Report Painter window displays the actual position of columns that have been wrapped, truncated, or set to maximum or minimum column width.
- ❑ **Graphical User Interface (GUI).** You can align embedded fields in object areas (Page Heading, Page Footing, Subheading, Subfooting) with report columns.

**Note:** This feature is available only for HTML reports.

You can:

- ❑ Copy style characteristics from one column to other columns by using the Match All Styles button on the Font toolbar. You can copy font, grid, background color, conditional styling, or all of these characteristics.
- ❑ Launch procedure components from the Setup toolbar in the Report Painter. The Setup toolbar lists the components that precede the report component. Click the component to access the appropriate tool (Define, Join, or Dimension).
- ❑ View the Master File structure (segments or fields) from the Fields tab in the Object Inspector. You can drag fields from this tab to the Report Painter window. If you drag a segment, all the fields in the selected segment are added to the report.
- ❑ View all the parts of the expression as you build it. With the Expression Builder, drag and drop the field in the expression and select the logical relation and comparison type from drop-down lists.
- ❑ **Handling of images.** The Report Painter:
  - ❑ Supports layering for the display of images with other report components.
  - ❑ Tiles a background image instead of enlarging the image to fit the background.
- ❑ **General functionality.** The Report Painter:
  - ❑ Allows you to save a report from the Save button on the General toolbar. The Save button saves all the components in the procedure, not just the report component.
  - ❑ Allows a developer to assign a variable as the display format. This feature enables a user to select the report's output format.
- ❑ **Calculated trends and predicted values.** You can calculate trends in data and predict values beyond the range of values stored in the data source with the Forecast feature. The Forecast feature uses averages, or a linear regression line, to distinguish trends and predict values. This is useful for predicting values that may occur beyond the current data set.
- ❑ **Apportioned numeric data in tabular reports.** You can group numeric data into any number of tiles (percentiles, quartiles, deciles, and so on) in tabular reports. For example, you can group student test scores into deciles to determine which students are in the top ten percent of the class.

Grouping is based on the values in the selected vertical (BY) sort field and is apportioned as equally as possible into the number of tile groups you specify.

- ❑ **Navigation of sort groups from a table of contents.** You can add multiple BY fields to an HTML Table of Contents (TOC). In the previous release, you could only sort on the highest level BY field in a single request. With the implementation of this multi-level feature, the TOC option is available when you right-click any BY field in your report.

For this feature to be useful, the report must contain at least one vertical sort (BY) field. If you include more than one sort field in a report, the hierarchy is determined by the order in which the fields are specified in the request. The TOC displays, as hyperlinks, all values of the first (highest level) vertical sort field, as well as the values of any lower level BY fields that you designate for inclusion. Unless otherwise specified in the request, a page begins when the highest level sort field changes.

The TOC itself is an object that appears as an icon in the upper left corner of the report, or as one or more drop-down lists in a heading or footing.

- ❑ **Check button to run procedures against the default server.** The Check button appears in the following tools: Define, Set, Use, and Allocation Wizard. When you click the Check button, the current procedure is run against the default server. A dialog box opens that displays the component's code, and either an error message or text stating that no error exists.

For more information about the Report Painter, see *Creating Reports With the Report Painter* in the *Creating Reports With Graphical Tools* manual.

## SQL Report Wizard

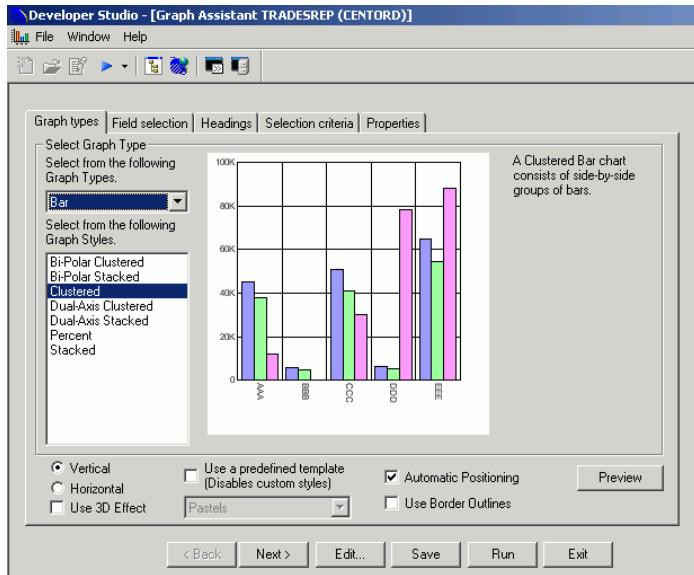
The SQL Report Wizard assists you with SQL passthru, which allows you to execute SQL code that retrieves data from an RDBMS. You can use the resulting extract file in the Report Painter or the Graph Assistant. The supported engines are DB2, DB2 for AS/400, Microsoft SQL Server, Oracle, Sybase, and Teradata.

The SQL Report Wizard is available throughout all development areas of Developer Studio: Projects, Data Servers, and Managed Reporting. When working in Managed Reporting, the tool enables administrators to use SQL in Standard Reports available in the Domain or use procedures that reside on the WebFOCUS Reporting Server.

For more information, see the *Developing Reporting Applications With Graphical Tools* manual.

## Graph Assistant

The Graph Assistant provides an easy way to transform almost any type of data into an effective graph that you can customize to suit your needs. Working through the tabs of the Graph Assistant, you will see the many features available when creating a graph.



From the tabs in the Graph Assistant, you can:

- ❑ **Select a graph type.** All of the basic graph types are offered (line, bar, pie or scatter) with many variations on each type.
- ❑ **Select X- and Y-axis values.** Add fields to your report to designate the values for the X- and Y-axis, and select a detailed or summarized display of data.
- ❑ **Define parameters for your data.** Include record selection criteria that your data must satisfy before being included in the graph.
- ❑ **Apply drill-down capability and conditional styling.** Drill-down to a more detailed report or a URL; apply conditional styling to highlight specific data in a graph.
- ❑ **Add headings, footings, and graphs titles.** Add and position headings, footings, and graph titles.
- ❑ **Create multiple graphs.** Select a second horizontal (X-axis) category to generate multiple graphs. Multiple graphs can be displayed in an HTML table or merged into a single graph.
- ❑ **Define graph properties.** Define properties for the graph, legend properties, axis labels, graph colors, grid lines and other display elements.

- ❑ **Display missing data values in a graph.** Previously missing data was displayed as zero. You can display missing data as zero, a gap, dotted line to zero, or an interpolated dotted line.
- ❑ **Customize the fonts in your graph.** You can select the size, style, color, justification, and rotation for data and label text on the X- and Y-axis, legend text, and heading text.
- ❑ **Temporarily hide the display of a Y-axis field.** This is useful when you want to temporarily take out one field in the graph, while retaining all the properties of the current graph.
- ❑ **Save graph output to multiple format.** You can save graph output to PNG, SVG, GIF, and JPEG formats.

The Graph Assistant is available for local and server-based development.

For details about this tool, see *Creating a Graph With Graph Assistant* in the *Creating Reports With Graphical Tools* manual.

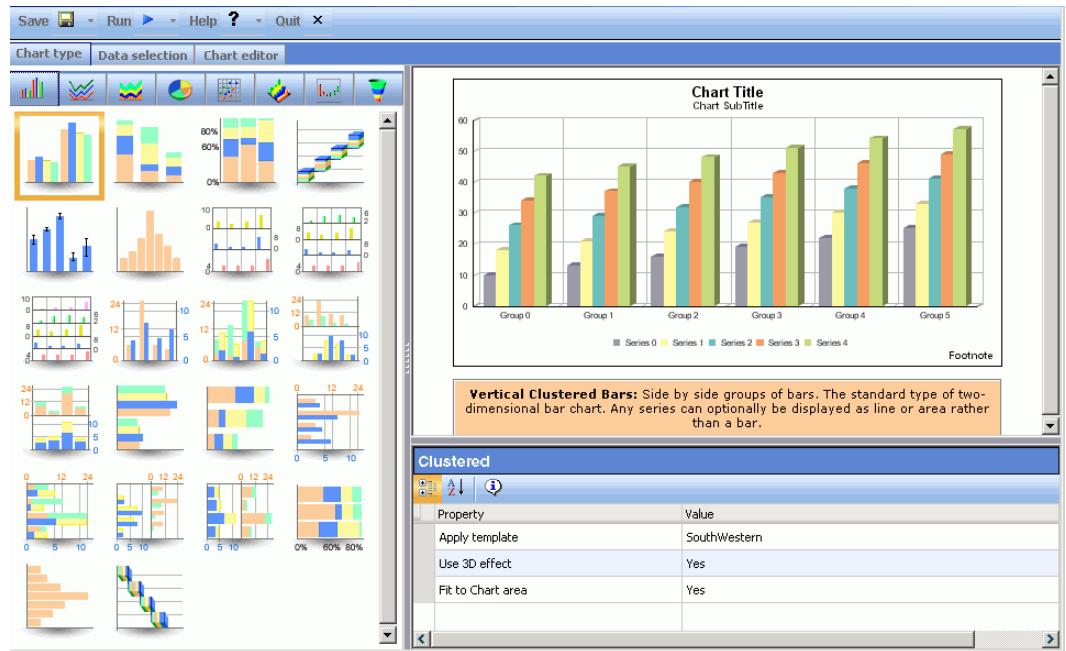
## Advanced Graph Assistant

Advanced Graph Assistant is a powerful graph tool that provides a user-friendly, easy-to-navigate interface with advanced functionality for creating and editing basic and complex graphs in Developer Studio and Managed Reporting Standard Reports.

You can access the Advanced Graph Assistant tool in multiple ways from the following WebFOCUS areas:

- ❑ Managed Reporting Standard Reports in Developer Studio.
- ❑ Procedures in a Developer Studio local environment.
- ❑ Procedure Viewer in Developer Studio.
- ❑ Procedure in a Developer Studio remote environment.
- ❑ Quick Links in Developer Studio.
- ❑ A Standard Reports graph previously created with the Graph Assistant.

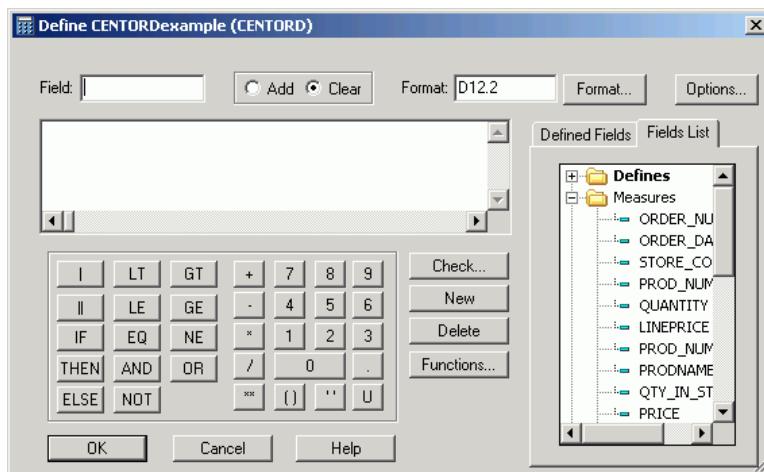
The following image is an example of the Advanced Graph Assistant.



For details about this tool, see *Creating Graphs With Advanced Graph Assistant* in the *Creating Reports With Graphical Tools* manual.

## Define Tool

The Define tool enables you to create a virtual field as a component in a reporting procedure. A virtual field is evaluated on each retrieved record that passes any selection criteria on the real fields. Define the virtual field by assigning a format and typing an expression or composing it using the calculator and the fields and functions listed in the tabbed panes in the Define tool window. The result of the expression is treated as though it were a real field stored in the data source.



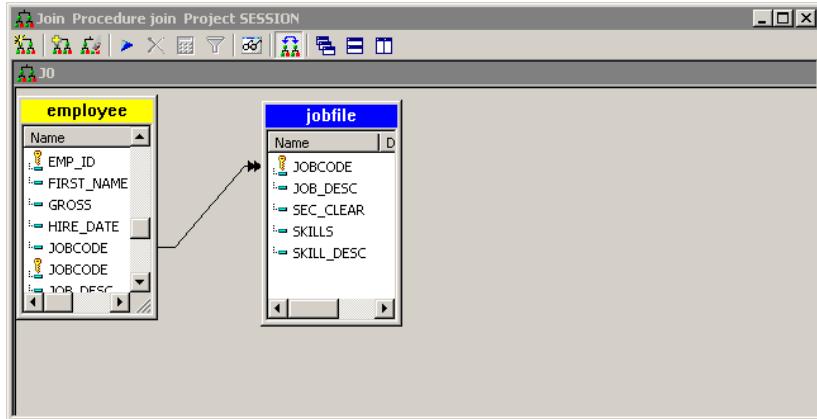
When you click the Check button, the generated code is validated. A dialog box opens, displaying the component's code and either an error message or text stating that no error exists.

For details about this tool, see *Creating Temporary Fields* in the *Creating Reports With Graphical Tools* manual.

## Join Tool

If a report requires data from two or more related data sources, you can temporarily join the files and report from them as if they were one. Joined files remain physically separate, but are treated as one data source structure.

The Join tool provides a graphical method for creating and manipulating all types of Joins. You must specify a host file, then a cross-referenced file to create a join. The Join tool displays both files and ordinarily, a default Join:



Using the Join tool, you can create:

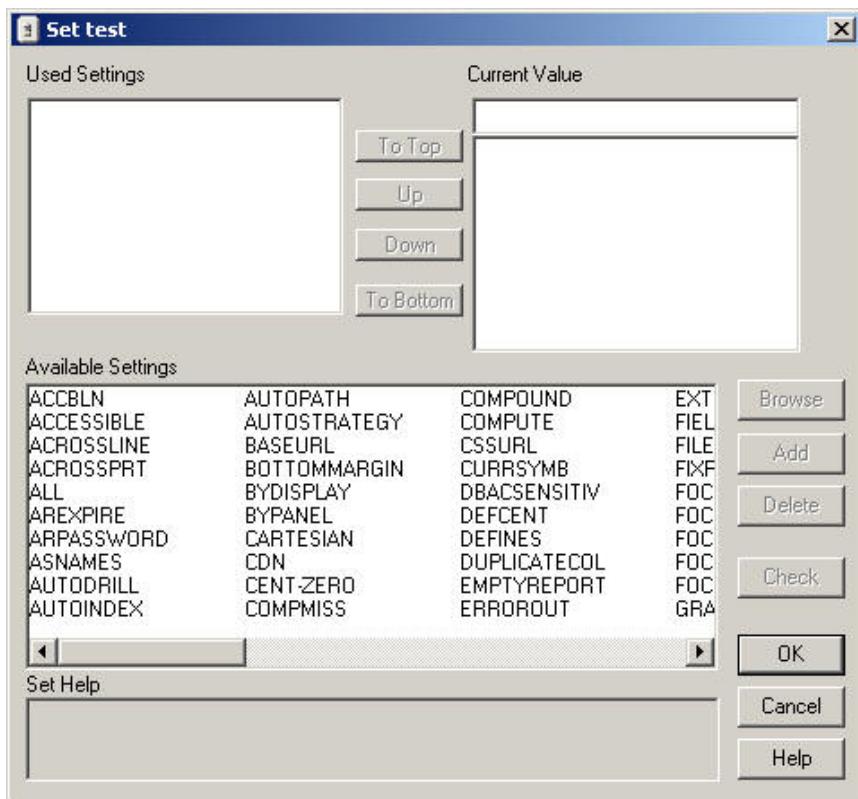
- ❑ **Dynamic joins.** These joins connect two (or more) data sources that have two fields, one in each data source, with formats (character, numeric, or date) and values in common. The common formats ensure the proper interpretation of the values. (This is sometimes called an equijoin, or inner join, since it is based on equality between fields.) Joining a product code field in a sales data source (the host file) to the product code field in a product data source (the cross-referenced file) is an example of this type of join.
- ❑ **Joins based on virtual fields.** These joins connect a virtual field in the host file to a real field in the cross-referenced file. The fields being joined must have formats and values in common. (This is another type of equijoin.)
- ❑ **Conditional joins.** These joins connect two or more data sources based on conditions other than equality between fields. You can define Where criteria in an expression that determines how to relate records in the host files to records in the cross-referenced files. For example, suppose you have a data source that lists employees by their ID number (the host file) and another data source that lists training courses and the employees who attended those courses (the cross-referenced file). Using a conditional join, you could join employee ID in the host file to employee ID in the cross-referenced file to determine which employees took training courses in a given date range (the Where condition).

- ❑ **Left Outer joins.** Some rows in a host table may lack corresponding rows in a cross-referenced table. When a report displays all matching rows, plus all rows from the host file that lack corresponding cross-referenced rows, the join is called a left outer join.

For details about this tool, see *Joining and Merging Data Sources* in the *Creating Reports With Graphical Tools* manual.

## Set Tool

The Set tool enables you to customize procedure development. It controls the way that reports and graphs appear on the screen or printer; the content of reports and graphs; data retrieval characteristics that affect performance; and system responses to user requests. It also helps you set up your metadata and manipulate information such as dates.



You can select parameters from a list in the Set tool, and apply an appropriate value; the tool provides the acceptable values for most of the parameters.

The Check button replaces the Run button. When you click the Check button, the generated code is validated. A dialog box opens that displays the component's code, and either an error message or text stating that no error exists.

For details about this tool, see *Customizing Your Environment* in the *Developing Reporting Applications* manual.

## Allocation Wizard

For a file managed by the operating system, such as an ISAM or comma-delimited data file, the physical file name is the actual name of a file as it appears to the operating system. A logical name (or ddname) is a shorthand name that points to the physical file name. Logical names simplify code by allowing short names to be used in place of the longer physical file name.

The Allocation Wizard enables you to create a FILEDEF command and generates platform independent file paths for all portable platforms by creating FILEDEF syntax with application names.



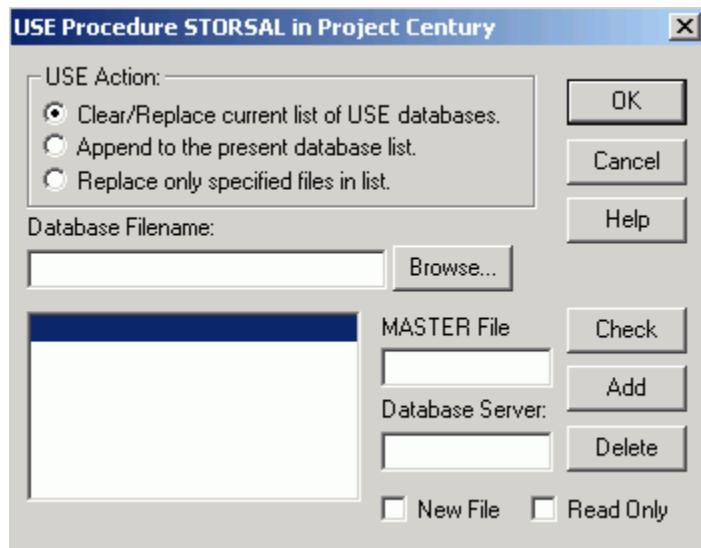
**Tip:** Instead of including an allocation component in individual procedures, you can include all FILEDEF commands in a single file that you call with the Include tool at the beginning of each procedure. This enables you to make changes to your allocation assignments globally instead of changing the information in each procedure. See *Execute Wizard and Include Tool* on page 117.

For details about the Allocation Wizard, see *Defining and Allocating WebFOCUS Files* in the *Developing Reporting Applications* manual.

## USE Tool

When you access a FOCUS data source, WebFOCUS searches for a Master File with the specified file name and then searches for a data source with the same name. The USE tool enables you to specify the name and location of a FOCUS data source. This is helpful under the following conditions:

- The default naming convention is not used.
- The data source cannot be found on the standard search path.
- An explicit extra option is desired.



**Tip:** Instead of including a USE component in every procedure, you can create a USE directory by including all USE specifications in a single file, which you call with the Include tool at the beginning of each procedure that needs to access the USE directory. See [Execute Wizard and Include Tool](#) on page 117.

The Check button replaces the Run button. When you click the Check button, the generated code is validated. A dialog box opens, displaying the component's code and either an error message or text stating that no error exists.

For details about this tool, see *Accessing a FOCUS Data Source* in the *Developing Reporting Applications* manual.

## Impact Analysis

You can use the Impact Analysis tool to analyze Master Files and fields and determine if they are used in WebFOCUS procedures. This tool helps developers determine how frequently a Master File or field is used and the impact that would result if you change the Master File.

The Impact Analysis tool provides developers with a listing of all the procedures that are impacted. It can also interactively open procedures based on the results and make necessary changes. You can access this tool in the Explorer window of Developer Studio.

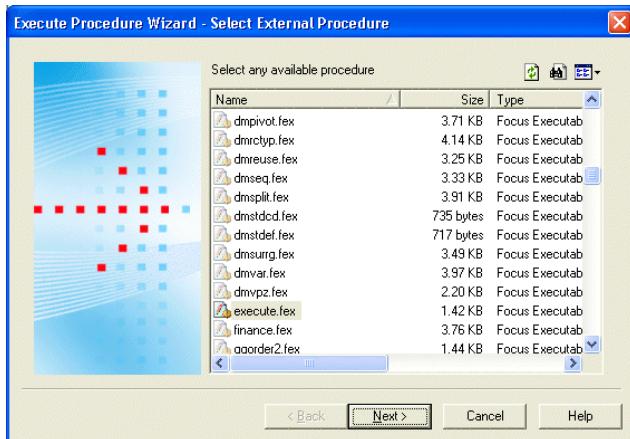
## Execute Wizard and Include Tool

The Execute Wizard and the Include tool enable you to call other procedures from the current procedure.

The Execute Wizard allows one procedure to execute or call another procedure. The called procedure behaves as a completely separate procedure, with its own context.

With the Execute Wizard, you can pass parameters directly from the user interface to the called procedure by automatically checking the called procedure for available parameters. If parameters are available, the tool will display the available parameters, allow you to provide values, and even test the called procedure. The Execute Wizard is available throughout all development areas of the product: Projects, Data Servers, and Managed Reporting.

The following screen is the first window of the Execute Wizard.



The Include tool allows one procedure to run another procedure as if the second one were embedded in the first. In this case, the procedure being included (*called*) has full access to variables defined in the *calling* procedure. Using this tool, you can create an object that includes another procedure within a host procedure.

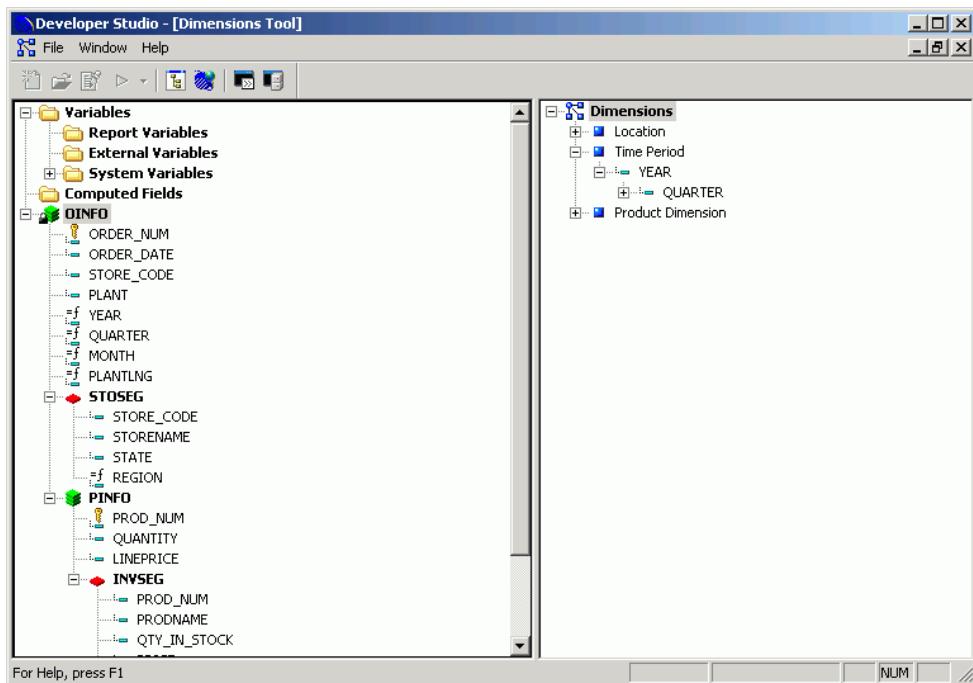
**Note:** Recursive includes can only be embedded up to four levels deep.

For details about these tools, see *Creating a Reporting Procedure in the Developing Reporting Applications With Graphical Tools* manual.

## Dimensions Tool

The Dimensions Tool allows you to create a temporary OLAP hierarchy and dimensions. Unlike the Dimension Builder, this tool does not modify the Master File. Information is stored in the active procedure instead. You may access the Dimensions Tool by selecting OLAP Dimensions from the Component Connector toolbox.

To create a hierarchy, drag and drop fields from the left pane into the Dimensions pane.



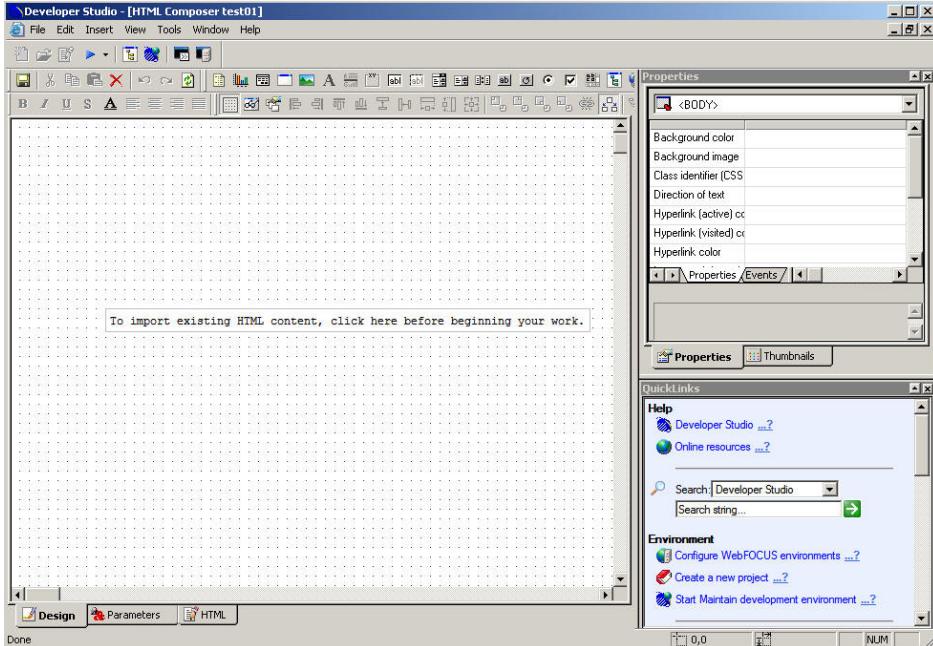
## HTML Composer

You can do the following when using the HTML Composer:

- ❑ Build an HTML launch page. The HTML Composer enables you to add push buttons, hyperlinks, and other objects that launch other WebFOCUS reports in your application.
- ❑ Create a launch page for one or more reports that contain parameters.
- ❑ Create a complete report by adding multiple reports and graphs into a single HTML formatted report.

- Create an advanced report layout by including images, frames, and other Web elements. You can change the location, size, and properties of all objects in your layout.
- Directly edit an HTML page in the HTML Editor or in a third party editor.
- Set background, font, and other properties in the Style Composer tool.

When you open the HTML Composer, it appears as shown in the following image.



For more information about the HTML Composer, see *Designing a User Interface for a Web Application With the HTML Composer* in the *Developing Reporting Applications With Graphical Tools* manual.

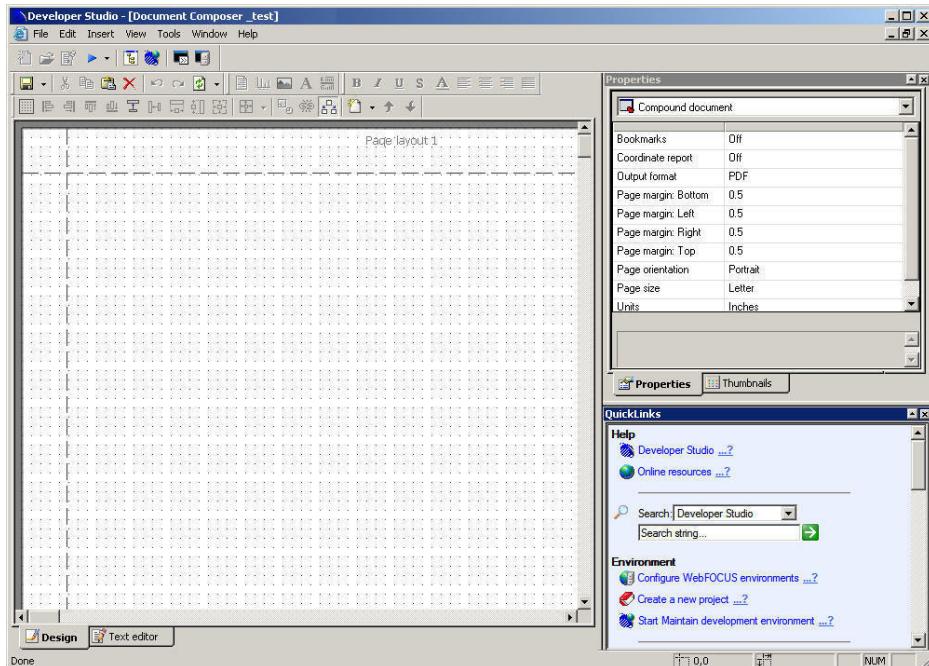
## Document Composer

The Document Composer enables you to design reports, and to coordinate and distribute layouts made up of multiple reports and graphs in a single document.

You can position reports and graphs anywhere on a single page or combine a series of layouts within a single document.

When creating compound reports from the Document Composer, PDF, HTML, Active Reports, Power Point, and Excel are available as output formats.

When you open the Document Composer, it appears as shown in the following image.



**Note:** To include a graph in the Document Composer, the graph must be saved in .SVG format. For more information about saving graphs, see the *Creating Reports With Graphical Tools* manual.

For more information about the Document Composer, see *Creating Reports With the Document Composer* in the *Creating Reports With Graphical Tools* manual.

## Match Wizard

You can merge two or more data sources, and specify which records to merge and which to sort out, using the Match Wizard. The wizard creates a new data source (a HOLD file) into which it merges fields from the selected records. You can report from the new data source and use it as you would any other HOLD file. The merge process does not change the original data sources.

You select the records to be merged into the new data source by specifying sort fields in the Match Wizard. You specify one set of sort fields (using the BY phrase) for the first data source, and a second set of sort fields for the second data source. The Match Wizard compares all sort fields that have been specified in common for both data sources, and then merges all records from the first data source whose sort values match those in the second data source into the new HOLD file. You can specify up to 32 sort sets; this includes the number of common sort fields.

In addition to merging data source records that share values, you can merge records based on other relationships. For example, you can merge all records in each data source whose sort values are not matched in the other data source. Yet another type of merge combines all records from the first data source with any matching records from the second data source.

You can merge up to 16 sets of data in one Match request. For example, you can merge different data sources, or data from the same data source.

**Note:** The limit of 16 applies to the most complex request. Simpler requests may be able to merge more data sources.

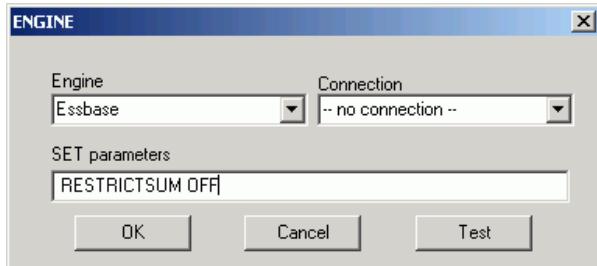
Access the Match Wizard from the Procedure Viewer in Developer Studio. It uses typical wizard behavior so you can easily navigate from one step in the process to the next.

For more information, see the *Creating Reports With Graphical Tools* manual.

## Engine Tool

The Engine tool in Developer Studio exposes the FOCUS ENGINE SET commands and enables you to enter ENGINE commands or connection attributes, and override parameters.

**Note:** The Engine tool is only used to create ENGINE statements. You are responsible for having the knowledge of the ENGINE SET command or the Connection Attribute needed.



For more information about this tool, see *Developing Reporting Applications With Graphical Tools* manual.

## OLAP Graphical Tools

The primary location from which you perform OLAP analysis is the report itself. Any changes you make are instantly applied. You can sort measure values in ascending or descending order, drill down on measures and dimensions, change sort fields from vertical (BY) to horizontal (ACROSS), add a column of data visualization graphics to track trends, and display a bar graph in a separate pane above the report.

You can supplement your OLAP analysis with two tools: the Selections pane and the Control Panel:

- ❑ In the Selections pane, you can change the selection criteria in your report for quick iterative analysis. A drop-down list is available for each dimension. You can multi-select values from one or more dimension lists to refine your report output; display or hide columns; drill down on and apply data visualization graphics to measures; drag and drop dimensions to the report frame; and present data in several graph formats.
- ❑ In the OLAP Control Panel, you can perform many functions that can also be accomplished from the report or the Selections pane, as well as several unique functions. You can sort dimensions in ascending or descending order; group data in tiles (for example, percentiles or quartiles); define selection criteria based on existing characters, ranges, and dates; stack measures to limit column widths; and save OLAP reports in PDF and Excel 2000 formats. (In Managed Reporting, users can also save OLAP output in the My Reports folder)

The following example shows how these controls look when the selections panel is positioned above the report, and adjacent to the Control Panel.

The screenshot shows two windows side-by-side. On the left is the 'FOCUS Report - Microsoft Internet Explorer' window, displaying a 'Quarterly Store Report' with data for Q1. The report includes columns for QUARTER, Store Name, PRODTYPE, and Date Of Order. The data is as follows:

QUARTER	Store Name:	PRODTYPE	Date Of Order
Q1	AV VideoTown	Digital	2002/02/28
	Audio Expert	Digital	2002/01/02
	City Video	Digital	2002/02/18
	Consumer Merchandise	Digital	2002/01/02
	TV City	Digital	2002/01/02
	Web Sales	Digital	2002/01/02

On the right is the 'WebFOCUS OLAP Control Panel -- Web Page Dia...' window. It contains several sections: 'Dimensions' (Location, Time Period, Product Dimension), 'Drill Across' (Shift Up, Remove, Shift Down, Pivot), 'Drill Down' (QUARTER, Store Name), and 'Measures' (PRODTYPE, Date Of Order, Line Cost Of Goods So). There are also checkboxes for 'Stack Measures' and 'Show Graph'. At the bottom are buttons for Run, Options, Help, and Selection Criteria.

In the following example, the Control Panel is closed to maximize the screen space available for your analytic comparisons.

QUARTER	Store Name	Product Type	Date Of Order	Line Cost Of Goods Sold
Q1	AV VideoTown	Digital	2002/01/28	17,345,996.00
	Audio Expert	Digital	2002/01/02	79,415,143.00
	City Video	Digital	2002/02/18	5,583,726.00
	Consumer Merchandise	Digital	2002/01/02	9,159,005.00
	TV City	Digital	2002/01/02	26,563,182.00

For details about these tools, see *Analyzing Data in an OLAP Report* in the *Creating Reports With Graphical Tools* manual.

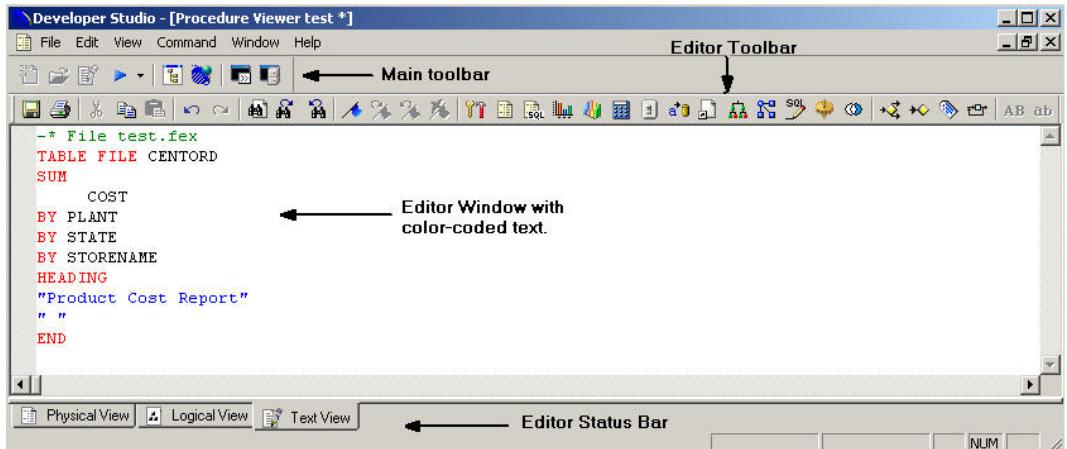
## Text Editor

Developer Studio provides a fully integrated text editor that you can use to create, view, and edit the source code for procedures, procedure components, Master and Access files, and other types of files required by your projects. The text editor enables you to use familiar Windows editing techniques, such as cut, copy, paste, undo/redo, and drag-and-drop.

In addition, you can:

- Take advantage of color-coded syntax designed to make writing, editing, and debugging procedures easier.
- Bookmark lines of a file for quick editing and easy reference.
- Find and replace text.
- Run procedures or procedure components directly from the Editor.

When you open a Master File, procedure, or HTML file in the Editor window, syntax elements in the text appear color-coded for easy viewing and editing. For example, the keywords in a procedure appear in red. You can change default colors or remove text coloring to suit your preferences.



For details about this tool, see *Editing Application Components as Text in Developer Studio* in the *Developing Reporting Applications With Graphical Tools* manual.

## SQL Editor

Developer Studio provides an SQL Editor that enables you to code SQL Passthru and highlights any SQL commands within the code. This editor also allows you to choose your connection engine and connection name from drop-down lists on the toolbar. The supported engines are DB2, DB2 for AS/400, Microsoft SQL Server, Oracle, Sybase, and Teradata. The SQL Editor provides you with the option to select another engine.

**Note:** If you choose the Other option, you must know the correct syntax to use for the engine name.

The SQL Editor also provides you with the option of preparing an SQLOUT file, which you can use with the Report Painter or Graph Assistant. The SQLOUT file is a temporary file that you can select when you invoke the Report Painter and Graph Assistant. It is placed in the Hold Files area of the Open (Master Files) dialog box.

To access the SQL Editor, open the Procedure Viewer and click the SQL Editor icon on the Component Connector toolbar. You can also access the SQL Report icon in the Setup area of the Report Painter Object Inspector to modify existing procedures. For more information, see the *Developing Reporting Applications* manual.

## Deploy Wizard

After you create, test, and debug a project in the development environment, you are ready to make it available as a live application on the Web. This process involves moving certain project files to selected target servers in a WebFOCUS environment. Developer Studio automates the process for you.

Deploying a project is the process of copying project files to a Web server and a WebFOCUS Reporting Server so the application can run on the Web and be accessed by other users. HTML forms are used to launch the application in the Web environment. The Deploy Wizard guides you through the process of creating a configuration that manages the deployment of your project files to the Web. You can take advantage of the following features in the Deploy Wizard:

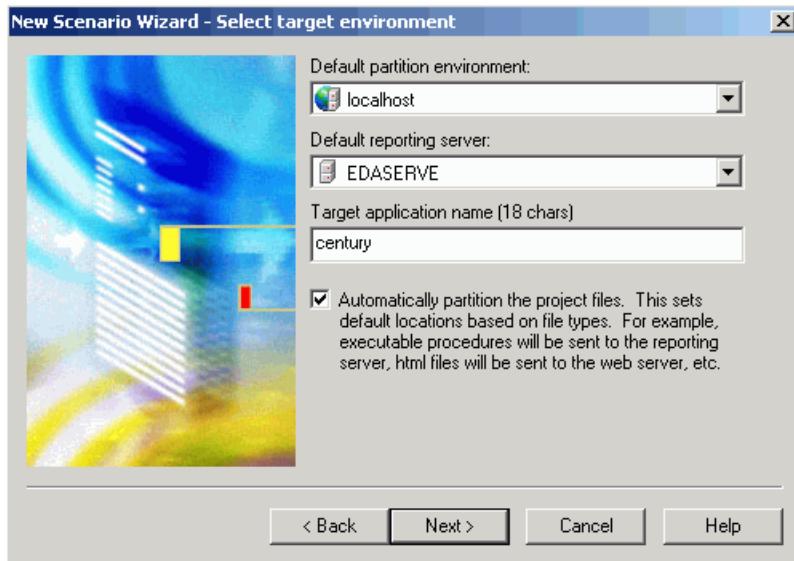
- ❑ **Multiple deployment scenarios.** You can define multiple deployment scenarios and save them for future deployment. A deployment scenario includes the partitioning of the project files and the selection of servers. For example, you might have two deployment scenarios for a project: one that maps the files to a production server, and another that maps the files to a test server.
- ❑ **Consolidated deployment tool for Developer Studio and Maintain.** The Developer Studio and Maintain environments have a consolidated deployment tool.
- ❑ **Deployment to multiple servers.** You can deploy your project files to multiple WebFOCUS Reporting or Maintain servers. This enhancement enables you to access data on multiple servers, run your report components in the most suitable environment, and speed up your application processing. It also enables greater control of access to your reporting applications.

This feature is relevant if you develop WebFOCUS reporting applications or WebFOCUS Maintain applications, and are responsible for deploying your application to end users who access it from a Web browser.

You can create more than one deployment scenario for a project, and you can view and modify the properties of an existing scenario.

Developer Studio supplies a deployment scenario named Local Deploy, which it uses to prepare files to run on a local server. Do not modify or remove Local Deploy.

You must enter and select appropriate information in the New Deployment Scenario dialog box to create a new deployment scenario.

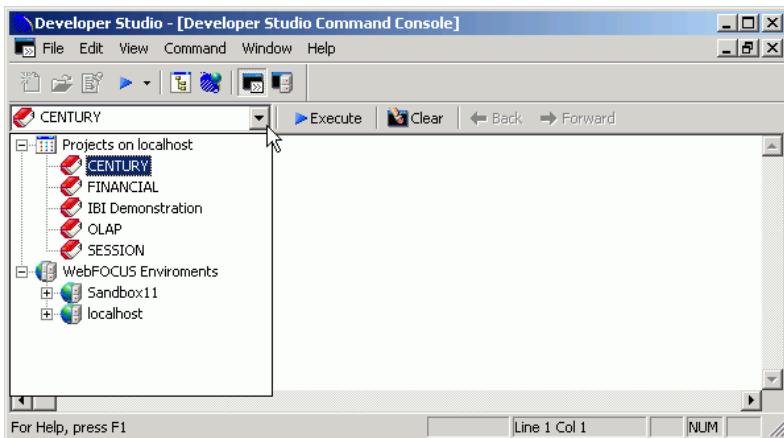


For details about this tool, see *Partitioning and Deploying Project Files* in the *Developing Reporting Applications With Graphical Tools* manuals.

## Command Console

The Command Console enables you to send commands directly to a server from Developer Studio. This benefits users who have worked with Information Builders' products and are already familiar with the command syntax.

The Command Console sends output to your Web browser. Output can include error messages, responses to query commands, and report output. If you open the Command Console before you run a procedure, it will also serve as a troubleshooting and debugging tool.



For details about this tool, see *Using the Command Console* in the *Developing Reporting Applications* manual.

## WebFOCUS Reporting Server Console

The WebFOCUS Reporting Server has the capabilities of a regular WebFOCUS Reporting Server, and its configuration procedures are identical. WebFOCUS Reporting Servers can be configured and managed through Server Consoles that use WebFOCUS technology. For a full understanding of configuration options and server capabilities see the *Server Administration for UNIX, Windows, OpenVMS, OS/400 and z/OS* manual.

The WebFOCUS Reporting Server Console, sometimes referred to as the Web Console, enables a developer to independently manage the WebFOCUS Reporting Server environment from the desktop product. Using this utility, you can:

- View server and agent status.
- View server and agent statistics.
- Manage agent connections.

If your Reporting Server is secure, WebFOCUS prompts you for your user name and password.

For details about this tool, see *Partitioning and Deploying Project Files* in the *Developing Reporting Applications With Graphical Tools* manual.

**Note:** When launching this tool from the main toolbar, or selecting *WebFOCUS Reporting Server Console* from the Command menu, the console for the project development server will open. Depending on the type of project development you are performing (local or remote), the corresponding local or remote WebFOCUS Reporting Server Console will open. Also, when working in the WebFOCUS Environment area of the Object Explorer, and the Data Servers area is opened, an icon is enabled in the Object Explorer Toolbar. When a data server is accessed, this option is enabled to allow users to open the WebFOCUS Reporting Server Console for the selected server. This is supported on Windows, UNIX, and USS platforms.

# 3 | Setting Preferences

You can set a variety of preferences from the Options dialog box.

To access the Options dialog box, choose *Options* from the Window menu. The tabs at the top of the window include:

- ❑ **General.** This tab contains options for starting up Developer Studio, minimizing the main window, and other settings.
- ❑ **Reporting.** This tab contains format options for output, field list displays, formatting a report for the Web, and setting the record retrieval limits.
- ❑ **Explorer.** This tab enables you to change the viewable contents of the Developer Studio Explorer tree and schedule an automatic refresh of the contents.
- ❑ **Source Control.** This tab enables you to activate a default version control system.
- ❑ **External Tools.** This tab enables you to launch an application from the Command menu.
- ❑ **Title Format.** This tab enables you to customize the information display in the Developer Studio title bar.

## Topics:

- ❑ General Tab
- ❑ Reporting Tab
- ❑ Explorer Tab
- ❑ Source Control Tab
- ❑ External Tools Tab
- ❑ Title Format Tab

## General Tab

The General tab contains the following options:

### Startup Options

Option	Description
<b>Maximize main window</b>	Select this option to maximize the Explorer window when you begin each session.
<b>Show the startup window</b>	Currently not supported.
<b>Open the Console window</b>	Launches the Console window each time you begin a session.
<b>Open last project on startup</b>	Opens the last edited application automatically when you begin your next session.
<b>Open last accessed file on startup</b>	Opens the last file opened in the appropriate tool.

### Minimize the Main Window

Option	Description
<b>When running a Procedure</b>	Minimizes the main window when any procedure (FOCEEXEC) is executed.

### Other Settings

Option	Description
<b>Use large buttons</b>	Displays large toolbar buttons.
<b>Save window positions on exit</b>	Saves the positions of all windows so that they appear in the same place the next time they open.
<b>Use new browser to execute</b>	Opens a new Web browser window to display output generated by Developer Studio.
<b>Store data as ANSI</b>	Stores data in ANSI (Windows) format.

<b>Option</b>	<b>Description</b>
<b>Start local WebFOCUS server</b>	Starts the local WebFOCUS Reporting Server when Developer Studio is launched.
<b>Stop local WebFOCUS server on exit</b>	Stops and closes the local WebFOCUS Reporting Server when you exit Developer Studio.
<b>Confirm close</b>	Displays a prompt for users to confirm that they want to exit Developer Studio.
<b>Start local Web server</b>	<p>Starts the IIS Web server by default if you are performing a full installation for stand-alone development.</p> <p>If you do not have IIS or you do not want the IIS Web server to start automatically when you launch Developer Studio, you can uncheck the <i>Start local Web server</i> option. Even if this option is not unchecked and you use another Web server (such as Apache, WebSphere, and others) instead of IIS, you will be able to use the servers based on your configuration.</p> <p>This option will be enhanced to allow developers to select which Web server or application server to start when launching their desktop application.</p>

<b>Option</b>	<b>Description</b>
<b>Default new Data Sources type</b>	<p>Lists data sources you can use, such as:</p> <ul style="list-style-type: none"> <li>Comma Delimited (COM)</li> <li>Dbase (DBASE)</li> <li>EDA (EDA)</li> <li>Fixed Format (FIX)</li> <li>FOCUS (FOC)</li> <li>Fusion (FUSION)</li> <li>IBM DB2 (SQLDBM)</li> <li>Informix (SQLINF)</li> <li>Microsoft SQL Server (SQLMSS)</li> <li>ODBC (SQLODBC)</li> <li>Oracle (SQLORA)</li> <li>Sybase Server (SQLSYB)</li> <li>Teradata (SQLDBC)</li> </ul>
<b>Default file editor</b>	<p>Lists file editor options, such as:</p> <ul style="list-style-type: none"> <li>Edit in Developer Studio tool</li> <li>Edit in Text Editor</li> <li>Edit in Windows registered tool</li> </ul> <p><b>Note:</b> The option above is only visible if the file type you are accessing has been associated with a Windows application.</p> <p>The file editor used determines which context menu options will be available and controls the default behavior for double-clicking and right-clicking files.</p>

## Reporting Tab

The Reporting tab contains the following options:

<b>Format Output for...</b>	
<b>Screen</b>	Select <i>Screen</i> to format reports for the screen.
<b>Printer</b>	Select <i>Printer</i> to format reports for the printer.

The following options affect the display of the Fields window in the Report Painter, the Graph Assistant, and other tools:

<b>Field List Options</b>	<b>Description</b>
<b>Sort the list by field name</b>	Sorts any list of field names alphabetically.
<b>Show fully qualified field names</b>	Displays any list of field names as qualified field names, which includes data source and table names, alphabetically.
<b>Display the field name</b>	Displays the full field name in the Fields window, as specified in the file description.
<b>Display the field alias</b>	Displays the alternate field name in the fields window, as specified in the file description.
<b>Display field titles</b>	Displays the column title in the Fields window, as specified in the file description.
<b>Display field descriptions</b>	Displays descriptive information about the field in the Fields window, as specified in the file description.
<b>Display the data formats</b>	Displays the field's length and format type in the Fields window, as specified in the file description.
<b>Expand Field Tree</b>	Displays fields in expanded mode when using a Field Tree. If this option is not selected, segments appear collapsed wherever a Field Tree appears.  <b>Note:</b> This option can also be accessed from the Field Tree context menu.

<b>Field List Options</b>	<b>Description</b>
<b>Display Filters in Filters Folder</b>	<p>Displays Filters in a separate Filters folder of the Field Tree. If this option is not selected, Filters appear with the rest of the fields in the segment.</p> <p><b>Note:</b> This option can also be accessed from the Field Tree context menu.</p>
<b>Display Computes in Computes Folder</b>	<p>Displays Computes in a separate Master File Computed Fields folder of the Field Tree. If this option is not selected, Computes appear with the rest of the fields in the segment.</p> <p><b>Note:</b> This option can also be accessed from the Field Tree context menu.</p>

### Style Sheet Merge Options

<b>Option</b>	<b>Description</b>
<b>Drill Down</b>	<p>Preserves drill downs in your current StyleSheet when you apply another StyleSheet to a report.</p>

### Other Options

<b>Option</b>	<b>Description</b>
<b>Report Format</b>	<p>Select the display format for your reports. You may choose:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Web (HTML)</li> <li><input type="checkbox"/> Adobe Acrobat (PDF)</li> <li><input type="checkbox"/> Excel 2000</li> <li><input type="checkbox"/> FOCUS default (This option applies whichever of the previous formats was set as an environment parameter.)</li> </ul>

Option	Description
<b>Maximum number of records to retrieve/Maximum number of readings to make</b>	Specifies a limit on the number of records to retrieve from the data source. Setting a retrieval limit creates selection criteria for both Retrieval Limit and Read Limit dialog boxes. Use this when you need only a few records to test the design of a new report, or you know how many records meet the test criteria and want to stop a search after those records are retrieved. This reduces total retrieval time.
<b>Default Style Sheet</b>	Specifies the default styling rules when you open the Report Painter. Click the <i>Browse</i> button to choose user-created style sheets.
<b>Default Report Template</b>	Specifies the default report settings when you open the Report Painter.
<b>Always author reports with qualified field names</b>	Enables you to set how fields are written to the procedure files (.fex). Consequently, the field names are displayed in the Developer Studio reporting tools (such as headers/footers, and others) as they are written in the procedure files (.fex). By default, qualified field names is turned off.

## Explorer Tab

The Explorer tab contains the following options:

**Note:** These options are used to control the development areas that are visible in the Explorer tree. At least one option must be selected and applied to all configured environments.

### Explorer settings

Option	Description
<b>Show Projects on Explorer tree</b>	Shows the Projects area in the Explorer tree. This is the default option.
<b>Show Data Servers area</b> <b>Show Cluster Nodes</b>	Shows the Data Servers area in the Explorer tree. Shows the Reporting Server Cluster Nodes and the Reporting Servers that are part of the Cluster Node configuration.

Option	Description
<b>Show Managed Reporting area</b>	Shows the Managed Reporting area in the Explorer tree.
<b>Show Web Applications area</b>	Shows the Web Applications area in the Explorer tree.
<b>Show Desktop on Explorer tree</b>	Shows the Windows Desktop in the Explorer tree, showing all of the files on your local PC and network.
<b>Schedule an automatic refresh</b>	Automatically refreshes the contents in the Explorer tree at a scheduled interval of time. The default automatic refresh time is set to 10 minutes.

## Source Control Tab

The Source Control tab contains the following options:

### Installed Version Control Providers

Option	Description
<b>No Source Control providers are available</b>	This is displayed when the product does not detect any supported Source Control client software.
<b>Installed Source Control providers</b>	<p>The list of Source Control providers is displayed with the first provider selected by default. If you have more than one type of Source Control software installed, select the one you want to use, or clear the selected option if you do not want to use the Source Control feature.</p> <p><b>Note:</b> Source Control software is third-party software that is installed separately from Developer Studio. The Source Control software can be installed on the developer's PC after Developer Studio is installed. When Source Control software is enabled, UI options are enabled in Developer Studio to allow developers to use the Source Control feature.</p>

## External Tools Tab

The External Tools tab contains the following options:

Option	Description
<b>List of registered external tools</b>	<p>Enables you to launch an application (Executable File) from the Command menu.</p> <p>For more information about adding external tools, see <a href="#">How to Add or Modify External Tools</a> on page 93.</p>
<b>Tool title</b>	<p>When you provide a descriptive name for the application, Developer Studio displays this title on the Command menu.</p>
<b>Tool path</b>	<p>Type the path name for the file or click the <i>Browse</i> (binoculars) icon to locate an executable file.</p>

## Title Format Tab

You may customize the information display in the Developer Studio title bar. This applies to Developer Studio tools, for example, the Report Painter and the Procedure Viewer. The Title Format tab contains the following options:

### Choose a title format

Option	Description
<b>IBFS Path (long Name)</b>	<p>Displays the full path of the file using the IBFS naming convention.</p>
<b>FileName (Short Name)</b>	<p>Displays only the file name.</p>
<b>Show Tool Name</b>	<p>Adds the Tool name before the file name.</p>
<b>Show the File Extension</b>	<p>Displays the file extension. This is available only when selecting to view the Long Name.</p>

## **Results**

<b>Option</b>	<b>Description</b>
<b>Sample FEX Dialog</b>	A preview area to show users a sample of how information will get displayed in the title bar based on options selected.

# 4

## Tutorial: Creating an OLAP-enabled Report in Developer Studio

Suppose that you need to develop content for a Managed Reporting application that facilitates query and analysis of data. This tutorial is designed to show you how to use WebFOCUS Online Analytical Processing (OLAP) to easily identify useful categories of information and drill down for further information.

### Topics:

- ❑ OLAP Tutorial Overview
- ❑ Before You Begin
- ❑ Creating the OLAP Project
- ❑ Creating the OLAP Hierarchy
- ❑ Creating the OLAP Report With a Procedural Hierarchy
- ❑ Creating the OLAP Report With the CENTORD Data Source
- ❑ Manipulating Report Output

## OLAP Tutorial Overview

Begin this tutorial by creating a project in WebFOCUS Developer Studio called OLAP. WebFOCUS OLAP reports require hierarchical data structures, so this tutorial includes an exercise that demonstrates how to use the new Dimensions Tool to create a local hierarchy. Next, you will create a report with OLAP capabilities. After you OLAP-enable your report and run it, you can experiment with these features, among many others:

- Graphical dimensions and measures.
- The ability to right-click OLAP options in a report.
- Procedural hierarchies.

This tutorial also demonstrates how to use the OLAP selections panel to quickly customize your report and sort and drill down on data. It shows you how to use the OLAP Control Panel to manipulate report data and perform certain tasks that are not available either directly in the OLAP-enabled report or from the OLAP selections panel.

For details about OLAP, see the *Creating Reports With Graphical Tools* manual.

**Note:** OLAP is not supported with CGI or ISAPI and IWA security.

## Before You Begin

### In this section:

[Sample Files](#)

Before you begin this tutorial, verify that:

- You have installed Developer Studio.
- The sample files are installed in the directories:
  - `\install_directory\ibi\apps\ibisamp` directory
  - `\install_directory\ibi\apps\ibinccen` directory

where `install_directory` is the root directory in which Developer Studio is installed. The default install directory is IBI.

For more information about installing Developer Studio, see the *Developer Studio Installation and Configuration Manual*.

## Sample Files

### **Reference:**

Century Corporation Sample Files

You will be working with the Century Corporation sample Master Files and their associated data sources. These sample files are installed in the `\install_directory\ibi\apps\ibisamp` directory and the `\install_directory\ibi\apps\ibinccen` directory during program installation. They contain financial, human resources, inventory, and orders data, and are used to build the OLAP project.

### **Reference: Century Corporation Sample Files**

The following is a list of the sample Master Files and their associated data sources that you will use in the tutorial.

<b>Master File (.MAS)</b>	<b>Data Source (.FOC)</b>
brokers.mas	brokers.foc
centord.mas	centord.foc
trades.mas	trades.foc

## Creating the OLAP Project

### **In this section:**

Add Master Files to Your OLAP Project

Data Detour: Where Is the Data?

Using OLAP-enabled Data

### **How to:**

Create the OLAP Project

WebFOCUS Online Analytical Processing (OLAP) enables you to view and quickly analyze data in order to make critical business decisions. You can drill down or roll up data hierarchies, pivot fields from columns to rows (or vice versa), and slice-and-dice information by filtering or querying data sources based on specified criteria or thresholds.

In the first exercise of this tutorial, you will create a project called OLAP. Use the Dimensions Tool to create the OLAP dimensions hierarchy, and create a report using the Report Painter. Then you can OLAP-enable the report so that you can manipulate data for quick comparison and analysis.

For more information about OLAP, see the *Creating Reports With Graphical Tools* manual.

In this exercise, you will:

- Create the OLAP project.
- Add Master Files to the project.
- Create a procedural OLAP dimensions hierarchy.
- Create and run an OLAP report with a procedural hierarchy.
- Manipulate output with dimension controls.
- Create a second OLAP report.
- Analyze and manipulate output using the OLAP selections panel and the OLAP Control Panel (OCP).

The following is an example of report output that is generated after you OLAP-enable and run a report.

The screenshot shows a Microsoft Internet Explorer window titled "WebFOCUS OLAP - Microsoft Internet Explorer". The address bar shows "http://localhost/cgi-bin/lbi\_cgi/webapi.dll". The toolbar includes Back, Forward, Stop, Home, Search, Favorites, Media, and various file operations like Open, Save, Print, and Help. Below the toolbar are several dropdown menus: File, Edit, View, Favorites, Tools, and Help. The main content area displays a report titled "Instrument Report for Each Continent". The report has a table with the following data:

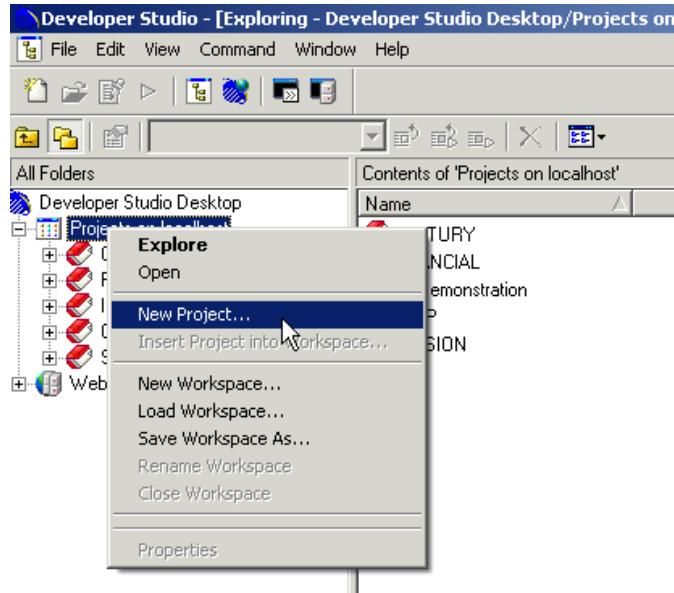
Continent	QTR	Broker	Type of Instrument	Amount
AMERICAS	Q1 1998	01042	ST. NOTES	1,122,366.800
	Q2 1998	01037	ST. NOTES	1,142,241.000
	Q3 1998	01014	ST. NOTES	11,510.400
ASIA	Q1 1998	01037	CASH	599,596.900
	Q2 1998	02042	OVERNIGHT	582,591.700
	Q3 1998	01023	OVERNIGHT	2,634.300
EUROPE	Q1 1998	01023	ST. NOTES	747,976.300
	Q2 1998	02042	CASH	718,399.910
	Q3 1998	01042	ST. NOTES	11,701.000

### **Procedure: How to Create the OLAP Project**

Before you can do any development work in WebFOCUS Developer Studio, you must create a project. You can accomplish this by using the Project Wizard, which guides you through the project creation process by prompting you for all necessary information.

1. Launch Developer Studio. If the WebFOCUS Reporting Server is installed, it is activated at this time.

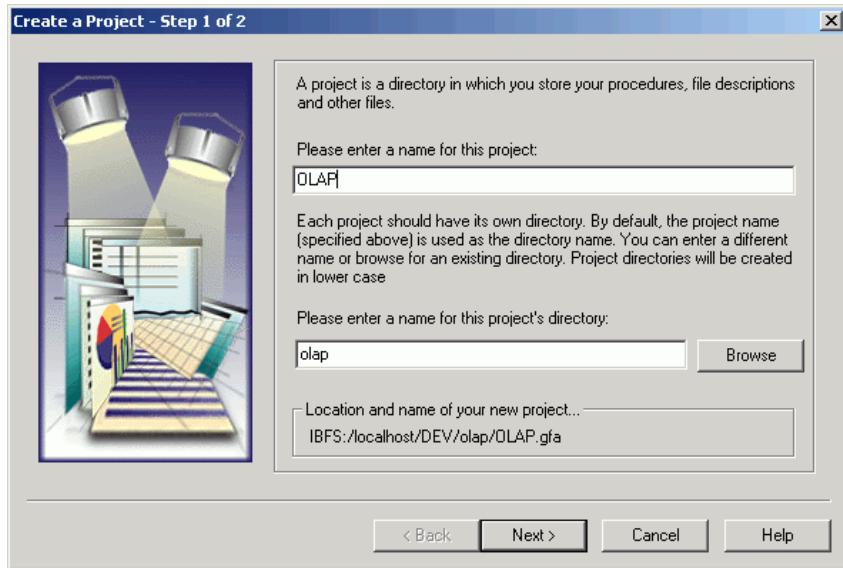
- 2.** Right-click *Projects on localhost* in the Explorer and choose *New Project*.



The Create a Project wizard opens at Step 1.

- 3.** Name the Project *OLAP* and accept the default directory for the new project. Notice that the project name is registered as *OLAP.gfa* (Graphical FOCUS Application).

**Note:** Projects directories are created in lowercase.



Each project should have its own directory. By default, the project name (specified above) is used as the directory name. You can enter a different name or browse for an existing directory. Project directories will be created in lower case

Please enter a name for this project's directory:

A text input field where 'olap' is typed, with a 'Browse' button to its right.

Location and name of your new project... —

A text input field showing the full path 'IBFS:/localhost/DEV/olap/OLAP.gfa'.

< Back

Next >

Cancel

Help

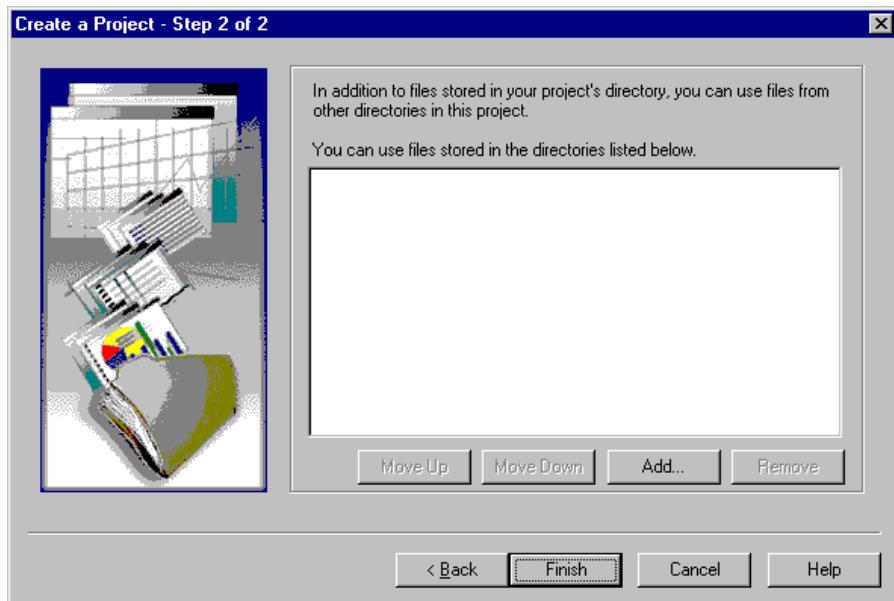
4. Click Next.

5. The following message appears:

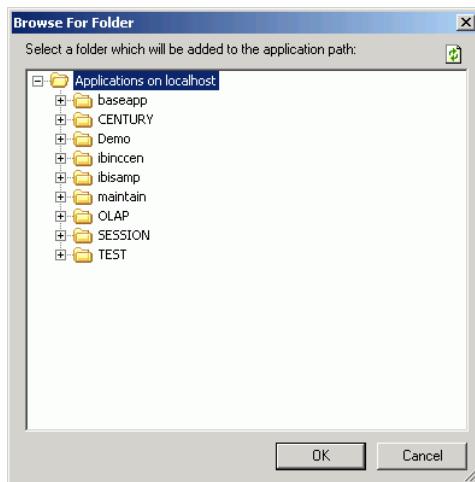
Directory OLAP does not exist. Do you want to create it?

Click Yes to confirm the creation of the physical directory for the new project.

6. In Step 2, you will specify a directory path to the data source from which the project must retrieve information.



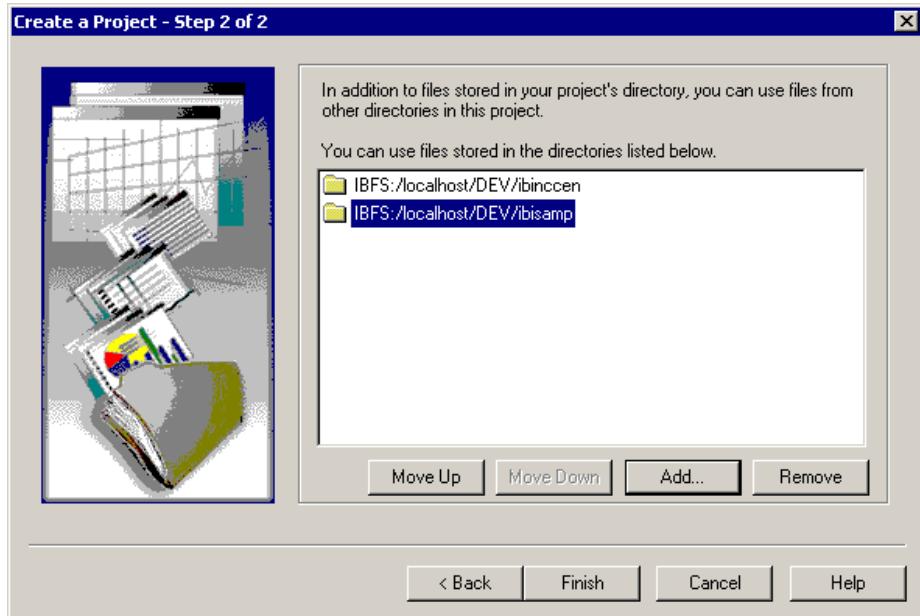
Click Add. The Browse for Folder dialog box opens.



7. Choose *ibinccen*. This is the directory in which the sample files for the fictional Century Corporation are stored. You will be using some of these files to create your income statement.

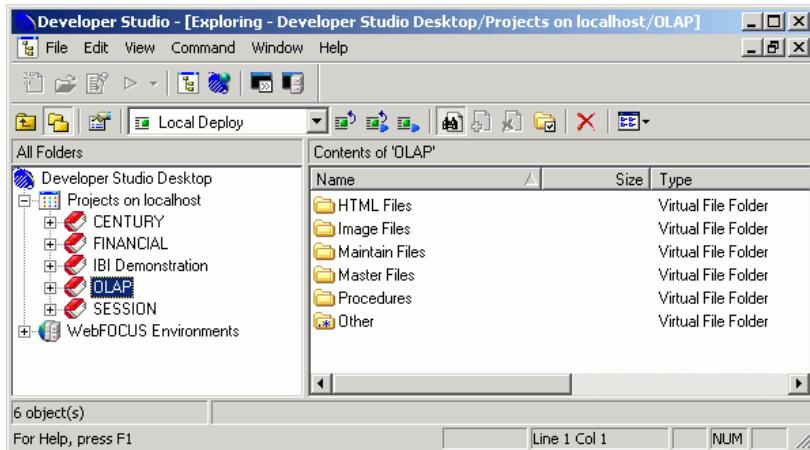
- 8.** Click *OK*.
- 9.** Click *Add* again.
- 10.** Choose *ibisamp*.

The Project Wizard displays your selections.



- 11.** Click *Finish*. Your new project now appears in the Explorer tree.

- 12.** Click the + sign to expand the OLAP folder. You will see subfolders: HTML Files, Maintain Files, Master Files, Procedures, and Other.



**Tip:** These are *virtual* folders, categorized in this way for your convenience. They are called virtual folders because they apply a logical structure to the project but do not actually exist as physical directories. The files listed in these folders, along with the project's GFA file, are actually stored on a WebFOCUS Reporting Server and a Web/Application Server. Nevertheless, you can identify and access the files associated with a project from a folder in the local projects development area of Developer Studio, without concern for where the files actually reside.

To complete the tutorial, you will use the Master Files and Procedures folders.

## Add Master Files to Your OLAP Project

Follow these steps to add master files to your OLAP project.

- 1.** Click the Master Files folder under the OLAP project.

You will see a list of all the Master Files in the paths you specified when you created the project:

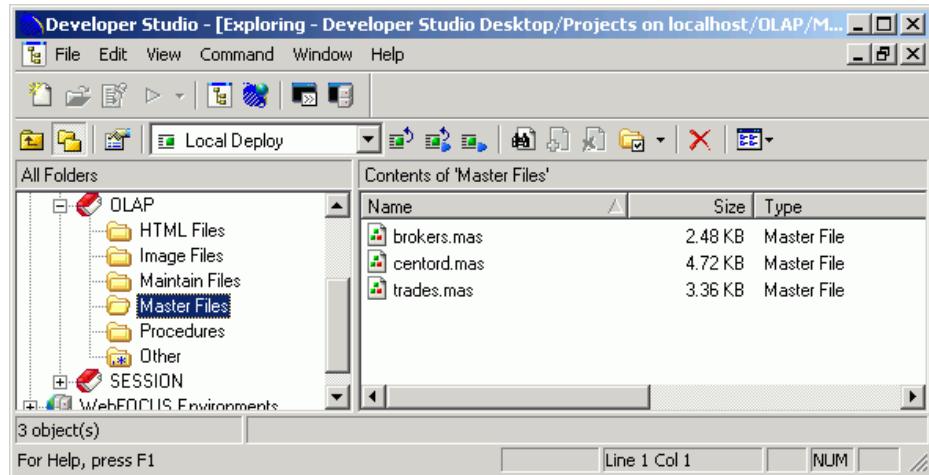
- ibi\localhost\apps\ibinccen
- ibi\localhost\apps\ibisamp

Notice that the icons are grayed out. This indicates that the files are available, but not active for your project.

- 2.** To associate the Master Files you will need for the tutorial, select the BROKERS.MAS, CENTORD.MAS, and TRADES.MAS Master Files and click the Add button on the toolbar (or right-click and select Add to Project).

The icons for these Master Files are now active for your project.

3. Click the binoculars icon to limit the list to the active Master Files.



**Tip:** You can toggle back to the full list at any time.

## Data Detour: Where Is the Data?

To see where the corresponding data is stored:

1. Expand the WebFOCUS Environments icon. The WebFOCUS Environments area of the Explorer shows the actual files that reside on the WebFOCUS Reporting Server and the Web/Application server.
2. Double-click *localhost* under WebFOCUS Environments. This is the Reporting Server installed on your local machine.
3. Open Data Servers, followed by EDASERVE, then Applications.
4. Expand the folder labeled *ibinccen* (the directory you cited earlier as the location in which the data for your project is stored).
5. Organize the list by *Type*. Scroll down to see the full list of Master Files available on the path you identified, including the ones you added to the project: BROKERS.MAS, CENTORD.MAS, and TRADES.MAS. Then scroll back up to see the corresponding data sources: BROKERS.MAS, CENTORD.MAS, and TRADES.MAS.

The Master File is visible in the virtual folder in the local Projects development area, but the data source file is only visible on the server itself.

When you run a report later in this exercise, WebFOCUS will identify, locate, and read the active Master File (.MAS) for the data source (.FOC) named in the request. It will then interpret the contents of the data source based on the information in the Master File. You do not have to make the data source files active.

Notice that the ibinccen folder also contains some sample procedures (.FEX files). You will not be using these procedures. (They have been created for use in demos and other exercises.) For this tutorial, you will create your own OLAP-enabled procedure.

Close WebFOCUS Environments; you will create the procedure in the local projects development area.

## **Using OLAP-enabled Data**

Behind any WebFOCUS OLAP report is a hierarchical data structure. For example, a typical hierarchy of sales regions might contain a GEOGRAPHY category including the fields Region, State, and City (in descending order). Region, the highest level in this hierarchy, would contain a list of all available regions within GEOGRAPHY. State, the second highest level in the hierarchy, would contain a list of all available states within those regions, and others.

In WebFOCUS, the hierarchical structure is generally built into the Master File for a data source, where it becomes active for any report that uses that data source. Developers or administrators who are responsible for describing data in a Master File can use WebFOCUS language. The keyword WITHIN defines the elements in each dimension in the hierarchy. For details about WITHIN syntax, see the *Describing Data With WebFOCUS Language* manual.

In addition, those working in WebFOCUS Developer Studio have access to a variety of graphical tools that make it easy to drag and drop fields into position to form a hierarchy. The hierarchy may be global to all procedures or local to one procedure:

- ❑ To define a global hierarchy in a Master File for use with multiple procedures, use the Dimension Builder.
- ❑ To define a local hierarchy as a component of a particular procedure, use the Dimension tool. The hierarchy you define with this tool does not affect the source Master File.

For details about these related tools, see the *Describing Data With Graphical Tools* manual.

## Creating the OLAP Hierarchy

### How to:

Create the OLAP Hierarchy With the Dimensions Tool

Join the TRADES and BROKERS Data Sources

This section explains how to create a procedure and use the Dimensions Tool to create a local dimension hierarchy for the procedure. You will later use the local hierarchy with OLAP analytic tools for reporting purposes.

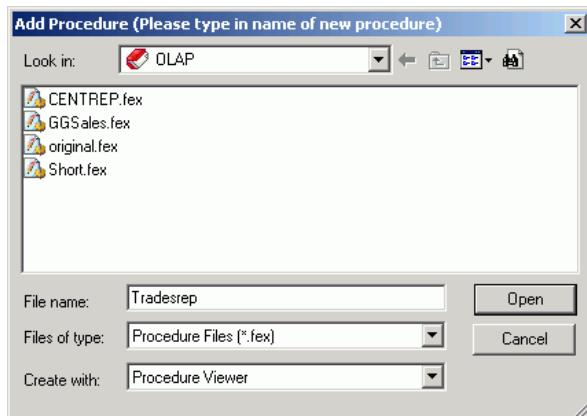
### Procedure: How to Create the OLAP Hierarchy With the Dimensions Tool

To create and name the procedure and select the tool you will use to create the report:

- 1.** If it is not already open, expand the OLAP project folder.
- 2.** Click the *Procedures* folder.
- 3.** Now right-click the Procedures folder and select *New*, then select *Procedure*. The Add Procedure dialog box opens.

If you can see the inactive procedures in the Procedures folder and want to hide them, click the *binoculars* icon.

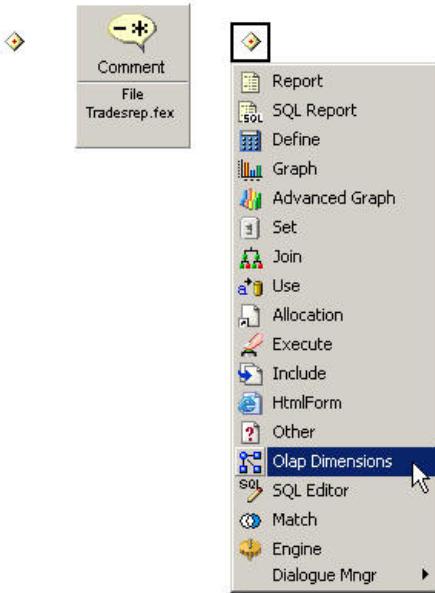
- 4.** Name the procedure TRADESREP and choose *Procedure Viewer* from the *Create with* drop-down list.



- 5.** Click *Open*.

The Procedure Viewer opens.

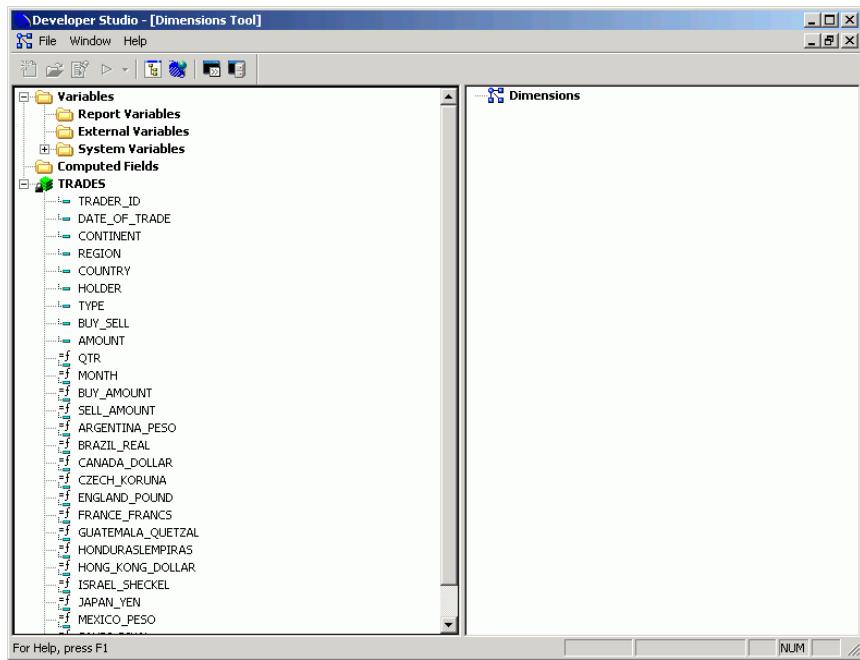
6. In the Procedure Viewer, click the component connector (yellow diamond) to the right of the Comment component.
7. Select the *Olap Dimensions* component from the component connector toolbar.



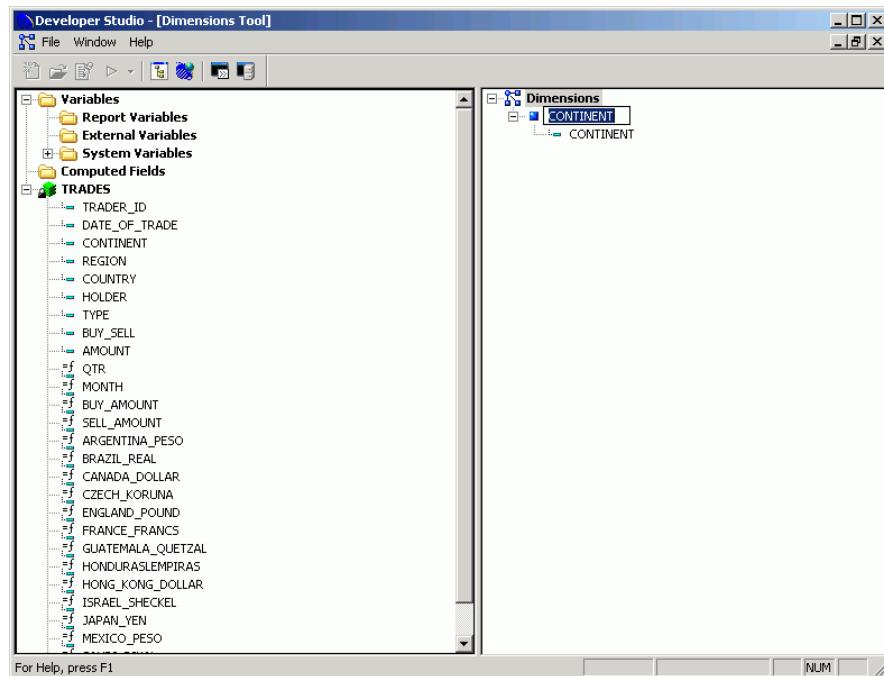
8. The Open dialog box asks you to specify the data source you will be using to create your hierarchy. Select *TRADES.MAS*.



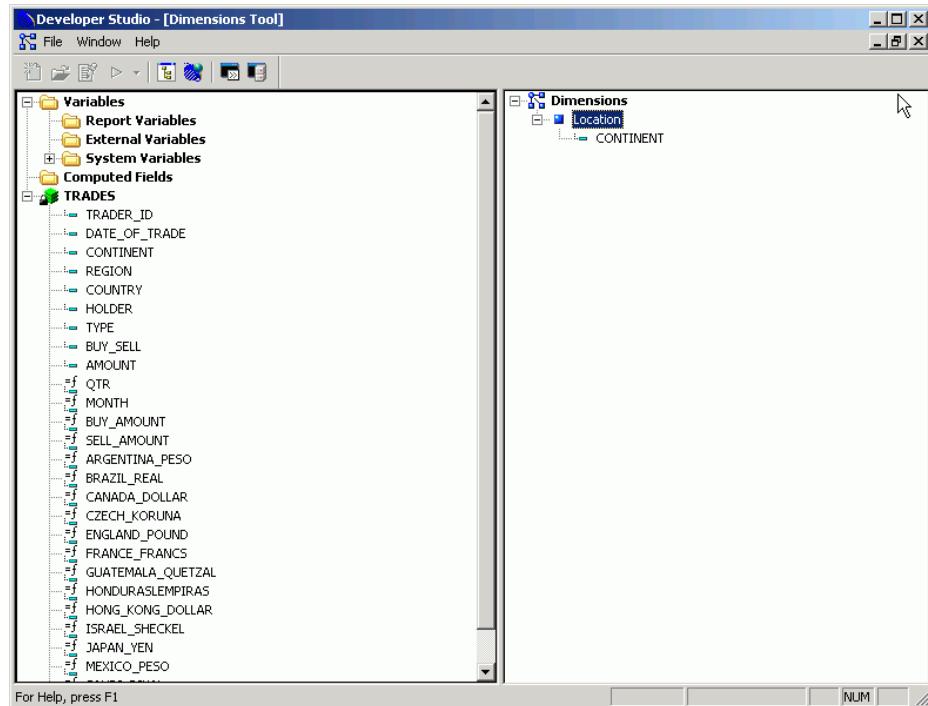
9. Click Open. The Dimensions Tool opens.



- 10.** From the left side of the window, drag the CONTINENT field and drop it directly onto the Dimensions label in the right pane of the Dimensions Tool.

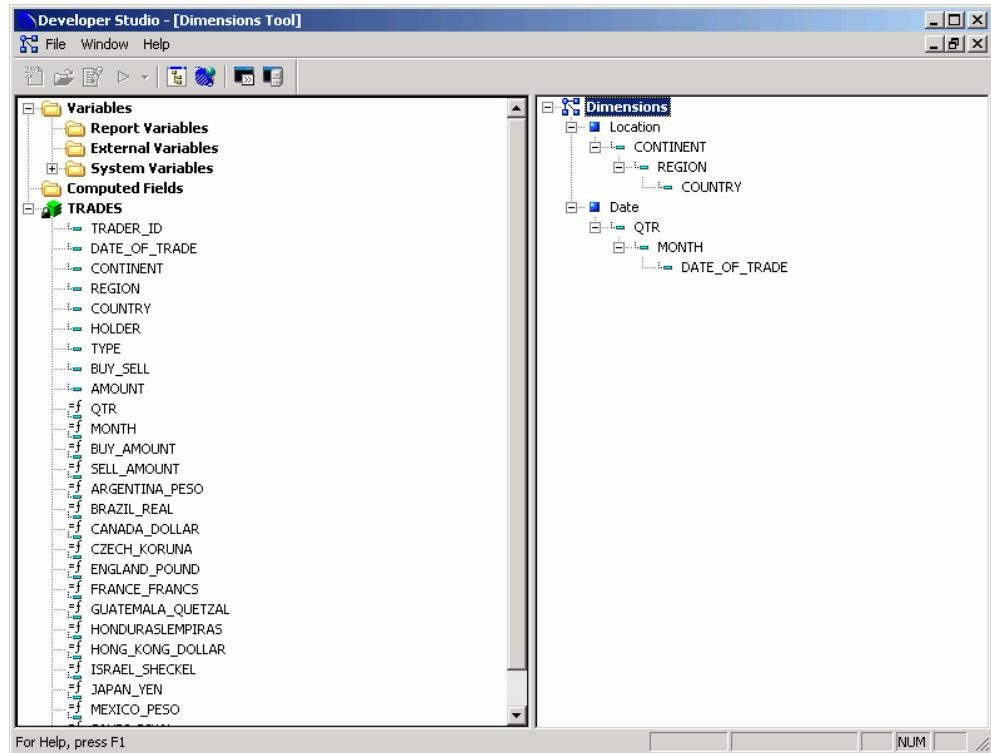


- 11.** Right-click the CONTINENT label (located below Dimensions) and select Rename.

**12** Change the CONTINENT label to *Location*.

- 13** Drag and drop the *REGION* field onto the *CONTINENT* field in the right pane of the Dimension Builder. The *REGION* field appears below the *CONTINENT* field.
- 14** Drag and drop the *COUNTRY* field onto the *REGION* field in the right pane of the Dimension Builder. The *COUNTRY* field appears below the *REGION* field.
- 15** Drag and drop the *QTR* field onto the Dimensions label.
- 16** Rename the *QTR* label as *Date*.
- 17** Drag and drop the *MONTH* field onto the *QTR* field in the right pane of the Dimension Builder. The *MONTH* field appears below the *QTR* field.

- 18.** Drag and drop the *DATE\_OF\_TRADE* field onto the *MONTH* field in the right pane of the Dimension Builder.



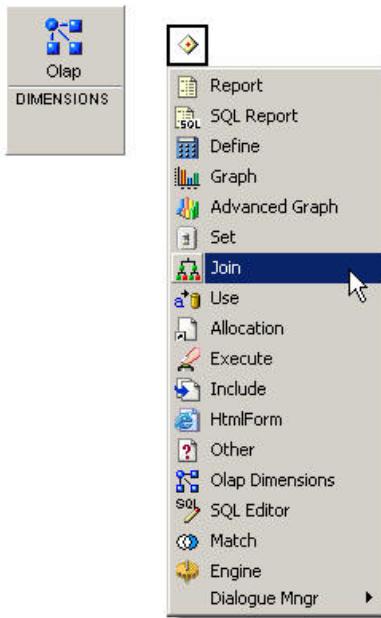
- 19.** Close the *Dimensions Tool* and click Yes to update the procedure.

You have successfully created a hierarchy and return to the Procedure Viewer. From there, you will launch the Join Editor to join two data sources.

#### **Procedure: How to Join the TRADES and BROKERS Data Sources**

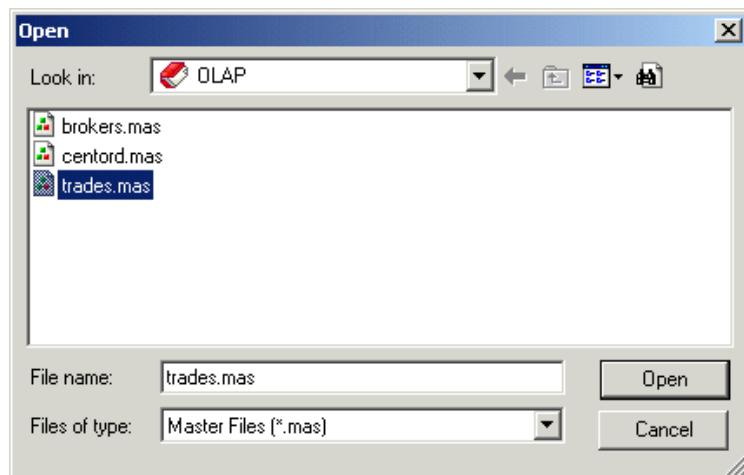
If a report requires data from two or more related data sources, you can temporarily join the files and report from them as if they were one. Complete the following steps to join the TRADES and BROKERS Master Files.

1. In the Procedure window, click the diamond to the right of the Dimensions component and select *Join* from the component connector toolbar.

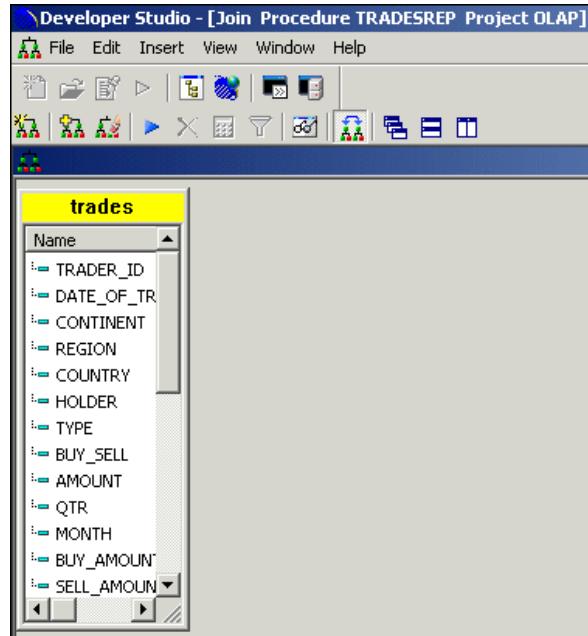


The Open dialog box asks you to specify the data source you will be using to create your hierarchy.

2. Select TRADES.MAS and click *Open*. The Join Editor opens.



- 3.** Expand the TRADES fields list.

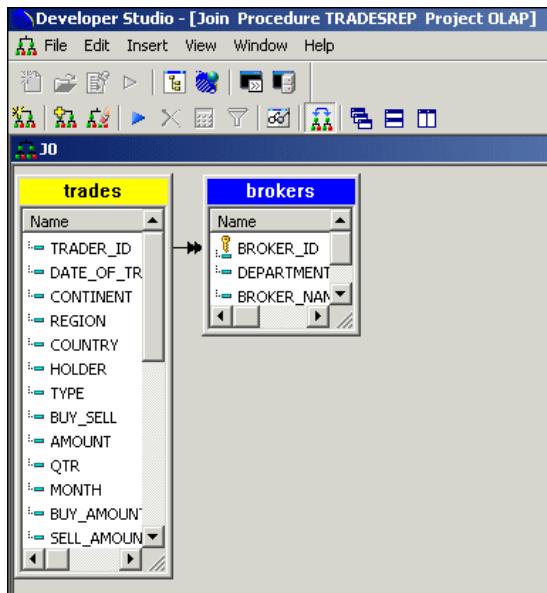


- 4.** Click the Add File button.

The File Description List for Join dialog box opens.

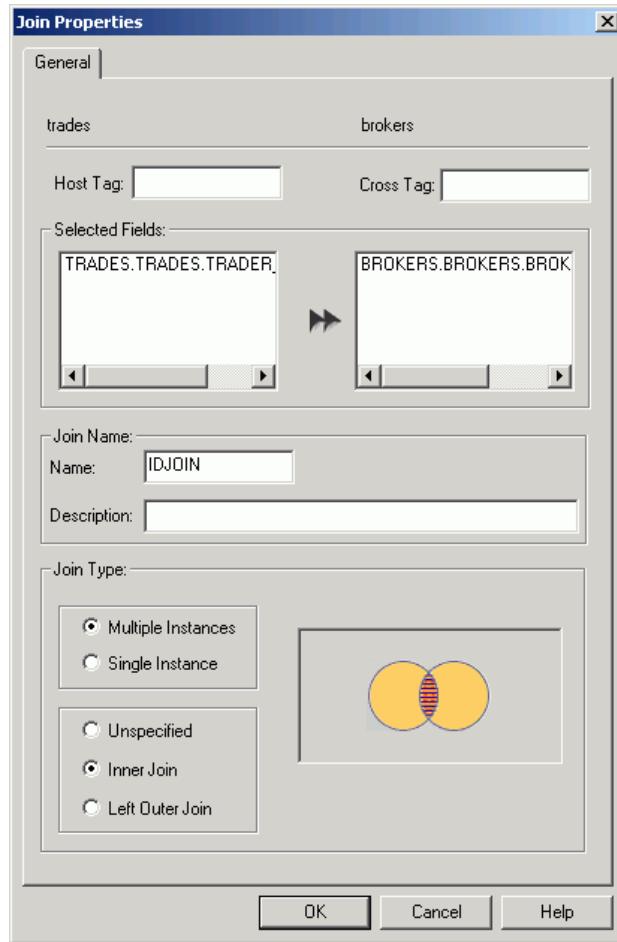
- 5.** Select the BROKERS Master File to specify the cross-referenced file for this join. Click *Open*.

The Join Editor creates a join between the TRADER\_ID field in the TRADES Master File and the BROKER\_ID field in the BROKERS Master File.



6. Double-click the double-arrow between the field lists.

- 7.** Change the Join Name to IDJOIN and click OK.



- 8.** Close the Join tool.

- 9.** Click Yes to update the procedure and return to the Procedure Viewer.

Now that you have joined these data sources, you can include their fields in the OLAP report you will create in the next exercise.

## Creating the OLAP Report With a Procedural Hierarchy

### How to:

Create the OLAP Report With a Procedural Hierarchy

Add Fields From the TRADES Data Source to the Report

Run the TRADESREP Report

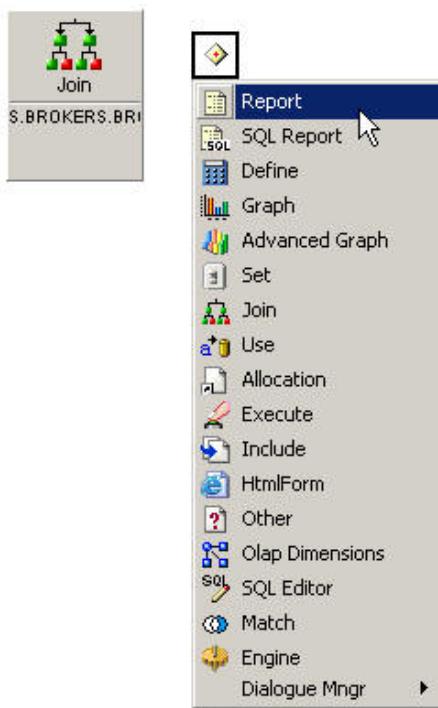
Manipulate Output With the Dimension Controls

Now you'll create a report with the Report Painter and use the TRADES data source. You will use the dimensions you created earlier with the Dimensions Tool. After you OLAP-enable and run your report, you will drill down on dimensions and measures, drag and drop them, and use the new right-click menu on the enhanced OLAP user interface.

### Procedure: How to Create the OLAP Report With a Procedural Hierarchy

1. If it is not already open, open the Procedure Viewer for the TRADESREP procedure.

- 2.** In the Procedure Viewer, click the diamond to the right of the Join component and select *Report* from the component connector toolbar.



The Open dialog box asks you to specify the data source you will be using to create your report.

- 3.** Select *TRADES.MAS*.



4. Click Open. The Report Painter opens, where you will create a report using fields from the TRADES data source.

### **Procedure: How to Add Fields From the TRADES Data Source to the Report**

To create a report, you must add fields to it. Follow these steps to add fields to your report in the Report Painter.

The Object Inspector window, located at the left side of the Report Painter, lists the fields in the TRADES Master File.

1. Double-click the following fields in the Fields tab on the Object Inspector to add them to the report:
  - CONTINENT
  - QTR
  - TRADER\_ID
  - TYPE
  - AMOUNT
2. Select the *Continent* column and press the Shift key and click the *QTR* column to select them simultaneously.
3. Click the  **By** button on the main toolbar to sort the data for the *Continent* and *QTR* columns vertically.
4. Click the *Broker\_ID* column.
5. Click the  **Sum** button.
6. Place the cursor in the Page Heading area.
7. In the Page Heading area, type *Instrument Report for Each Continent*.

**Tip:** If your report boundaries are not showing (the Page Heading and Page Footing areas), click the Report menu and select View. Click the check box for Boundaries in the General section and then click *OK*.

8. Press *Enter* to add a blank line to the heading.
9. Highlight the first line of heading text and select *Fonts* from the Properties menu.

The following font attributes are the default:

- Font: Arial

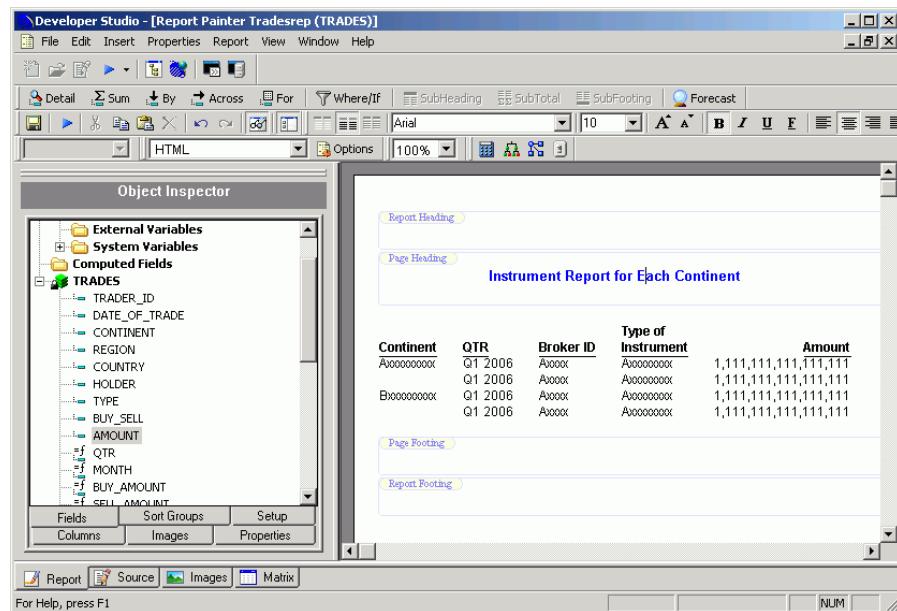
- Font Style: Bold
- Size: 10

**10.** Click the *Color* button and select blue.

**11.** Click *OK* to close the Font dialog box.

**12.** Click the *Center Justify*  button on the toolbar.

Your report should now look like this:



### **Procedure: How to Run the TRADESREP Report**

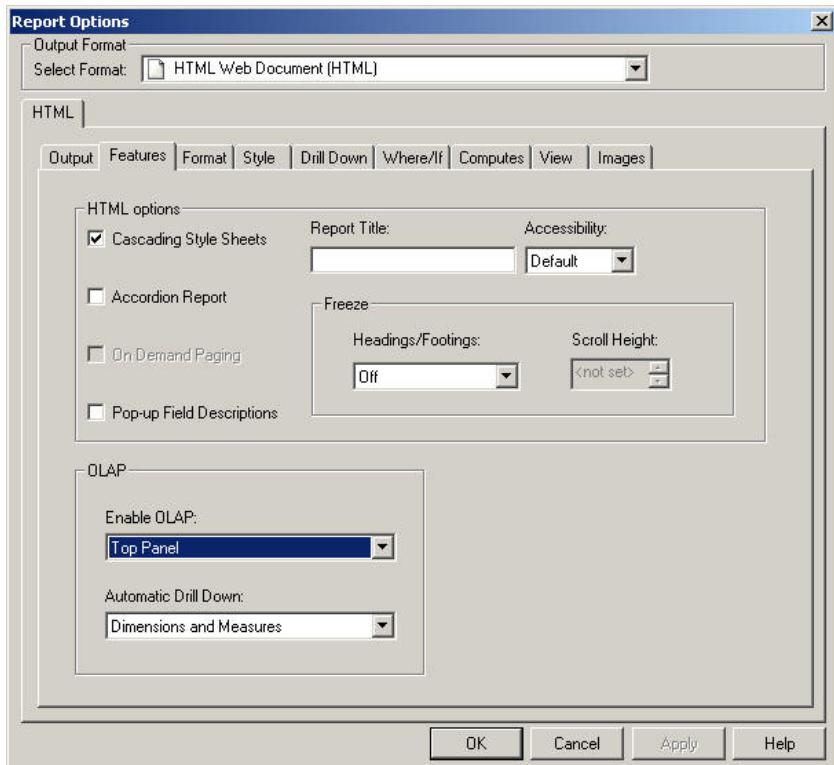
OLAP options are available on the Report Painter's Report Options Features tab. The relevant options are *Enable OLAP* and *Automatic Drill Down*.

You can also enable OLAP from the *OLAP* option on the Report menu. For details, see the *Creating Reports With Graphical Tools* manual.

Complete the following steps to OLAP-enable your report.

- 1.** From the Report menu, select *Features*. The Report Options dialog box opens at the *Features* tab.

2. In the OLAP area, select *Top Panel* from the Enable OLAP drop-down list. When you later run your report, the OLAP selections panel will appear above your report output.
3. Select *Dimensions and Measures* from the Automatic Drill Down list. When you later run your report, this will enable automatic drill downs on dimensions and measures.



4. Click *OK* to close the Report Options dialog box.

- 5.** Click the Run button.

The screenshot shows the WebFocus OLAP interface in Microsoft Internet Explorer. At the top, there's a toolbar with standard browser buttons like Back, Forward, Stop, Refresh, and Search. Below the toolbar is a menu bar with File, Edit, View, Favorites, Tools, and Help. The main area is titled "WebFocus OLAP - Microsoft Internet Explorer".  
The interface has a blue header bar with "OLAP", "Run", "Reset", "Save", and "Help" buttons. Below this is a white area containing an "OLAP Selections Panel". This panel includes dropdown menus for "Continent" (with options like "AMERICAS", "ASIA", etc.), "Region", "Country", "QTR" (quarters), "MONTH", and "Date of Trade".  
Below the selection panel is a report titled "Instrument Report for Each Continent". The report has a table with the following data:  

Continent	QTR	Broker ID	Type of Instrument	Amount
AMERICAS	Q1 1998	01042	ST. NOTES	1,122,366.600
	Q2 1998	01037	ST. NOTES	1,142,241.000
	Q3 1998	01014	ST. NOTES	11,510.400
ASIA	Q1 1998	01037	CASH	599,598.000

Notice that the OLAP selections panel appears above the report output, as you requested in step 2. Use this panel to manipulate your output. Also, notice that drill down hyperlinks are active for the dimensions and measures.

**Procedure: How to Manipulate Output With the Dimension Controls**

In an OLAP-enabled report, every dimension in the hierarchy has a control (drop-down list) next to it. You can create selection criteria using the dimension controls. You can also drag dimensions from the selections panel (above the blue colored band) to the body of the report.

- 1.** In the OLAP selections panel, click the *Continent* down arrow and double-click *AMERICAS*.

- 2.** Click the Run button.

The screenshot shows a Microsoft Internet Explorer window titled "WebFocus OLAP - Microsoft Internet Explorer". The address bar contains "http://localhost:8080/bi\_apps/WFServlet". The interface includes dimension controls for "Continent" (set to "AMERICAS"), "Region" (set to "--All--"), "Country" (set to "--All--"), "QTR" (set to "--All--"), "MONTH" (set to "--All--"), and "Date of Trade" (set to "--All--"). Below these controls are buttons for "OLAP", "Run", "Reset", "Save", and "Help". The main content area displays a report titled "Instrument Report for Each Continent". The report has a header row with columns: "Continent", "QTR", "Broker ID", "Type of Instrument", and "Amount". The data rows show the following information:

Continent	QTR	Broker ID	Type of Instrument	Amount
AMERICAS	Q1 1998	01042	ST_NOTES	1,122,366,600
	Q2 1998	01037	ST_NOTES	1,142,241,000
	Q3 1998	01014	ST_NOTES	11,510,400

- 3.** Now click the Month dimension control (the L-shaped line to the left of MONTH) and drag it to the right of the QTR column in the body of the report.

## Creating the OLAP Report With a Procedural Hierarchy

**Note:** You may also use the OLAP Control Panel window to select Month and add it as a Drill Down field. Click Run from the OLAP Control Panel.

The screenshot displays two windows side-by-side. The left window is a Microsoft Internet Explorer browser showing a report titled "Instrument Report for Each Continent". The report contains a table with columns: Continent, QTR, MONTH, Broker ID, Type of Instrument, and Amount. The data shows sales for AMERICAS across four quarters and three months, with various instrument types and their respective amounts. The right window is the "WebFOCUS OLAP Control Panel -- Web Page Dia..." which allows users to manage dimensions and measures. It shows a tree view of dimensions: Location > Date > QTR Values, MONTH Values, and Date of Trade Values. It also includes sections for "Drill Across", "Drill Down" (with options for Continent, QTR, and MONTH), and "Measures" (Broker ID, Type of Instrument, and Amount). Buttons for Run, Options, Help, and Selection Criteria are at the bottom.

Continent	QTR	MONTH	Broker ID	Type of Instrument	Amount
AMERICAS	Q1 1998	01/1998	01023	OVERNIGHT	37
		02/1998	01042	ST. NOTES	35
		03/1998	01042	ST. NOTES	39
	Q2 1998	04/1998	01023	OVERNIGHT	41

Right-click the QTR dimension in the report and select *Move to Across* from the menu.

Instrument Report for Each Continent

Continent	QTR	MONTH	Broker ID	Type of Instrument	Amount
AMERICAS	Delete	01023	OVERNIGHT	372,089,500	
	Unhide	01042	ST. NOTES	358,582,200	
	Move To Across	01042	ST. NOTES	391,694,900	
	Full Screen	01023	OVERNIGHT	417,564,400	
	Help	01023	ST. NOTES	355,814,500	
	<a href="#">03/1998</a>	01037	ST. NOTES	368,862,100	
	<a href="#">06/1998</a>	01014	ST. NOTES	11,510,400	
	<a href="#">Q3 1998</a>				
	<a href="#">07/1998</a>				

The QTR column changes from a BY field to an ACROSS field.

The screenshot shows the WebFocus OLAP interface in Microsoft Internet Explorer. At the top, there are dropdown menus for File, Edit, View, Favorites, Tools, and Help. Below the menu bar is a toolbar with icons for Back, Forward, Stop, Refresh, Search, Favorites, and other common browser functions. The address bar displays the URL [http://localhost:8080/bi\\_apps/WFServlet](http://localhost:8080/bi_apps/WFServlet). The main window contains a grid of dropdown menus for dimensions: Continent, Region, Country, QTR, MONTH, and Date of Trade. Below these is a toolbar with buttons for OLAP, Run, Reset, Save, and Help. The main content area is titled "Instrument Report for Each Continent". It shows a hierarchical structure under "QTR": "Q1 1998" and "Q2 1998". Under "Q1 1998", there is a table with columns: Continent, Month, Broker ID, Type of Instrument, Amount, Broker ID, and Type of Instrument. The data rows are: AMERICAS, 01/1998, 01023, OVERNIGHT, 372,089.500, ., .; AMERICAS, 02/1998, 01042, ST. NOTES, 358,582.200, ., .; AMERICAS, 03/1998, 01042, ST. NOTES, 391,694.900, ., .; AMERICAS, 04/1998, ., ., ., 01023, OVERNIGHT. The bottom of the window shows a "Done" button and a "Local intranet" status bar.

Now you have experimented with data manipulation in a report created with a procedural hierarchy.

You can continue to the next exercise, where you will use another data source and explore other ways of manipulating data in an OLAP-enabled report.

## **Creating the OLAP Report With the CENTORD Data Source**

### **How to:**

Create the OLAP Report With the CENTORD Data Source

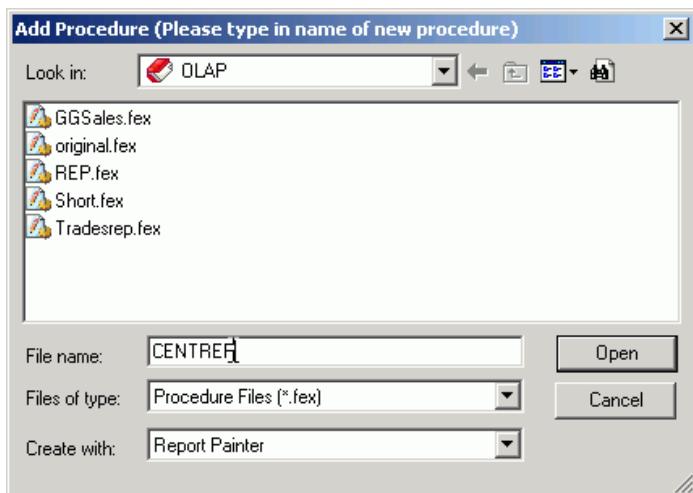
Add Fields From the CENTORD Data Source to the Report

OLAP-enable and Run the CENTREP Report

Now you'll create a report with the Report Painter and use the CENTORD data source. You do not need to create a hierarchy when you create this report, because the sample CENTORD data source already contains dimensions. After you OLAP-enable and run your report, you will drill down on dimensions and measures, drag and drop them, and use the right-click menu on the OLAP user interface.

**Procedure: How to Create the OLAP Report With the CENTORD Data Source**

1. If it is not already open, expand the OLAP project folder.
  2. Click the Procedures folder.
  3. Right-click the Procedures folder and select New then select Procedure.
- The Add Procedure dialog box opens.
4. Name the procedure CENTREP and choose Report Painter from the Create with drop-down list.



5. Click Open.

The Open dialog box asks you to specify the data source you will use to create your hierarchy.

**6.** Select *CENTORD.MAS*.



**7.** Click *Open*.

The Report Painter opens, where you will create a report using fields from the CENTORD data source.

**Procedure: How to Add Fields From the CENTORD Data Source to the Report**

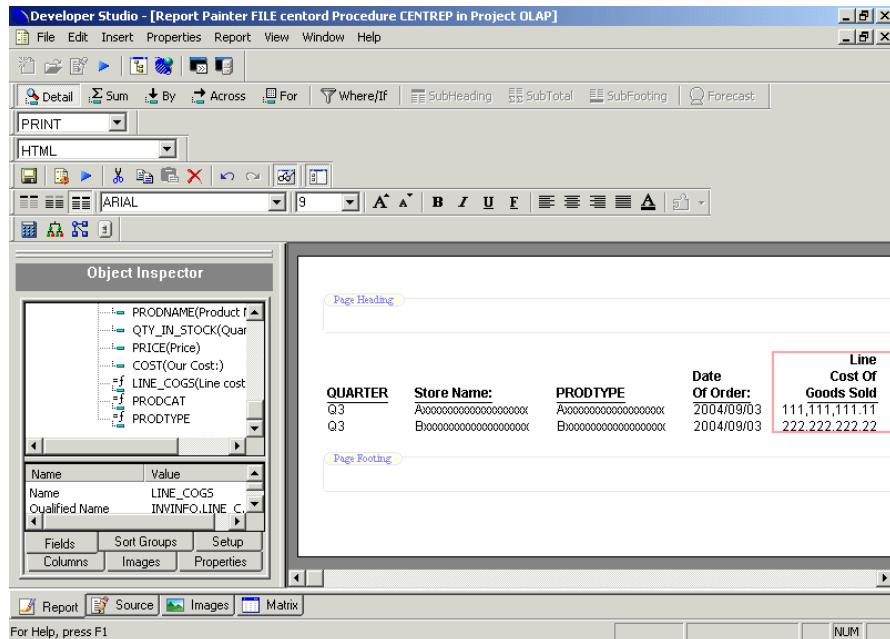
To create a report, you must add fields to it. Follow these steps to add fields to your report in the Report Painter.

The Object Inspector window, located at the left side of the Report Painter, lists the fields in the CENTORD Master File.

**1.** Double-click the following fields in the Fields tab on the Object Inspector to add them to the report:

- QUARTER
- STORENAME
- PRODTYPE
- ORDER\_DATE

LINE\_COGS



2. Select the *Quarter* column and press the Shift key and click the *Store Name* column to select them simultaneously.
  3. Click the **By** button on the main toolbar to sort the data for the *Quarter* and *Store Name* columns vertically.
  4. Click the *PRODTYPE* column.
  5. Click the **Sum** button.
  6. Place the cursor in the *Page Heading* area.
- Tip:** If your report boundaries are not showing (the *Page Heading* and *Page Footing* areas), click the *Report* menu and select *View*. Click the check box for *Boundaries* in the *General* section and then click *OK*.
7. In the *Page Heading* area, type *Quarterly Store Report*.
  8. Press *Enter* to add a blank line to the heading.

- 9.** Highlight the first line of heading text and select *Fonts* from the Properties menu.

The following font attributes are the default:

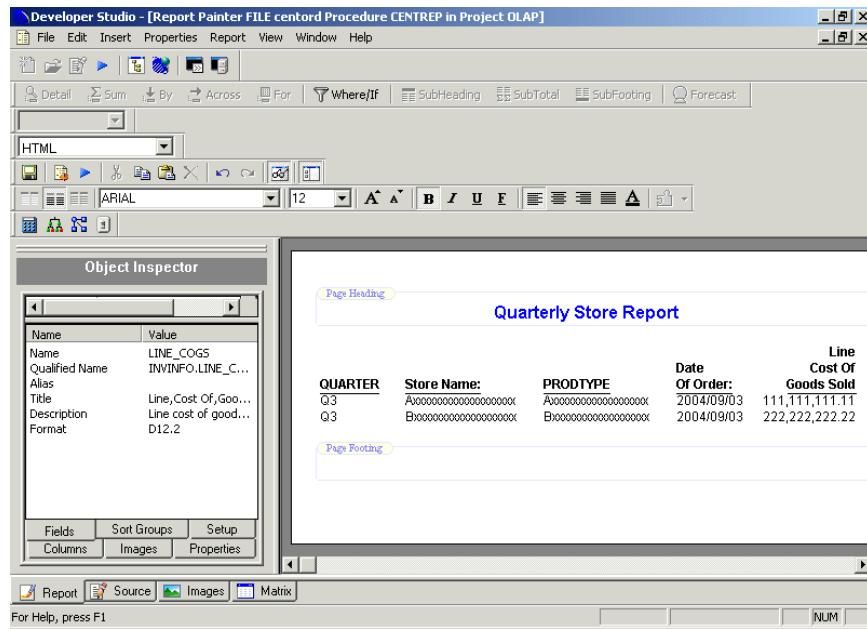
- Font: Arial
- Font Style: Bold
- Size: 10

- 10.** Click the *Color* button and select blue.

- 11.** Click *OK* to close the Font dialog box.

- 12.** Click the *Center Justify*  button on the toolbar.

Your report should now look like this:

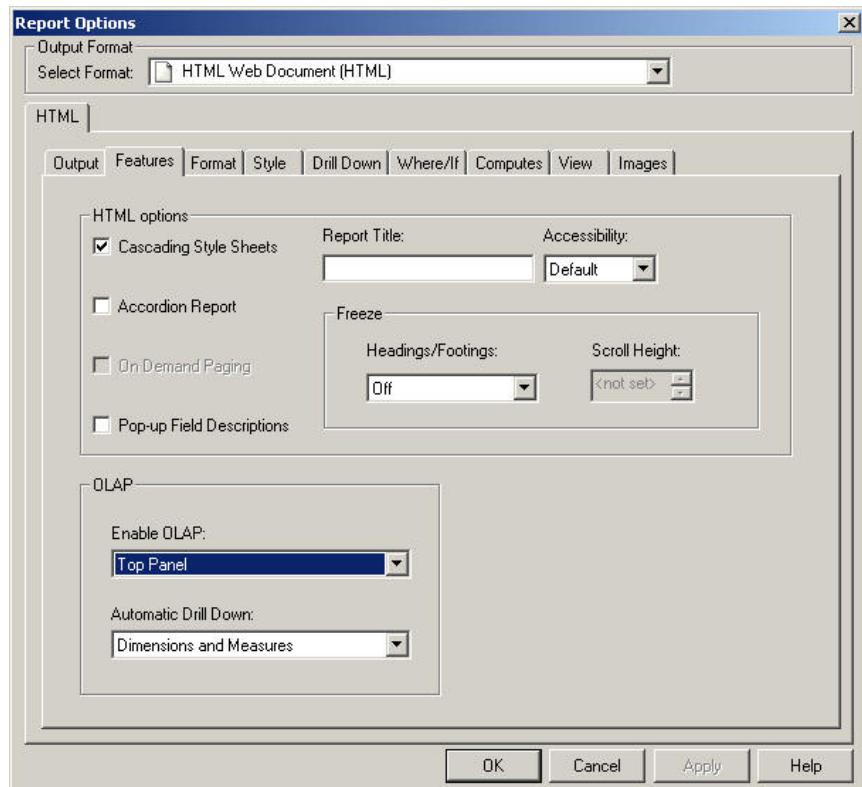


### **Procedure: How to OLAP-enable and Run the CENTREP Report**

You can OLAP-enable reports so that users can benefit from Online Analytical Processing (OLAP) to quickly change the presentation of data.

Complete the following steps to OLAP-enable your report.

1. From the Report menu, select Features. The Report Options dialog box opens at the Features tab.
2. In the OLAP area, select *Top Panel* from the Enable OLAP drop-down list. When you later run your report, the OLAP selections panel will appear above your report output.
3. Select *Dimensions and Measures* from the Automatic Drill Down list. When you later run your report, this will enable automatic drill-downs on dimensions and measures.



4. Click OK.

### 5. Click Run.

The screenshot shows a web browser window with the address bar pointing to [http://localhost/cgi-bin/fbi\\_cgi/webapi.dll](http://localhost/cgi-bin/fbi_cgi/webapi.dll). Above the main content, there is an OLAP selections panel with various dimensions and measures. The dimensions include PLANT, STATE, STORENAME, YEAR, QUARTER, MONTH, PRODTYPE, PRODCAT, and PRODNAME. The measures include QUARTER, Store Name, PRODTYPE, Date Of Order, and Line Cost Of Goods Sold. Below the panel is a table titled "Quarterly Store Report" containing data for Q1. The table has columns for QUARTER, Store Name, PRODTYPE, Date Of Order, and Line Cost Of Goods Sold. The data rows are:

QUARTER	Store Name	PRODTYPE	Date Of Order	Line Cost Of Goods Sold
Q1	AV VideoTown	Digital	2002/02/28	32,404,816.00
	Audio Expert	Digital	2002/01/02	150,546,555.00
	City Video	Digital	2002/02/18	9,563,644.00
	Consumer Merchandise	Digital	2002/01/02	15,276,017.00
	TV City	Digital	2002/01/02	46,975,210.00
	Web Sales	Digital	2002/01/02	1,179,486.00
	eMart	Digital	2002/01/02	172,482,913.00

Notice that the OLAP selections panel opens above the report output, as you requested in step 2. Use this panel to manipulate your output. Also, notice that drill-down hyperlinks are active for the dimensions and for measures.

## Manipulating Report Output

### In this section:

[Manipulating Output With the OLAP Selections Panel](#)

[Manipulating Report Output With the OLAP Control Panel](#)

### How to:

[Manipulate Data Directly in the Report](#)

OLAP provides facilities that make it easy for you to query and analyze data from within the OLAP report itself, from the OLAP selections panel, or from the OLAP Control Panel.

This section describes how to use the various OLAP tools to analyze your data. For details and more examples, see the *Creating Reports With Graphical Tools* manual.

## Procedure: How to Manipulate Data Directly in the Report

You can drag and drop dimensions directly within the report and use the right-click menu to apply data visualization.

Before you begin your analysis, the OLAP report looks like this:

QUARTER	Store Name	PRODTYPE	Date Of Order	Line Cost Of Goods Sold
Q1	AV/VideoTown	Digital	2002/02/28	32,404,816.00
	Audio Expert	Digital	2002/01/02	150,546,555.00
	City Video	Digital	2002/02/18	9,563,644.00
	Consumer Merchandise	Digital	2002/01/02	15,278,017.00
	TV City	Digital	2002/01/02	46,975,210.00
	Web Sales	Digital	2002/01/02	1,179,486.00
	eMart	Digital	2002/01/02	172,482,913.00

1. Suppose you want to see a horizontal display of the QUARTER column. Drag and drop QUARTER above the report.

The report changes and appears as follows.

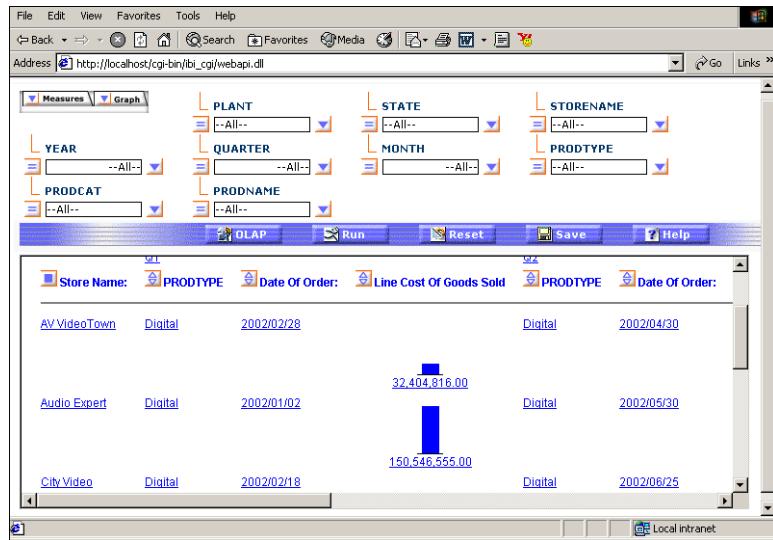
Store Name	Product Type	Date Of Order	Line Cost Of Goods Sold	Product Type
AV VideoTown	Digital	2002/02/28	32,404.816.00	Digital
Audio Expert	Digital	2002/01/02	150,546.555.00	Digital
City Video	Digital	2002/02/18	9,563.844.00	Digital
Consumer Merchandise	Digital	2002/01/02	26,563.182.00	Digital

Suppose you want to discover a trend in the *Line Cost of Goods Sold* column.

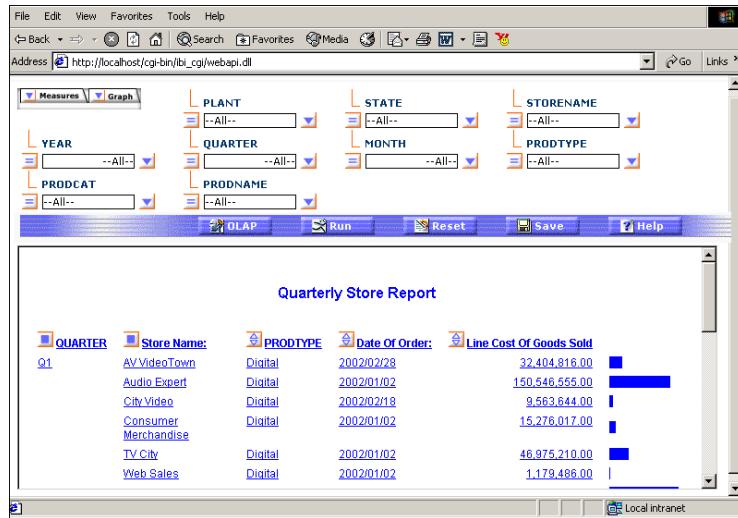
- Right-click *Line Cost of Goods Sold* and choose *Visualization*. This applies a data visualization bar graph to each value in the column.

Store Name	Product Type	Date Of Order	Line Cost Of Goods Sold	Product Type
AV VideoTown	Digital	2002/02/28	32,404.816.00	Digital
Audio Expert	Digital	2002/01/02	150,546.555.00	Digital
City Video	Digital	2002/02/18	9,563.844.00	Digital
Consumer Merchandise	Digital	2002/01/02	26,563.182.00	Digital
TV City	Digital	2002/01/02	26,563.182.00	Digital

Scroll down in the report to see the bar graphs that are now applied to the values in the Line Cost of Goods Sold column.



- Drag and drop the QUARTER field back to its original location to the left of the Store Name field. Now you see a horizontal representation of the bar graphs.



Now that you have manipulated data directly within the report, you can try different methods from the OLAP Selections Panel in the next exercise.

## Manipulating Output With the OLAP Selections Panel

### How to:

#### Manipulate Output With the OLAP Selections Panel

You can quickly customize the report from the OLAP selections panel. Every dimension in the hierarchy has a control (drop-down list) next to it. You can multi-select values from any of the dimension controls to further simplify your report output.

You can also use Measures and Graph controls. Each control contains a down arrow to the left that, when clicked, opens the corresponding pane. These controls enable you to make basic customizations on the measures present in your report. They are located to the left of the first dimension control.

### Procedure: How to Manipulate Output With the OLAP Selections Panel

This procedure demonstrates how to use the controls from the OLAP selections panel to customize your report output.

Before you begin your analysis, the OLAP report, CENTREP.FEX, looks like this:

The screenshot shows the WebFOCUS OLAP Selections Panel. At the top, there's a toolbar with File, Edit, View, Favorites, Tools, Help, Back, Forward, Home, Search, Favorites, Media, and various icons. The address bar shows the URL: http://localhost/cgi-bin/bi\_cgi/webapi.dll. Below the toolbar is a grid of dimension controls. The columns are labeled: PLANT, STATE, STORENAME; YEAR, QUARTER, MONTH; and PRODCAT, PRODNAME, PRODTYPE. Each dimension has a dropdown menu with options like --All--. To the left of these controls are buttons for Measures and Graph. Below the controls is a toolbar with OLAP, Run, Reset, Save, and Help buttons. The main area displays a report titled "Quarterly Store Report". The report table has columns: QUARTER, Store Name:, PRODTYPE, Date Of Order:, and Line Cost Of Goods Sold. The data rows are:

QUARTER	Store Name:	PRODTYPE	Date Of Order:	Line Cost Of Goods Sold
Q1	AV VideoTown	Digital	2002/02/28	32,404,816.00
	Audio Expert	Digital	2002/01/02	150,546,555.00
	City Video	Digital	2002/02/18	9,563,644.00
	Consumer Merchandise	Digital	2002/01/02	15,276,017.00
	TV City	Digital	2002/01/02	46,975,210.00
	Web Sales	Digital	2002/01/02	1,179,486.00

To use the Measures control so that this report does not display the Date of Order column:

1. Click the down arrow to the left of the Measures control and uncheck the *Date of Order* box.

The screenshot shows the WebFocus OLAP interface in Microsoft Internet Explorer. The top navigation bar includes File, Edit, View, Favorites, Tools, Help, Back, Forward, Stop, Search, Favorites, and Links. The address bar shows the URL [http://localhost:8080/ib\\_apps/WFServlet](http://localhost:8080/ib_apps/WFServlet). The main window displays a 'Measures' panel on the left with checkboxes for Product Type, Date Of Order (unchecked), and Line Cost Of Goods Sold. To the right are three groups of dropdown filters: Manufacturing Plant (QUARTER), State (MONTH), and Store Name (Product Type). Below these are filters for Product Category and Product Name. At the bottom of the interface are buttons for OLAP, Run, Reset, Save, and Help. The main content area is titled 'Quarterly Store Report' and contains a table with the following data:

QUARTER	Store Name:	Product Type:	Date Of Order:	Line Cost Of Goods Sold
Q1	AV/VideoTown	Digital	2002/02/28	17,345,896.00
	Audio Expert	Digital	2002/01/02	79,415,143.00
	City Video	Digital	2002/02/18	5,583,726.00
	Consumer Merchandise	Digital	2002/01/02	9,159,005.00

2. Click the Run button. The report output no longer shows the Date of Order column.

The screenshot shows a WebFOCUS OLAP interface. At the top, there is a menu bar with File, Edit, View, Favorites, Tools, and Help. Below the menu is a toolbar with Back, Forward, Home, Search, Favorites, Media, and various document-related icons. The address bar shows the URL [http://localhost/cgi-bin/ibi\\_cgi/webapi.dll](http://localhost/cgi-bin/ibi_cgi/webapi.dll). The main area contains a query builder with dropdown menus for Measures, Graph, PLANT, STATE, STORENAME, YEAR, QUARTER, MONTH, PRODTYPE, PRODCAT, and PRODNAME. Below the query builder is a toolbar with OLAP, Run, Reset, Save, and Help buttons. The main report area is titled "Quarterly Store Report". It displays a table with the following data:

QUARTER	Store Name	PRODTYPE	Line Cost Of Goods Sold
Q1	AV VideoTown	Digital	32,404,816.00
	Audio Expert	Digital	150,546,555.00
	City Video	Digital	9,563,644.00
	Consumer Merchandise	Digital	15,276,017.00
	TV City	Digital	46,975,210.00
	Web Sales	Digital	1,179,486.00
	eMart	Digital	172,492,913.00

**3.** Drill down on the Q1 hyperlink.

The screenshot shows the Developer Studio environment. At the top, there's a toolbar with standard file operations like File, Edit, View, Favorites, Tools, Help, Back, Search, Favorites, Media, and a Run button. Below the toolbar is a menu bar with File, Edit, View, Favorites, Tools, Help, and a status bar indicating "Local intranet". The main area has two panes. The left pane displays the OLAP cube browser with dimensions: Measures, PLANT, STATE, STORENAME, YEAR, QUARTER, MONTH, PRODTYPE, PRODCAT, and PRODNAME. The right pane shows a report titled "Quarterly Store Report" with a table of data:

MONTH	Store Name:	PRODTYPE	Line Cost Of Goods Sold
01	AV VideoTown	Digital	1,996,839.00
	Audio Expert	Digital	23,991,631.00
	City Video	Digital	1,887,934.00
	Consumer Merchandise	Digital	3,743,697.00
	TV City	Digital	7,582,109.00
	Web Sales	Digital	191,775.00
	eMart	Digital	21,062,050.00

**4.** Drill down on the 01 hyperlink.

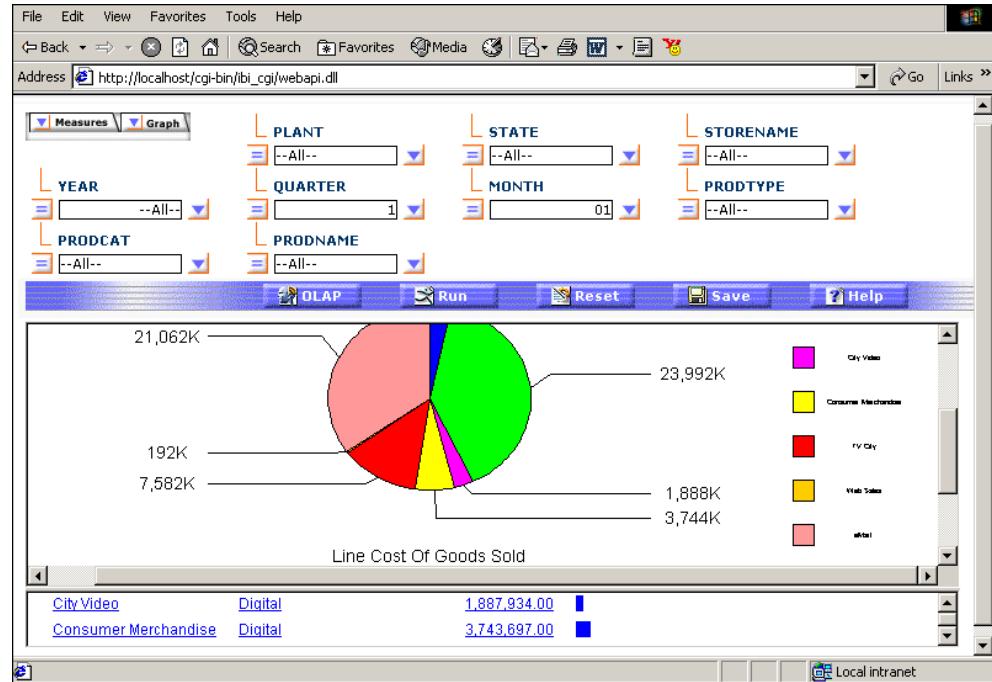
This screenshot is similar to the previous one but shows the result of drilling down on the "01" hyperlink under the "MONTH" dimension. The "MONTH" dimension now shows "01" and "03". The report table remains the same as in the previous screenshot.

Now you can use the Graph control to view a graph that shows product sales for the first month of the quarter.

**5.** Click the down arrow to the left of the Graph control.

6. Check the box to the left of *Line Cost of Goods Sold*.
7. Change the graph style from the default style, Vertical Bar Chart, to the *Pie Chart* style by clicking the *Graph* icon.
8. Click *Run*.

The Line Cost of Goods Sold is graphed for the first month.



You have just experimented with the OLAP Selections Panel to drill down on dimensions and change the graph style.

In the next exercise, you will use the OLAP Control Panel (OCP) to perform other functions that will customize your report with even greater precision.

## Manipulating Report Output With the OLAP Control Panel

### How to:

Stack Multiple Measures

Specify a Date Range From the OLAP Control Panel (OCP)

From the OLAP Control Panel (OCP), you can perform every function available to a WebFOCUS OLAP user. In this section, you will perform certain functions that can only be performed from the OCP.

For more details about the OLAP Control Panel and its functions, see the *Creating Reports With Graphical Tools* manual.

### Procedure: How to Stack Multiple Measures

When you have more than one measure, the OLAP Control Panel enables you to stack the measures of your OLAP-enabled report by either rows or columns (the default is by rows). Enable this feature by clicking the Stack Measures check box in the OLAP Control Panel.

**Note:** You cannot apply data visualization when stacking measures. For details, see the *Creating Reports With Graphical Tools* manual.

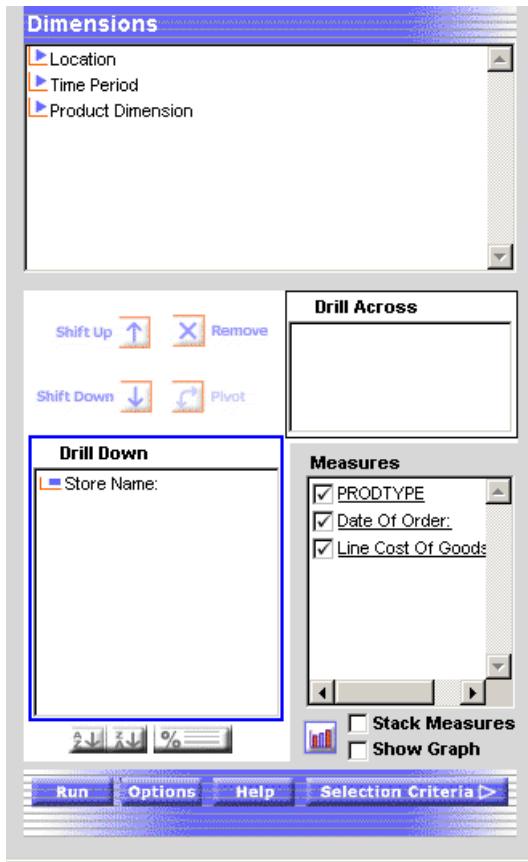
- 1.** Before stacking measures, turn off the graph control. Click the down arrow to the left of the Graph control and uncheck the box to the left of *Line Cost of Goods Sold*.  
Use the Measures control so that the report displays the Date of Order column.
- 2.** Click the down arrow to the left of the Measures control and check the *Date of Order* box.
- 3.** Click the *Line Cost of Goods Sold* check box until *Include Measure* is selected.

**4. Click Run.**

The screenshot shows a Web browser window with the address bar pointing to [http://localhost/cgi-bin/ibi\\_cgi/webapi.dll](http://localhost/cgi-bin/ibi_cgi/webapi.dll). The page title is "Quarterly Store Report". At the top, there is a navigation bar with File, Edit, View, Favorites, Tools, Help, Back, Forward, Home, Search, Favorites, Media, and Links. Below the navigation bar is a toolbar with OLAP, Run, Reset, Save, and Help buttons. On the left, there is a sidebar with dropdown menus for Measures (selected) and Graph. The main area contains several dropdown filters for dimensions: PLANT, STATE, STORENAME, YEAR, QUARTER, MONTH, PRODTYPE, PRODCAT, and PRODNAME. The QUARTER filter is set to 1, and the MONTH filter is set to 01. Below the filters is a table titled "Quarterly Store Report" with the following data:

Store Name:	PRODTYPE	Date Of Order:	Line Cost Of Goods Sold
AV VideoTown	Digital	2002/01/01	1,996,839.00
Audio Expert	Digital	2002/01/02	23,991,631.00
City Video	Digital	2002/01/14	1,887,934.00
Consumer Merchandise	Digital	2002/01/02	3,743,697.00
TV City	Digital	2002/01/02	7,582,109.00
Web Sales	Digital	2002/01/02	191,775.00
eMart	Digital	2002/01/07	21,062,050.00

5. Click the OLAP button in the selections panel to open the OLAP Control Panel.



6. Select the Stack Measures check box to display measures in separate rows.
7. Click Run to execute your report.

The measures for PRODTYPE, Date of Order, and Line Cost of Goods Sold are now displayed in stacked rows.

The screenshot shows the WebFOCUS OLAP Control Panel interface. At the top, there's a menu bar with File, Edit, View, Favorites, Tools, and Help. Below the menu is a toolbar with various icons. The address bar shows the URL [http://localhost/cgi-bin/bi\\_cgi/webapi.dll](http://localhost/cgi-bin/bi_cgi/webapi.dll). The main area has a title 'Quarterly Store Report'. On the left, there's a 'Measures' panel with dropdown menus for PLANT, STATE, STORENAME, YEAR, QUARTER, MONTH, PRODTYPE, PRODCAT, and PRODNAME. Below the measures panel is a toolbar with OLAP, Run, Reset, Save, and Help buttons. The right side of the interface shows a list of stores with their details:

Store Name:	PRODTYPE	Date Of Order:	Line Cost Of Goods Sold
AV VideoTown	Digital	2002/01/01	1,996,839.00
Audio Expert	Digital	2002/01/02	23,991,631.00
City Video	Digital		

### Procedure: How to Specify a Date Range From the OLAP Control Panel (OCP)

You can choose selection criteria from a date selection panel containing the appropriate controls for the date format. When you apply selection criteria to date elements, the results are limited by the date(s) you select. For example, you can select to view data associated with a particular date or to exclude data from the specified date.

The OLAP Control Panel provides a date selection panel that enables you to select a full date format (YYMD) or a partial date format (YMM) that includes only the month or year, and to specify a quarter of the year when applying selection criteria to date elements.

Imagine that you want to restrict information in your report to data that ranges from 2000 to 2003. Before you specify a range, unstack the measures:

1. Click the OLAP button in the selections panel to open the OLAP Control Panel.
2. Uncheck the box to the left of Stack Measures.

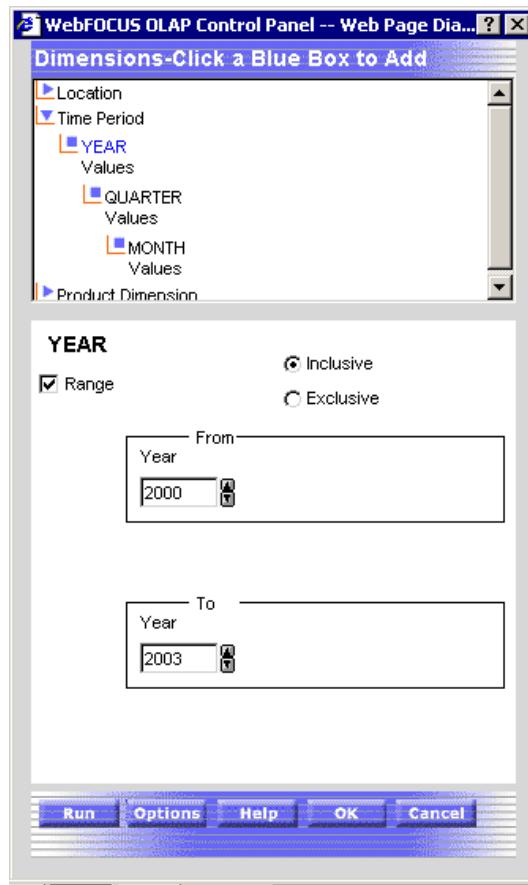
**3.** Click Run.

The screenshot shows the OLAP Control Panel interface. At the top, there are dropdown menus for File, Edit, View, Favorites, Tools, and Help. Below the menu bar is a toolbar with Back, Forward, Stop, Refresh, Search, Favorites, Media, and other links. The Address bar displays the URL: http://localhost/cgi-bin/ibi\_cgi/webapi.dll. The main area contains a grid of selection boxes for dimensions: PLANT, STATE, STORENAME, YEAR (with a dropdown for All), QUARTER (with a dropdown for 1), MONTH (with a dropdown for 01), PRODTYPE (with a dropdown for All), PRODCAT (with a dropdown for All), and PRODNAME (with a dropdown for All). Below these controls are buttons for OLAP, Run, Reset, Save, and Help. A large report area titled "Quarterly Store Report" displays a table of data:

Store Name:	PRODTYPE	Date Of Order:	Line Cost Of Goods Sold
AV VideoTown	Digital	2002/01/01	1,996,839.00
Audio Expert	Digital	2002/01/02	23,991,631.00
City Video	Digital	2002/01/14	1,887,934.00
Consumer Merchandise	Digital	2002/01/02	3,743,687.00
TV City	Digital	2002/01/02	7,582,109.00
Web Sales	Digital	2002/01/02	191,775.00
eMart	Digital	2002/01/02	21,062,050.00

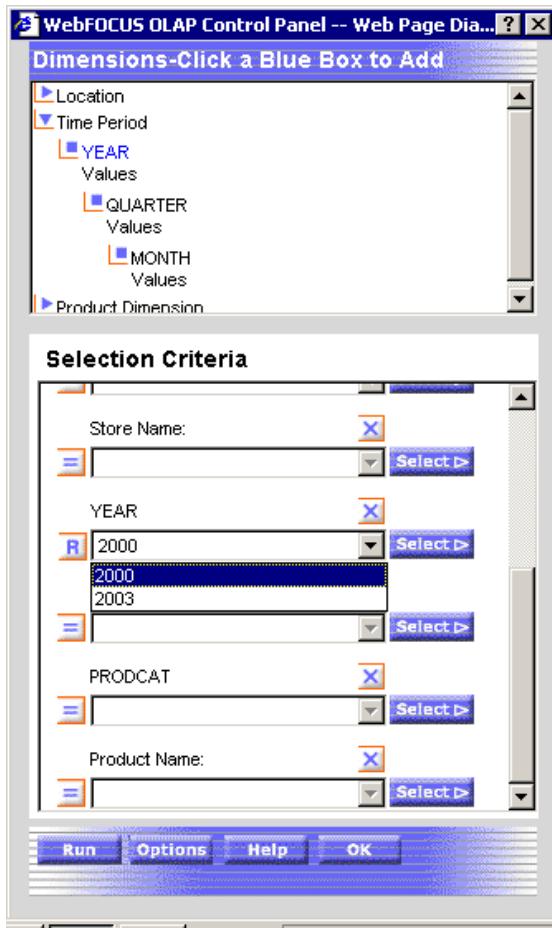
- 4.** Click the OLAP button in the selections panel to open the OLAP Control Panel.
- 5.** In the Dimensions box, click *Time Period*, then *Values* under Year.  
The Date selection panel for YEAR opens.
- 6.** Check the Range box.  
From and To drop-down lists open; you can select a range of years from these lists.
- 7.** Change the *From* year to 2000 by clicking the down arrow.

- 8.** Ensure that 2003 is the value for the *To* year.



- 9.** Click *OK* to return to the Selection Criteria panel.

- 10.** Scroll down in the Selection Criteria panel until you see the Year drop-down list. The range 2000-2003 should appear in the Year drop-down list.



- 11.** Click *OK* again.

12. Click Run to execute your report. Only order dates for Q1 that fall between the years 2000 and 2003 are shown.

The screenshot shows a Web browser window displaying an OLAP report titled "Quarterly Store Report". The report lists the following data:

Store Name	Prodtype	Date Of Order	Line Cost Of Goods Sold
AV VideoTown	Digital	2002/01/01	1,995,839.00
Audio Expert	Digital	2002/01/02	23,991,631.00
City Video	Digital	2002/01/14	1,887,934.00
Consumer Merchandise	Digital	2002/01/02	3,743,897.00
TV City	Digital	2002/01/02	7,582,109.00
Web Sales	Digital	2002/01/02	191,775.00
eMart	Digital	2002/01/02	71,662,650.00

Congratulations! You have successfully completed this tutorial. Now you have knowledge of all the different ways you can customize your OLAP-enabled reports.

# 5

## Tutorial: Creating a Reporting Application Using the HTML Composer

WebFOCUS Developer Studio's HTML Composer provides a straightforward and precise method for controlling the display of multiple reports, graphs, images (such as corporate logos), and other Web objects in a single HTML form. The HTML Composer makes it easy to layout report components to your exact specifications. You can develop report and graph procedures by launching the Report Painter or the Graph Assistant from the HTML Composer. The reports and graphs are positioned on the HTML form based on your settings.

With the HTML Composer, you can create a reporting application with procedures and HTML forms in one integrated process.

For more information about the HTML Composer, see *Designing a User Interface for a Web Application With the HTML Composer* in the *Developing Reporting Applications With Graphical Tools* manual.

### Topics:

- ❑ HTML Composer Tutorial Overview
- ❑ Creating the Century Project
- ❑ Creating the Graph
- ❑ Creating the Layout and the Report
- ❑ Running the Reporting Application

## HTML Composer Tutorial Overview

In this tutorial, before you run your reporting application, you will:

- ❑ Create the Century project.
- ❑ Add Master Files to the project.
- ❑ Create a graph.
- ❑ Create a layout into which you will insert text, an image, a report, a frame for drill-down output, and selection parameters.
- ❑ Create and style a report.
- ❑ Drill down from the report to the graph.

The following report output is generated when you finish the sequence of tasks required to create your reporting application.

HtmlPage - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites

Address http://localhost:8080/approot/financial/PRODREP.htm Go Links

Century Corporation Product Report and Graph

Please select a Plant  Please select a Year  2002  
 2001  
 2000

2002 Sales Metrics for All Products  
For the Boston Plant

Product Name:	Line Total	Cost Of Goods Sold	Line Profit Margin
110 VHS-C Camcorder 20X	\$15,974,658.33	14,541,600.00	.10
120 VHS-C Camcorder 40X	\$18,878,179.00	15,595,885.00	.21
150 8MM Camcorder 20X	\$6,344,989.64	6,022,560.00	.05
2 Hd VCR LCD Menu	\$4,532,246.79	4,143,351.00	.09
250 8MM Camcorder 40X	\$1,111,660.98	1,109,120.00	.00
330DX Digital Camera 1024K P	\$454,840.33	411,134.00	.11

## Creating the Century Project

### In this section:

Add Master Files to Your Project

Add the CENTORD Data Source to Your Project

As an application developer for Century Corporation, your task is to create an application that contains reports about the sales metrics for all of the plants in the company. The report should include drill-down links that enable users to view a graphical display of data.

First, you will create a project called Century in the local projects area of the Developer Studio Explorer. This is where you access and create files. You will build your reporting application within this project.

To create the project, follow the steps in [Creating the OLAP Project](#) on page 141 of the previous chapter and name the project Century instead of OLAP. When you have finished creating the project, return to this section to begin this tutorial.

### Add Master Files to Your Project

1. Click the *Master Files* folder under the Century project.

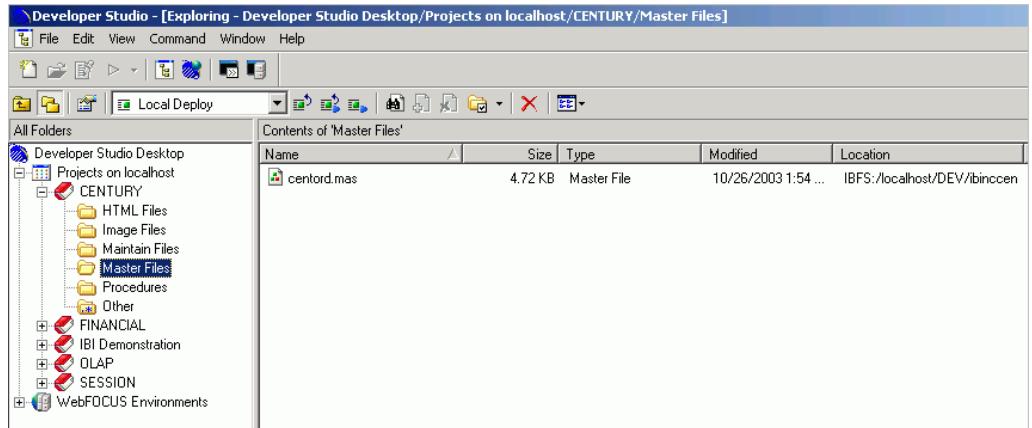
You will see a list of all *Master Files* in the path specified when you created the project.

Notice that the borders around each of the file icons in the Name column are grayed out. This indicates that the files are available, but not active for your project. In the following steps, you will associate the Master File required for the tutorial with the Century project.

2. Right-click *CENTORD.MAS*.
3. Select *Add to Project* from the menu.

The icon for this Master File is now active for your project and the border around this file icon is dark (no longer grayed out).

4. Click the *binoculars* icon to limit the list to the active Master Files.



**Tip:** You can view the full Master File list by clicking the binoculars icon again.

## Add the CENTORD Data Source to Your Project

**Note:** The Centord data source is not installed by default. For the purposes of this tutorial, you must add the data source to your project.

1. Click the *Procedures* folder under the Century project.
2. Click the *binoculars* icon to show all .fex procedure files in this folder.
3. Right-click *loadord.fex* (scroll down to find this file) and select Add to Project.
4. Right-click *loadord.fex* and select Run.

A new browser window opens displaying the following message, No HTML Output. This should confirm that the Centord data source has been added to your project.

5. Close the browser window.

## Creating the Graph

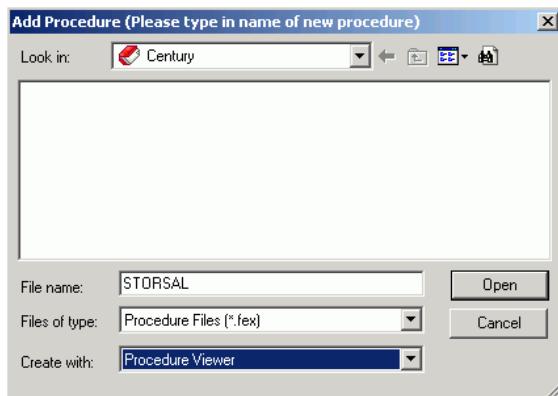
### How to:

- Create the Graph
- Create a Heading for the Graph
- Limit Graphed Data
- Customize Your Graph

Begin by creating a procedure that contains a graph. Later, you will add this graph to a frame in the HTML file and drill down to it from a report that you will soon create.

### Procedure: How to Create the Graph

1. Right-click the *Procedures* folder under the *Century* project.
2. Select *New*, then select *Procedure* from the pop-up menus.  
The Add Procedure dialog box opens.
3. Type *STORSAL* in the *File name* text box and verify that *Procedure Files (\*.fex)* is selected from the *Files of type* drop-down menu.
4. From the *Create with* drop-down menu, select *Procedure Viewer*.



5. Click *Open*.  
The Procedure viewer window opens.
6. Click the diamond to the right of the default Comment component and select *Advanced Graph* from the component connector toolbar.

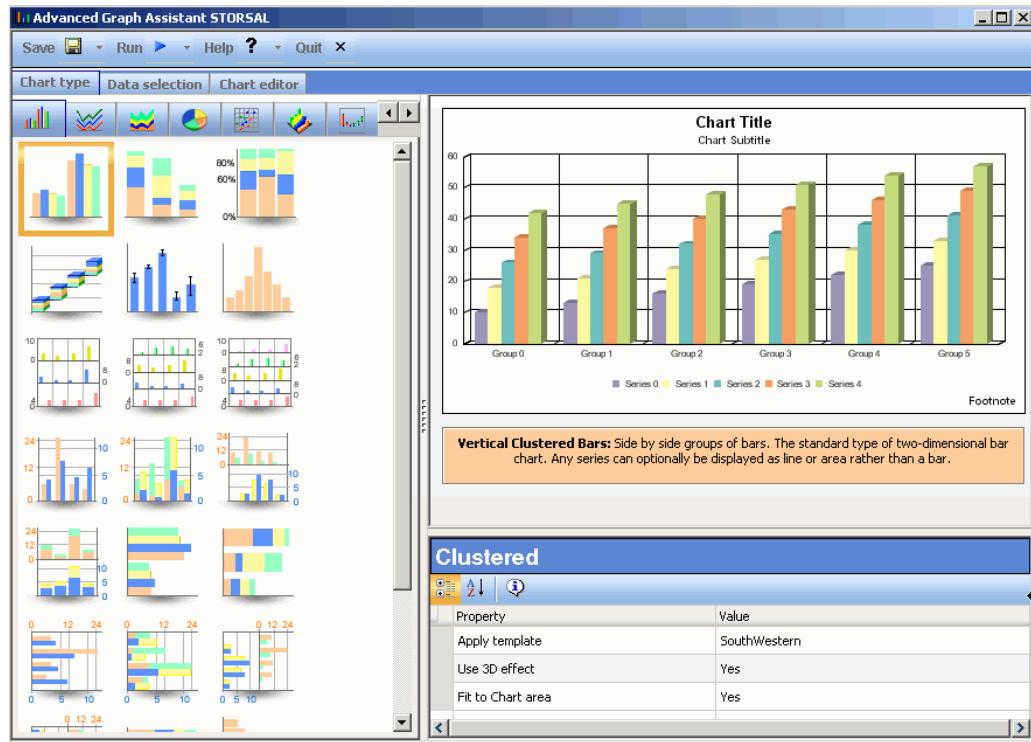
or

Click the Advanced Graph Tool icon on the Procedure Viewer toolbar.

7. Select the CENTORD Master File and click Open.

The Advanced Graph Assistant opens.

The following image is the Advanced Graph Assistant which opens at the Chart type tab.



8. Select Line from the Chart type subtabs.

The available line chart types appear.

9. Select Absolute as the type of Line chart.

The Advanced Graph Assistant refreshes showing a sample absolute line chart.

10. Click the Data selection tab.

11. Double-click LINEPRICE in the Fields list to add it as the Y axis in the Available Fields area.

LINEPRICE is added as the field value plotted on the Y axis.

- 12.** Select *STORENAME* in the Fields list, then click and drag the field into the *X group axis* heading in the Available Fields area.

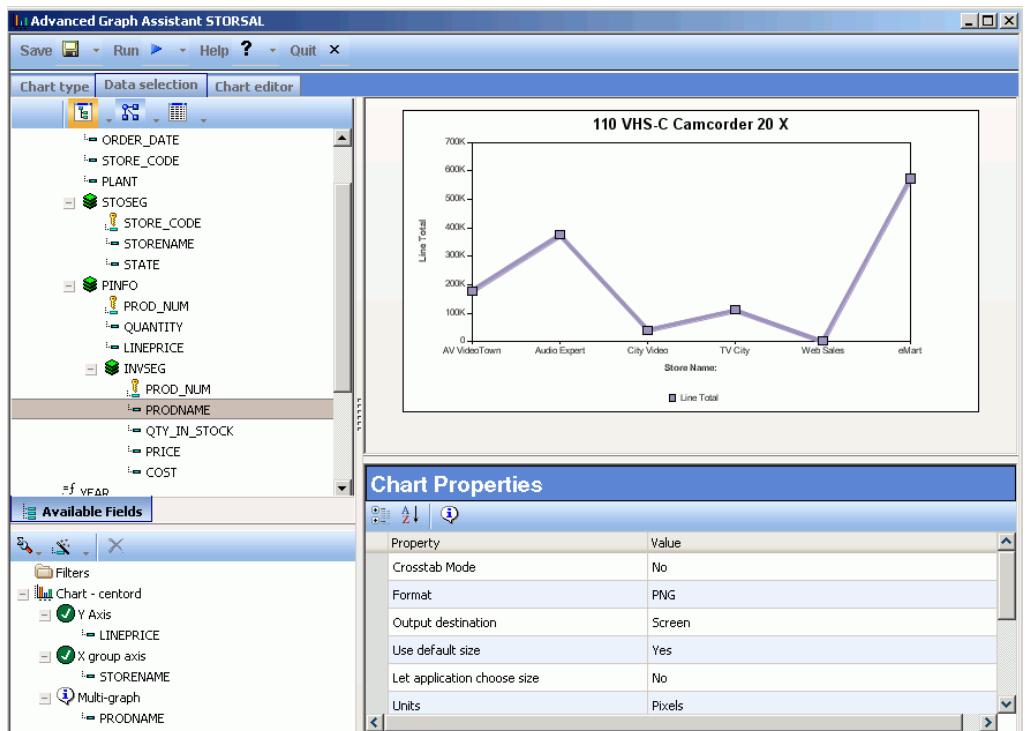
*STORENAME* is added as the field value plotted on the *X group axis*.

- 13.** Select *PRODNAME* in the Fields list, then click and drag the file into the *Multi-Graph* heading in the Available Fields area.

Multi-graph creates a separate graph for each value of this field, in this case, the Product Name.

- 14.** Click Save.

The following image shows the completed Data selection tab with fields selected for the Y axis, X axis, and Multi-graph areas.



### Procedure: How to Create a Heading for the Graph

Adding a heading to your graph provides important information to describe the data you want to display. You can add headings and footings for your graph from the Data selection tab of the Advanced Graph Assistant. In this tutorial, you will add a heading with an embedded field to the graph.

1. Click the *Data selection* tab.
2. Select *Multi-graph* from the Available Fields area.

The Chart Properties refresh for the Multi-graph field.
3. Click the *Heading Value* field in the Chart Properties to open the Heading dialog box.
4. Type *Sales of* and leave a space.
5. Double-click *PRODNAME* from the Field list.

<CENTORD.INVSEG.PRODNAME is added to the Heading.
6. Place the cursor after <CENTORD.INVSEG.PRODNAME and leave a space.
7. Type *for Each Store*.
8. Click *Apply* then *OK* to apply and close the Heading dialog box.

The following image shows how the Heading dialog box in the Advanced Graph Assistant should appear.

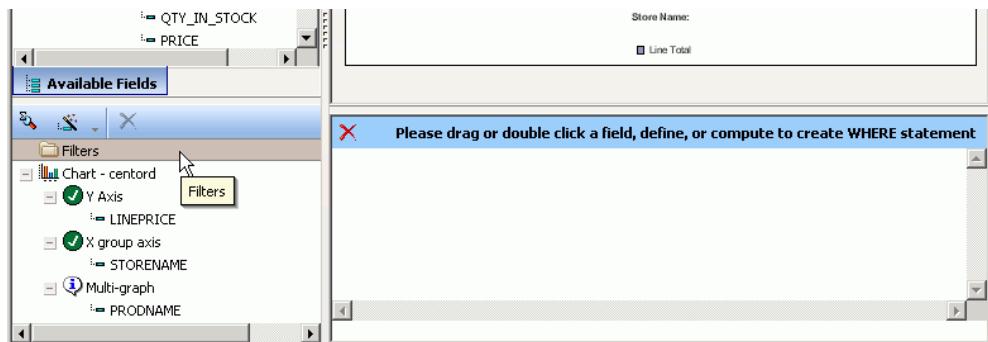


#### **Procedure: How to Limit Graphed Data**

You can limit the data displayed in a report or graph by adding a filter. Here you will create a statement that limits the data in the graph to a certain product. You will enter this criteria as a parameter, and use the parameter later in the tutorial when you set the drill-down option for the report.

1. Click the *Data selection* tab.
2. Click *Filters* from the Available Fields area to view the Filter expression builder and specify record selection criteria.

The following image shows the Filter expression builder which appears in the Advanced Graph Assistant.



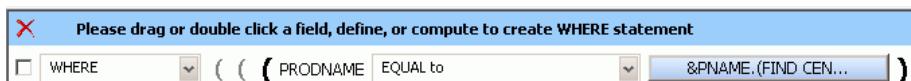
**3.** In the Filter expression builder:

- Double-click *PRODNAME* from the Fields list.
- Select *Equal* to from the Logical Relation drop-down list.
- Click *Select Value* to open the Select Value-Multiple Values dialog box.
- Click the *Parameter* option from the Select Value dialog box.
- Click the *Edit Parameter Properties* icon.

The Select Value-Variable Editor dialog box opens.

- Type *PNAME* in the Name input field.
- Select *CENTORD* as the Data Source Value.
- Select *Product Name* as the Value field.
- Click *OK* to close the Select Value-Variable Editor dialog box.
- Click *OK* to close the Select Value-Multiple Values dialog box.

The *PNAME* parameter is added as the Filter, as shown in the following image.



**4.** Click *Save* to save your selections.

You will use the *PNAME* parameter later to set up the drill-down report.

**Procedure: How to Customize Your Graph**

From the Chart editor tab in the Advanced Graph Assistant, you can select properties for your graph. You may adjust the background color, font, templates, line border colors, and so on; for your chart, axes, and labels. Here you will add background color to the graph.

- 1.** Click the *Chart Editor* tab.

The Chart Editor shows all of the chart objects and their properties.

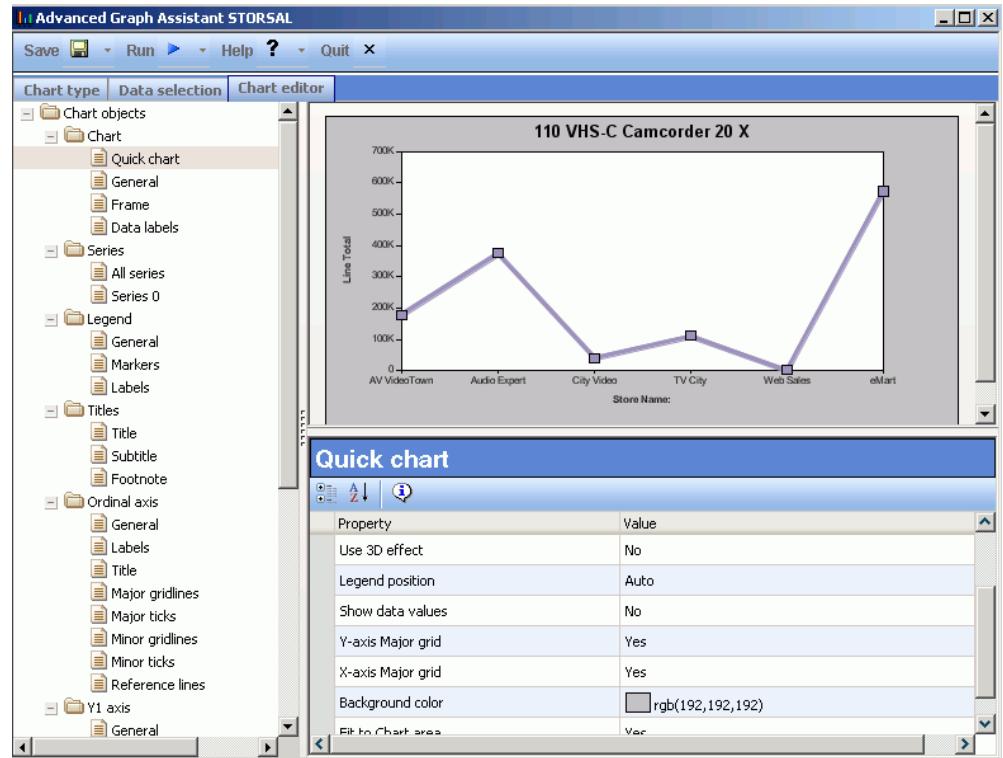
- 2.** Select *Quick Chart* from the Chart folder.
- 3.** Double-click in the *Background color Value* field to open the Color dialog box.
- 4.** For this example, select *Gray*.

The selected color appears and the color attributes are filled in.

- 5.** Click *OK* to close the Color dialog box.

The background color is applied to the chart.

The following image is an example of the Quick Chart properties in the Chart editor tab of the Advanced Graph Assistant.



6. Click *Quit* and save your graph.

## **Creating the Layout and the Report**

### **How to:**

- Create the Report Layout
- Add Text and Color to the Layout
- Create a Report From the Layout
- Add a Calculated Value to the Report
- Limit the Data to a Selected Plant and Year
- Create a Page Heading for the Report
- Style Your Report
- Set Up the Drill-Down Report
- Customize Parameters
- Create the Target Frame For Drill-Down Output
- Reorganize the Layout and Add an Image

Here you will create the layout for the project and add elements to it, such as text, background color, reports, images, and a target frame for the drill-down output. You will also customize the parameters and rearrange the items in your layout.

For the report (which you will create directly from the layout), you will add calculated values, Where statements to limit the data in the report, and drill down capabilities. You will also style the report with color, borders and a page heading.

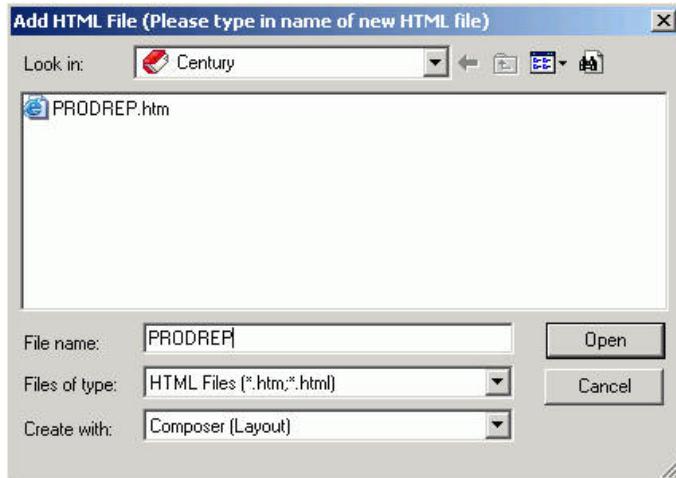
### **Procedure: How to Create the Report Layout**

Complete the following steps to create a Layout procedure called PRODREP.

- 1.** Right-click the *HTML Files* folder under the Century project.
- 2.** Select New, then select *HTML File* from the pop-up menus.

The Add HTML dialog box opens.

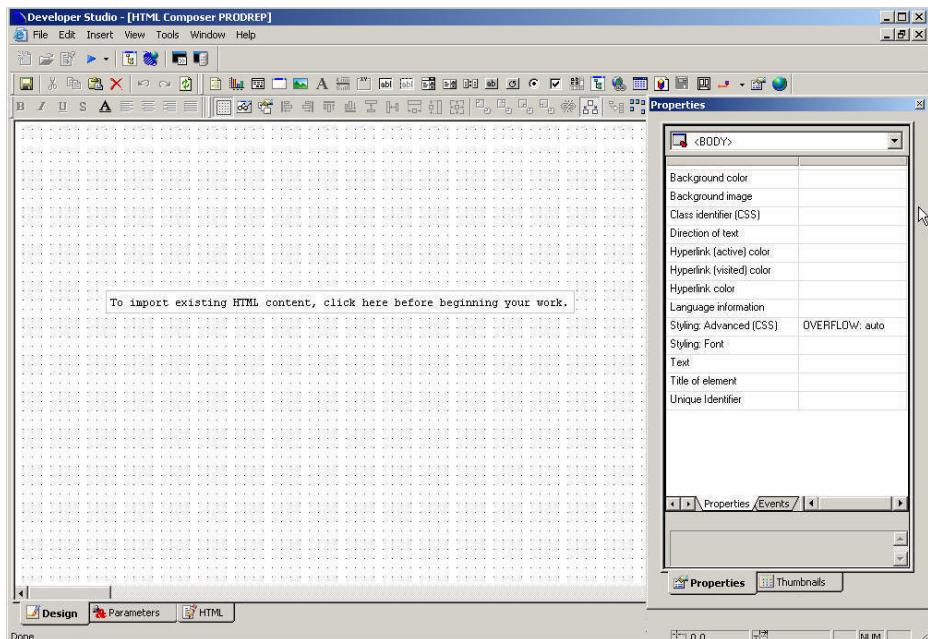
3. Type PRODREP in the File name text box.



**Note:** Composer (Layout) is selected as the default.

4. Click Open.

The HTML Composer opens, as shown in the image below.



### **Procedure: How to Add Text and Color to the Layout**

Add a heading to your application, style the heading, and add a background color.

1. Click the *Insert text*  button.

Your mouse pointer will change to crosshairs.

2. Click and drag the crosshairs to create a rectangular text box.

You can resize the box after you enter and style the text.

3. Click on the box and type *Century Corporation Product Report and Graph*.

4. Click anywhere outside of the heading text box, then right-click the text box and select *Style* from the context menu.

The Style Composer dialog box opens with *Font* highlighted in the list at the far left.

5. To set the *Font* type, in the *Font name* area, select the *Family* option, then click the ellipse button to the right. The Font Picker dialog box opens, select *Arial* in the Installed fonts area, click the right arrow to move *Arial* to the Selected fonts area, and click *OK*.

6. To set the font *Style*, select *Bold* from the Absolute drop-down list in the *Bold* area.

7. To set the font *Size*, in the *Size* area, select *px* from the Specific drop-down list and type *16* in the input area to the left.

8. To set the font *color*, select *Navy* from the color drop-down list in the *Font attributes* area.

9. To set the text *alignment*, select *Text below Background* in the list at the far left, then select *Centered* from the Horizontal drop-down list in the *Alignment* area.

This centers the heading text horizontally within the text box.

10. To set the heading *background color*, select *Background* below *Font* in the list at the far left, then select the *Transparent* option below the *Background color* menu.

This allows the light color you will select for the background color to show through the heading.

11. Click *OK* to close the Style Composer.

12. Resize the heading text box as necessary by clicking and dragging the borders.

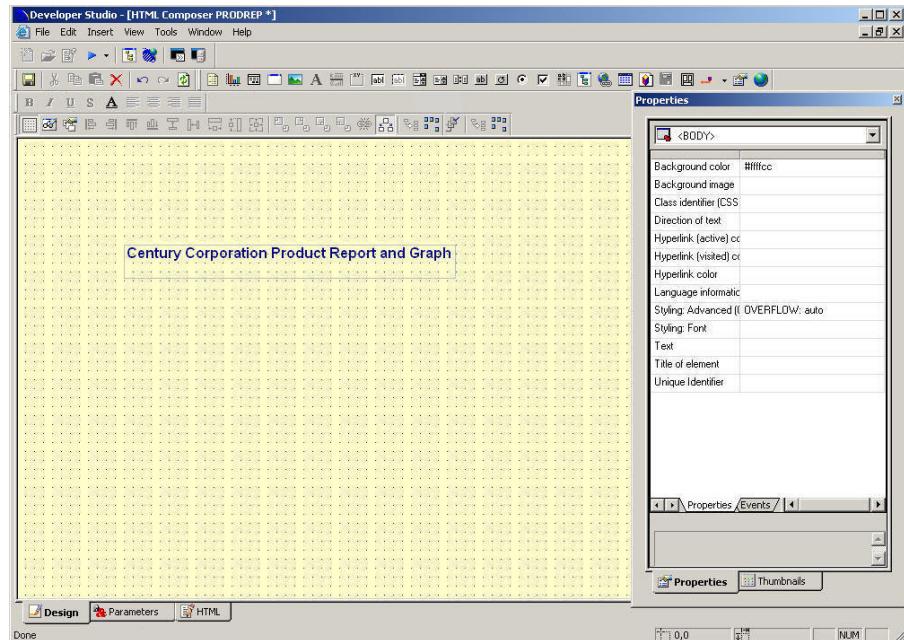
13. To set the background color for the HTML page, select *BODY* from the top drop-down list in the Properties tab of the Properties bar.

- 14.** Click once in the empty field to the right of Background color, then click the ellipse button that appears at the far right of the empty field.

The Color Picker dialog box opens.

- 15.** Select any light color and click OK.

The following image shows how the HTML Composer should appear at this point, depending on the size of your text box.



### Procedure: How to Create a Report From the Layout

You will now create the report in the Report Painter which is accessed directly from the HTML Composer.

1. Click the *Insert new report* button.

The mouse pointer changes to crosshairs.

2. Click and drag the crosshairs and create a report area placeholder.

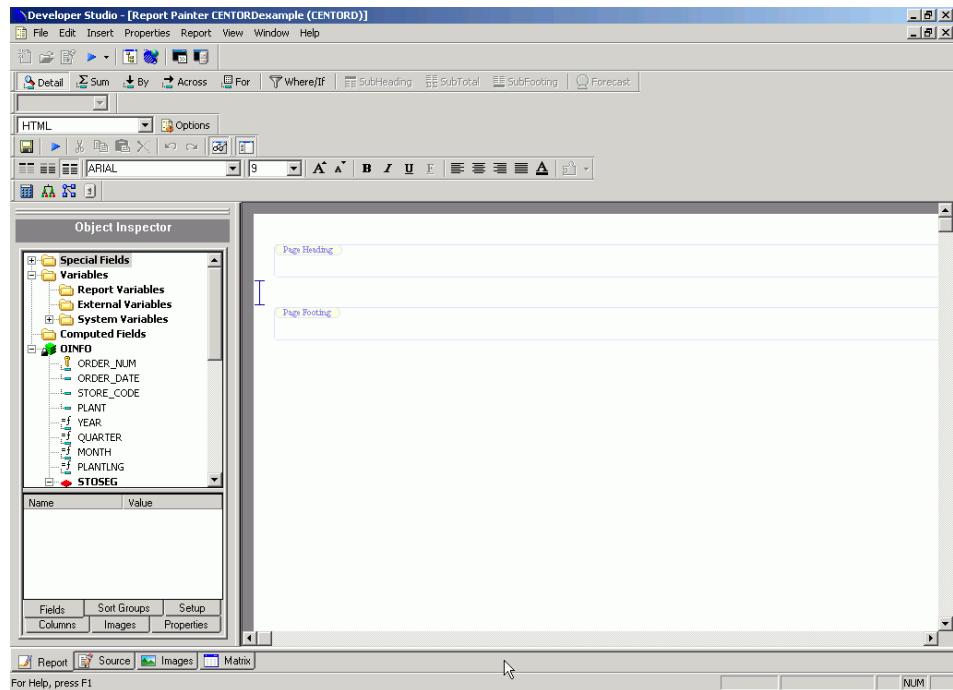
**Note:** You can resize and reposition the report placeholder at any time.

3. Double-click the report placeholder.

The Open dialog box opens.

4. Select the CENTORD Master File and click Open.

The following image shows the Field Tree in the Report Painter window. The Object Inspector, located in the left pane, lists the fields in the CENTORD Master File.



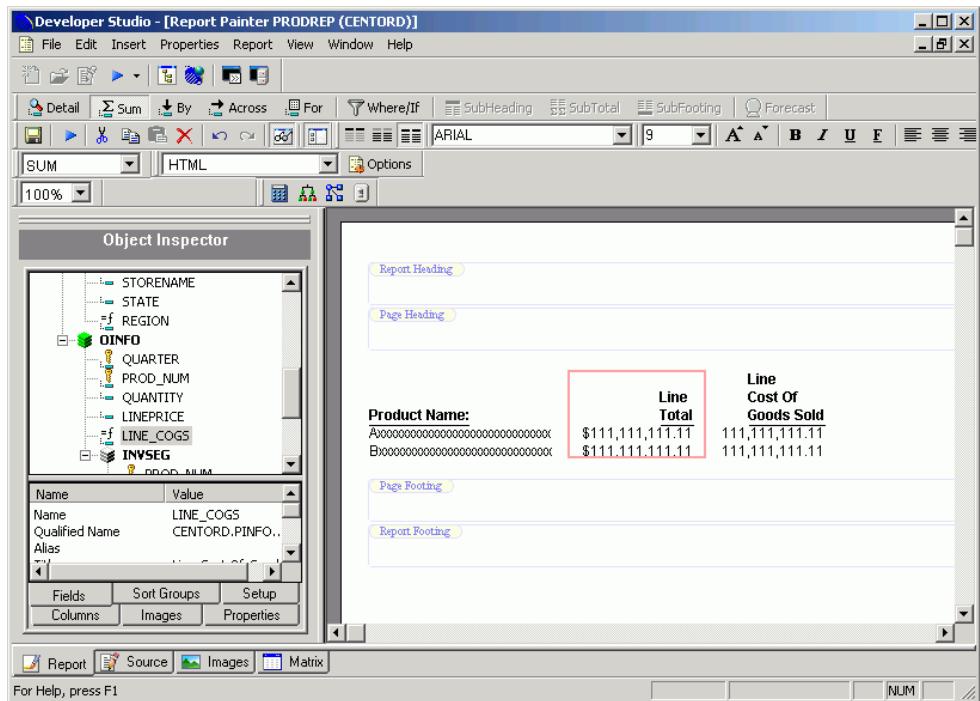
5. Double-click the following fields in the Object Inspector Fields tab to add them to the report:

- PRODNAME (in the INVSEG directory)
- LINEPRICE (in the PINFO directory)
- LINE\_COGS (in the INVSEG directory)

6. Select the Product Name field and click the  button on the toolbar. This sorts all of the data vertically by product name.

7. Select the *Line Total* column and click the **Sum**  button. This sums the data in the *Line Total* column.

The following image shows how the new report should appear at this point.



### Procedure: How to Add a Calculated Value to the Report

Continue creating your report by adding a calculated value called *PROFIT*. This field is created using a calculation with two existing fields in the CENTORD data source, *LINE\_PRICE* and *LINE\_COGS*.

- From the Report menu, select *Computes*.

The Report Options dialog box opens at the *Computes* tab.

- Type *PROFIT* in the input area labeled *Field*.
- Type *D4.2* in the input area labeled *Format*.

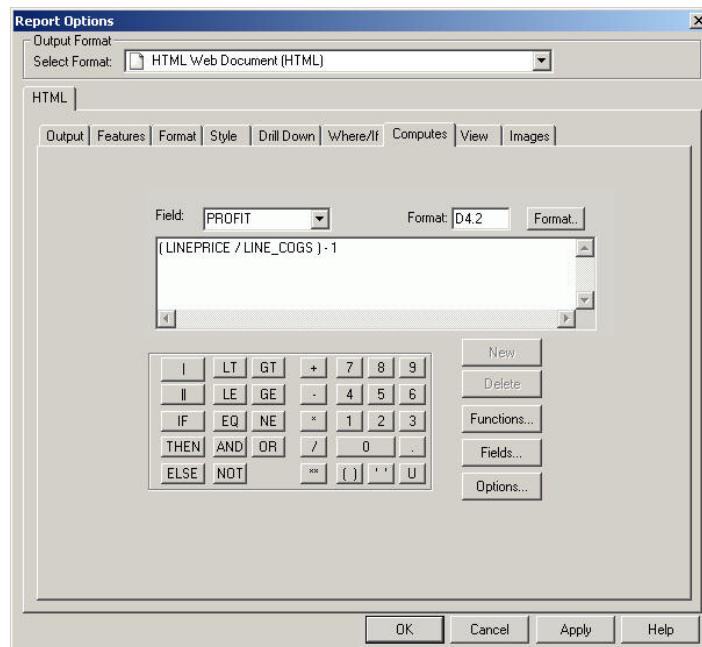
**Tip:** In this case, you know the exact format you want for this field. If you are unsure of the format and want to see all available formats, click the *Format* button to access the Format dialog box.

4. Place the cursor in the box below the input area labeled Field.
5. Create the following expression:  $(LINEPRICE / LINE_COGS) - 1$ .

To create this expression:

- Click the *Fields* button.
- Double-click *LINEPRICE* in the CENTORD field list box.
- Click the forward slash (/) on the Report Options calculator.
- Double-click *LINE\_COGS* in the CENTORD field list box.
- Highlight the statement and click the double parentheses ( ).
- Click the minus (-) sign and then the number 1.

The following image shows how the Report Options expression should appear.



6. Click *OK*.

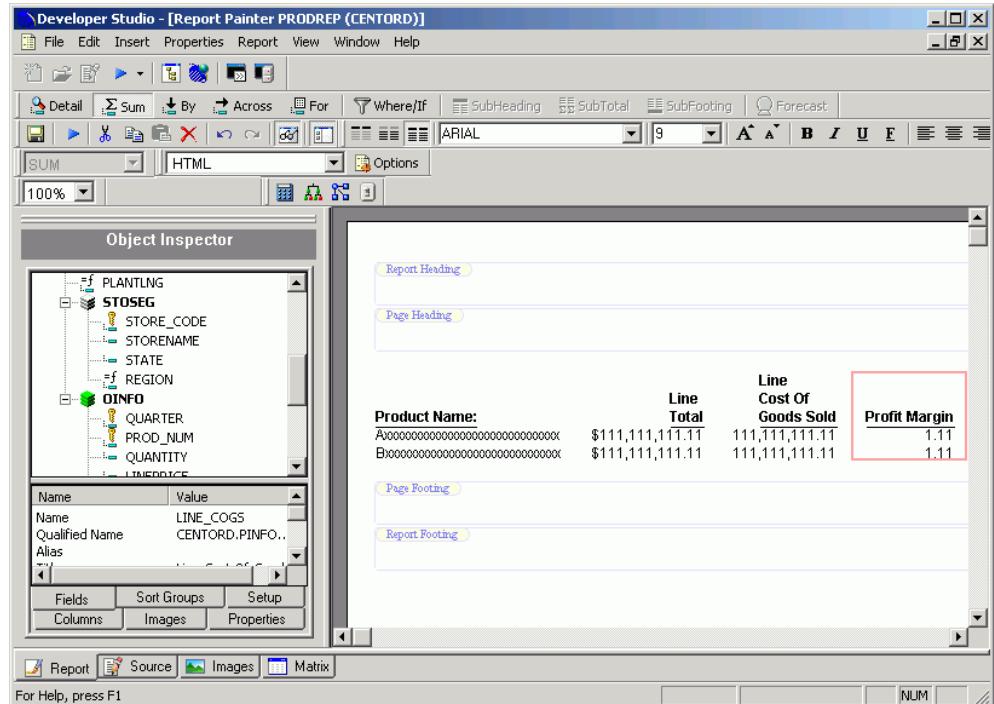
The new column *PROFIT* is added to the Report Painter window.

7. Select the *PROFIT* column and then click the **Sum**  button.
8. Right-click the *PROFIT* column and select *Column Title*.

**9.** Change the title by typing *Profit Margin*.

**10.** Click **OK**.

The following image shows how the report should appear at this point.



### Procedure: How to Limit the Data to a Selected Plant and Year

You will now create a list of acceptable values for the plant location and the year. These are the values the user will be able to select when they are using this application. Later, you will use each set of values you create here to run a parameterized report.

To do this, you will need to create two Where statements.

1. Click the **Where/If** button on the toolbar.

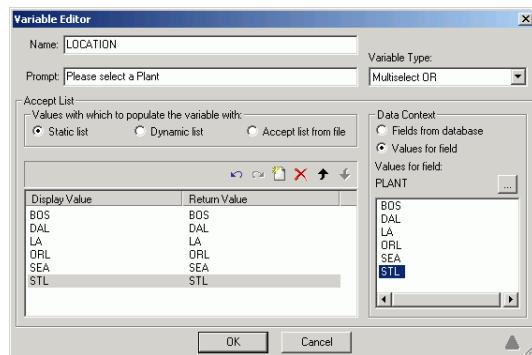
The Report Options dialog box opens at the Where tab.

2. Click **Assist**.

The Expression Builder opens.

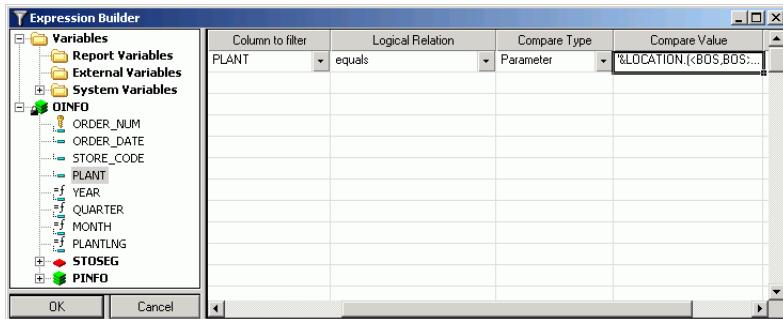
- 3.** To create the first Where statement:
  - From the Fields list, double-click *PLANT*.
  - From the Logical Relations drop-down list, select *equals*.
  - In the Compare Type box, select *Parameter*.
  - Double-click the Compare Value box to open the Variable Editor.
- 4.** In the Variable Editor:
  - For Name, type *LOCATION*.
  - In the Prompt input field, type *Please select a Plant*.
- 5.** From the Variable Type drop-down list, select *Multiselect OR*.
- 6.** In the Data Context area, select *Values for field*.
- 7.** Click the Select a field ellipse button to get values for the *PLANT* field. The Value Retrieval dialog box opens.  
The Value Retrieval dialog box provides a list of available fields in your data source. Double-click the *PLANT* field to close the Value Retrieval dialog box and return to the Variable Editor. The available values for the *PLANT* field are listed.
- 8.** Double-click each of the following values (*BOS, DAL, LA, ORL, SEA, STL*) to add them to the Accept List.

The following image shows the Variable Editor populated with the values you selected.



- 9.** Click OK to close the Variable Editor.

The following image shows the Expression Builder populated with the values you selected.



- 10.** Click OK to close the Expression Builder and return to the Where/If dialog box.

Leave the Where/If dialog box open to create the next Where statement.

- 11.** Click New from the Where/If dialog box.

- 12.** Click Assist.

The Expression Builder opens.

- 13.** To create the second Where statement:

- From the Fields list double-click YEAR.
- From the Logical Relations drop-down list select equals.
- In the Compare Type box select Parameter.
- Double-click in the Compare Value box to open the Variable Editor.

- 14.** In the Variable Editor:

- For Name, type YRVAL.
- In the Prompt input field, type Please select a Year.

- 15.** From the Variable Type drop-down list, select Multiselect OR.

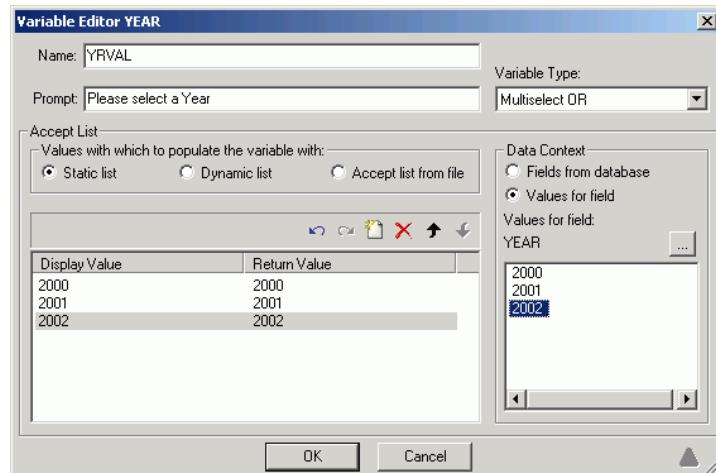
- 16.** In the Data Context area, select Values for field.

- 17.** Click the Select a field ellipse button to get values for the YEAR field. The Value Retrieval dialog box opens.

The Value Retrieval dialog box provides a list of available fields in your data source. Double-click the YEAR field to close the Value Retrieval dialog box and return to the Variable Editor. The available values for the YEAR field are listed.

- 18.** Double-click each of the following values (2000, 2001, 2002) to add them to the Accept List.

The following image shows the Variable Editor populated with the values you selected.



- 19.** Click OK to close the Variable Editor.  
**20.** Click OK to close the Expression Builder.  
**21.** Click OK to close the Report Options dialog box.

#### **Procedure:** How to Create a Page Heading for the Report

Now you will create a page heading for the report. Page headings appear at the top of every report page.

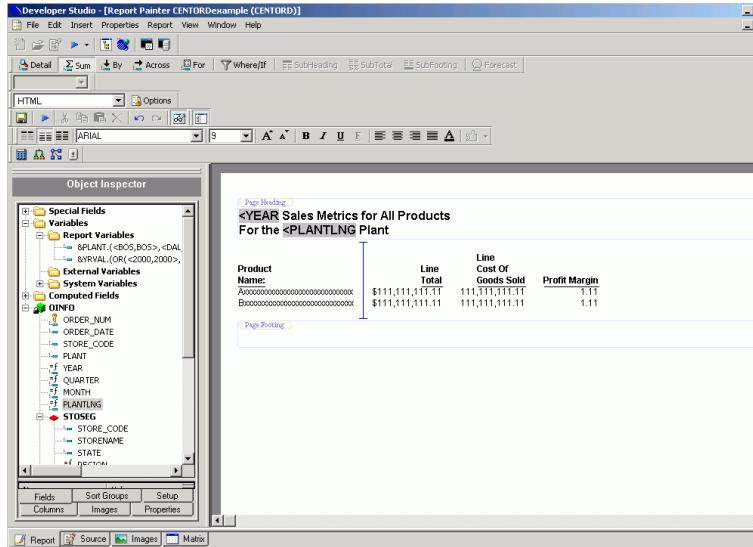
- 1.** In the Report Painter window, place your cursor in the Page Heading area.
- 2.** Double-click YEAR in the Object Inspector Fields tab.

The embedded field <YEAR appears in the Page Heading area.

- 3.** After the <YEAR field, type *Sales Metrics for All Products*.
- 4.** Press *Enter*.

5. Type *For the* with one space after "the".
6. Double-click *PLANTLNG* in the Object Inspector Fields tab.
7. Move the cursor into the Page Heading area after <PLANTLNG and type *Plant*.

The following image shows how the report should appear at this point.



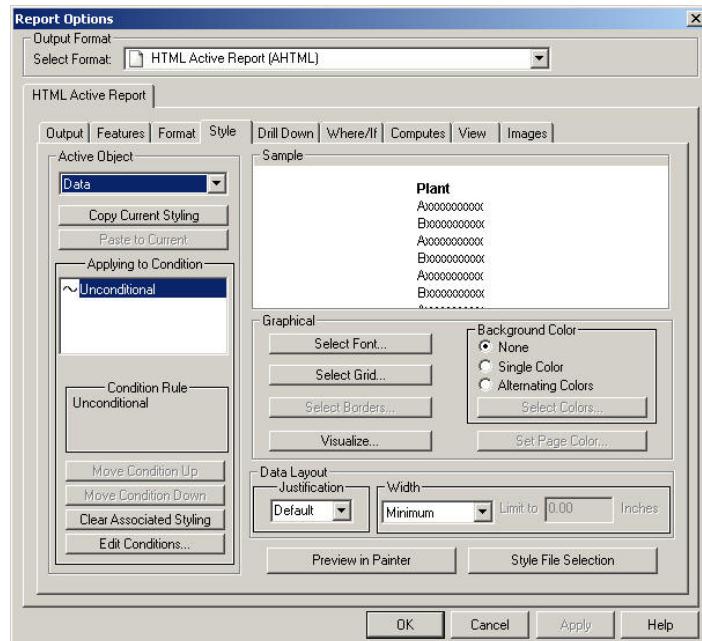
8. Highlight the second line of text in the heading.
9. From the Font toolbar, select the following font attributes:
  - For Font type, select *Arial*
  - For Font style, select *Bold*
  - For Font Size, select *10*
10. Right-click in the *Page Heading* area and select *Options*.  
The Properties for Page Header dialog box opens.
11. Select the *Styling* tab, then click the *Single Color* option in the *Background Coloring* section.
12. Click the *Select Colors* button and choose a color from the color palette.
13. Click the *Justification* drop-down list and select *Center*.
14. Click *OK* to close the Properties for Page Header dialog box.

## **Procedure: How to Style Your Report**

You will now style the report by adding alternating row colors to the report data and a border around the heading.

1. From the Report menu, select *Styling*.

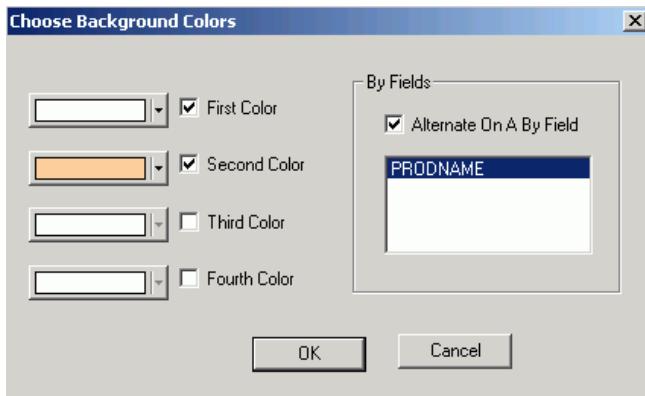
The following image shows the Report Options dialog box populated with the values you selected.



2. Select *Data* from the Active Object drop-down list.
  3. In the Background Color area, select the *Alternating Colors* option.
  4. Click *Select Colors*.
- The Choose Background Colors dialog box opens.
5. Leave the first color as the default selection of white.
  6. Select the *Second Color* check box and select the second color.
  7. Select the *Alternate on a By Field* check box.

**8.** Select the *PRODNAME* field.

The following image shows the Choose Background Colors dialog box.



**9.** Click *OK* to close the Choose Background Colors dialog box.

**10.** Click *Apply* to apply your selection.

Leave the Report Options dialog box open to add a border to the heading.

**11.** In the Report Options dialog box, select *Heading* from the Active Object drop-down list.

**12.** In the Graphical area, click *Select Borders*.

**13.** Deselect the *Make All Borders the Same* check box.

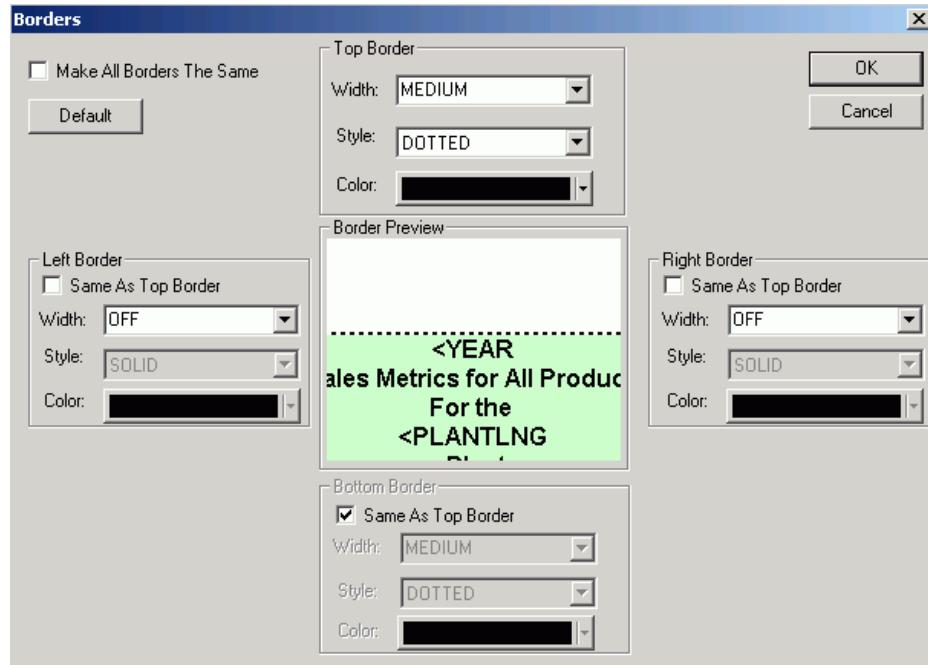
**14.** In the Top Border area, select:

- Medium* for width.
- Dotted* for style.
- Black* for color.

**15.** In the Bottom Border area, select the *Same as Top Border* check box.

- 16.** In the Left Border and Right Border areas, select OFF from the Width drop-down lists.

The following image shows the Border dialog box populated with the selected values.



- 17.** Click OK to close the Borders dialog box.

- 18.** Click Apply in the Report Options dialog box, then click OK.

#### **Procedure: How to Set Up the Drill-Down Report**

Now you will set up this report so you can drill down from the data in the Product Name column to the STORSAL graph you created earlier. Drill down on the Product Name field, so the information you see in the resulting graph will be specific to that product.

1. In the Report Painter, right-click the *Product Name* column and select *Options*.  
The Field Properties dialog box opens.
2. Click the *Drill Down* tab.
3. In the Active Object drop-down list, select *Column Data*.
4. In the Drill Down Type drop-down list, select *Execute Procedure*.
5. Click the Procedure Name *Browse* button, select STORSAL.fex from the Open dialog box, and click *Open*.

6. In the Target Frame area, type *graphframe*.

7. In the With Parameters area, click *Add*.

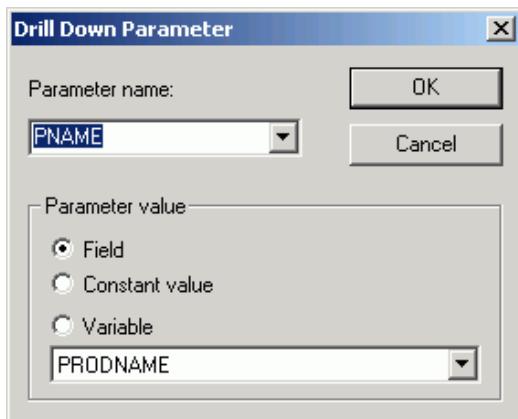
The Drill Down Parameter dialog box opens.

8. Type *PNAME* in the Parameter Name input box.

*PNAME* is the parameter you created in the STORSAL procedure.

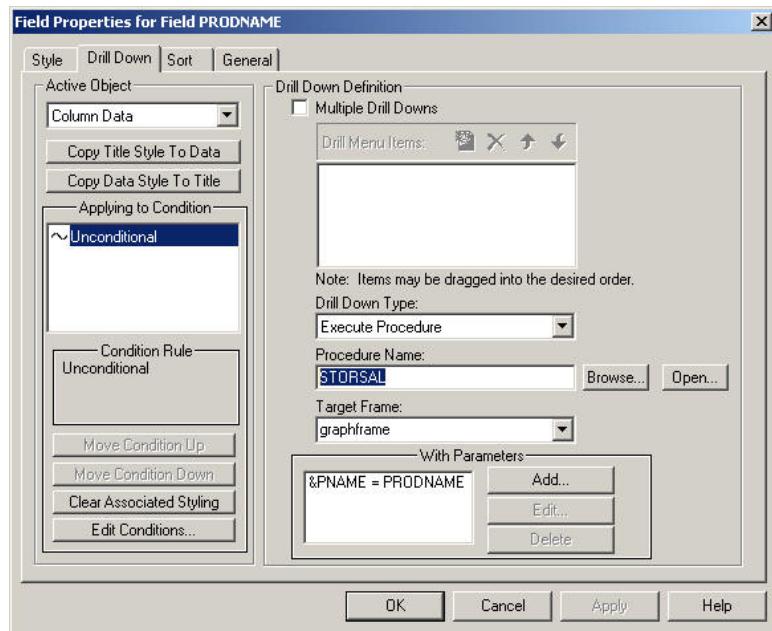
9. In the Parameter value area, select the *Field* option.

10. Select the *PRODNAME* field from the drop-down list in the Parameter value area.



11. Click *OK* to close the Drill Down Parameter dialog box.

The following image shows the Field Properties dialog box populated with the values you selected.

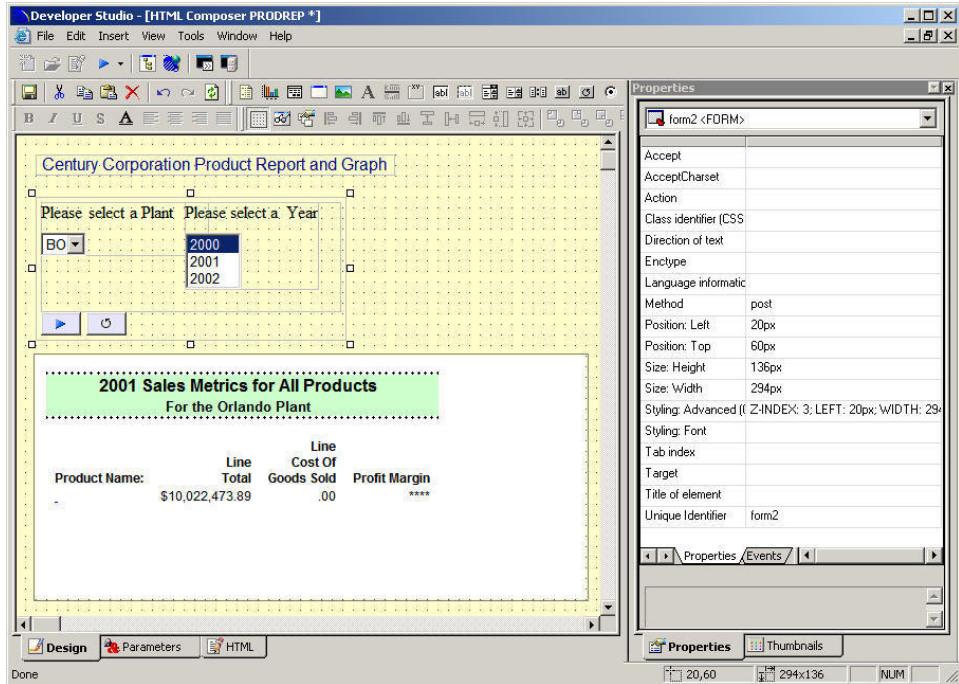


- 12** Click OK to close the Field Properties dialog box.
- 13** Select Close from the File menu to close the Report Painter.
- 14** When you are prompted to save your changes, click Yes.

You are returned to the HTML Composer and the New Parameters dialog appears.

- 15** Click OK to automatically add your parameters to the HTML page.

The following image shows how the HTML Composer should look at this point.



### **Procedure: How to Customize Parameters**

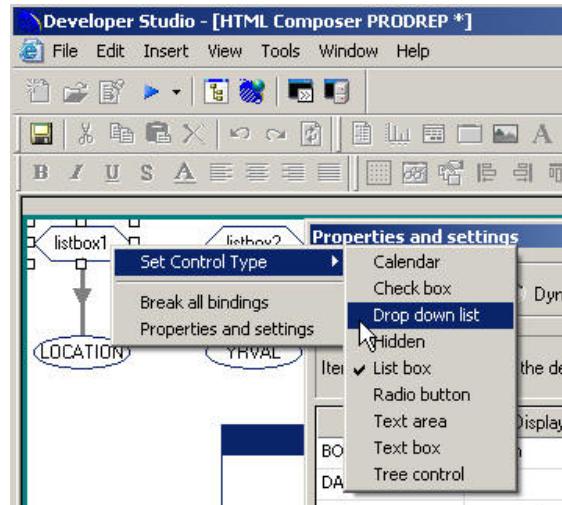
You will now customize the Plant (LOCATION) parameter by modifying the value from the data source to make it more user-friendly. You will also change the control type for the Year (YRVAL) parameter from a drop-down list to a radio button, rearrange the order of values, change the default value, and rename the Execute report button.

1. In the HTML Composer, select the Parameters tab.

The Properties and settings dialog box opens, showing a Legend of the available controls for the parameters on the HTML page.

2. Close the Properties and settings dialog box.
  3. Click the list box control (Input control *listbox1*) associated with the LOCATION parameter.
- The Properties and settings dialog box for the list box opens.
4. Change the control type to a Drop down list box.

- ❑ Right-click the LOCATION list box control (Input control *listbox1*) and select *Drop down list* from the Select Control Type context menu.

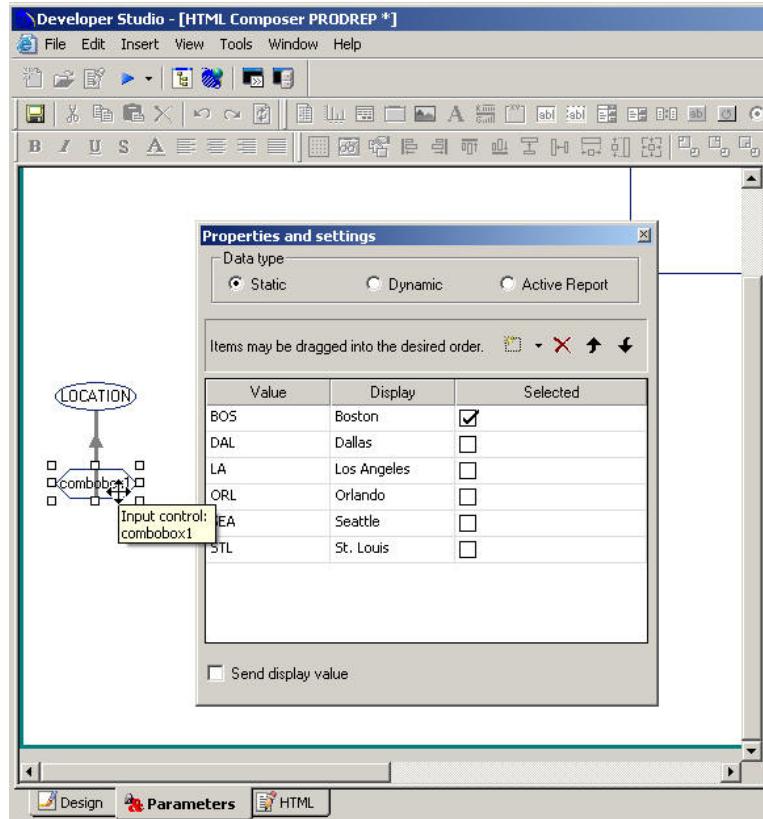


5. From the Properties and settings dialog box, double-click each of the values in the Display column and type the full city name as indicated below:
  - ❑ Change BOS to *Boston*
  - ❑ Change DAL to *Dallas*
  - ❑ Change LA to *Los Angeles*
  - ❑ Change ORL to *Orlando*
  - ❑ Change SEA to *Seattle*
  - ❑ Change STL to *St. Louis*

This changes the display name in the Drop down list from the value stored in the data source to the values you specify.

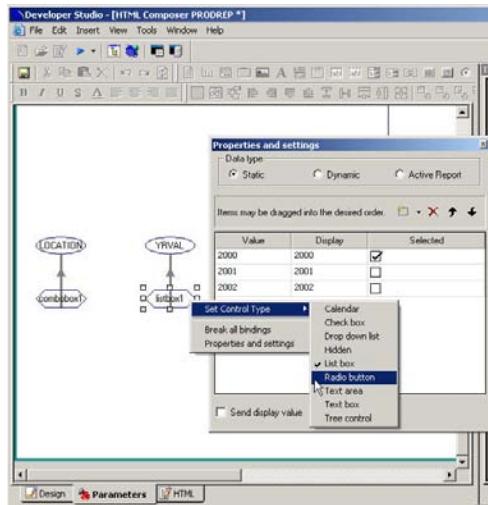
6. To make Boston the default selection, click the *Boston* check box in the Selected column.

The following image shows how the LOCATION Drop down list settings should appear.



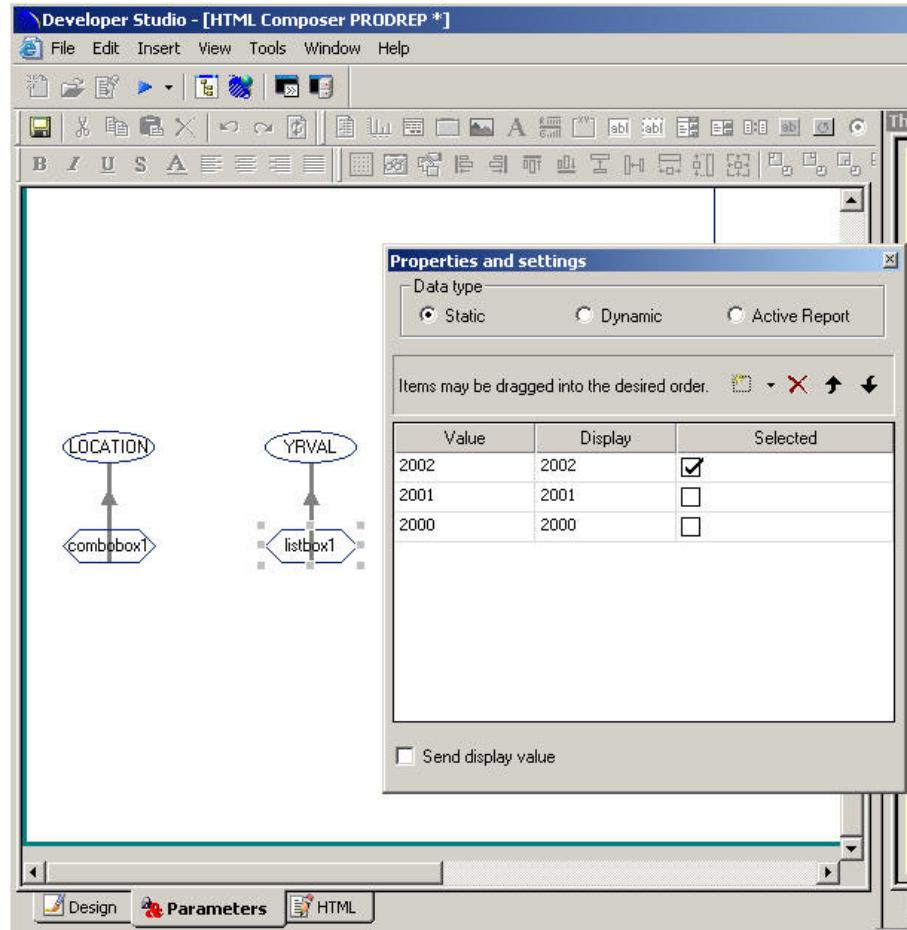
7. Close the Properties and settings dialog box for the LOCATION Drop down list.
8. Click the list box control (Input control *listbox2*) associated with the YRVAL parameter.  
The Properties and settings dialog box for the list box opens.
9. Change the control type to a Radio button.

- ❑ Right-click the YRVAL list box control (Input control *listbox2*) and select *Radio button* from the Select Control Type context menu.



- 10 From the Properties and settings dialog box, drag and drop the Year values so they appear in descending order.  
or  
Select a year and use the up/down arrows above the Static Values area to change the order of the years.
- 11 To make 2002 the default selection, click the check box in the Selected column for the 2002 value.

The following image shows how the YRVAL Radio button settings should appear.



- 12 Close the Properties and settings dialog box for the YRVAL Radio button.
- 13 Switch to the *Design* tab to view the Parameter changes on the HTML page.

#### **Procedure: How to Create the Target Frame For Drill-Down Output**

You will now add an output target frame that will contain the graph output from the main report when a user selects a drill-down link. The frame is invisible to the user until a drill-down link is selected.

1. In the HTML Composer, select *Insert*, then select *Frame*.

Your mouse pointer changes to crosshairs.

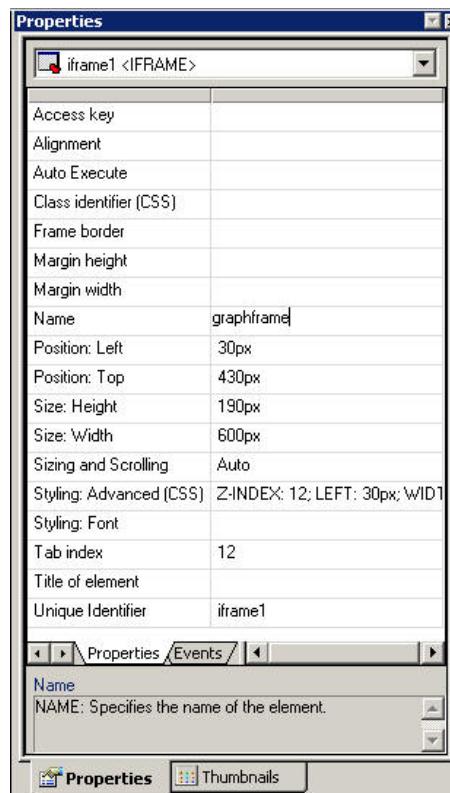
2. Scroll down past the report placeholder to insert the frame by clicking and dragging the crosshairs to form a rectangular box just below the report area.

3. Click anywhere inside the frame you inserted and view the Properties window.

The properties associated with the new frame are displayed in the Properties window.

4. Double-click the *iframe1* value in the right column next to Name in the left column of the Properties tab. Replace this value by typing *graphframe* which is the same Target Name entered in the Drill Down tab. See [How to Set Up the Drill-Down Report](#) on page 218.

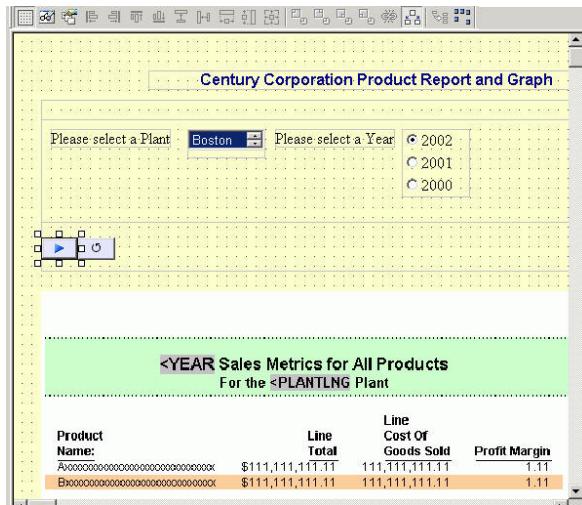
The following image shows the Properties window with *graphframe* as the new Name value.



### Procedure: How to Reorganize the Layout and Add an Image

Now you will move some items around in the HTML Composer and add an image.

1. Rearrange the heading, the *Please select a Plant* prompt and selection box, and the *Please select a Year* prompt and option buttons so the report page in the HTML Composer appears like the following image.



2. Click the new frame and grab the handles to resize it to almost the same size as the report placeholder.

This frame will contain graph output when a user clicks a drill-down link in the report.

3. Press the *Ctrl* key and click the report placeholder and then the frame placeholder.

4. Click the *Make same size* button.

5. Click the *Align right* button.

6. Click the *Insert image* button and click to insert an image below the bottom left corner of the new frame.

The Get source file dialog box opens.

- 7.** Select the following from the drop-down box:
  - a.** *Developer Studio Desktop*
  - b.** *Window's Desktop*
  - c.** *My Computer*
- 8.** Navigate to the following directory (where *install\_dir* is most likely the C directory):

*install\_dir:\ibi\apps\ibinccen\images\powered.gif*

- 9.** Click *Open*.

The *powered.gif* image is added to your report layout.

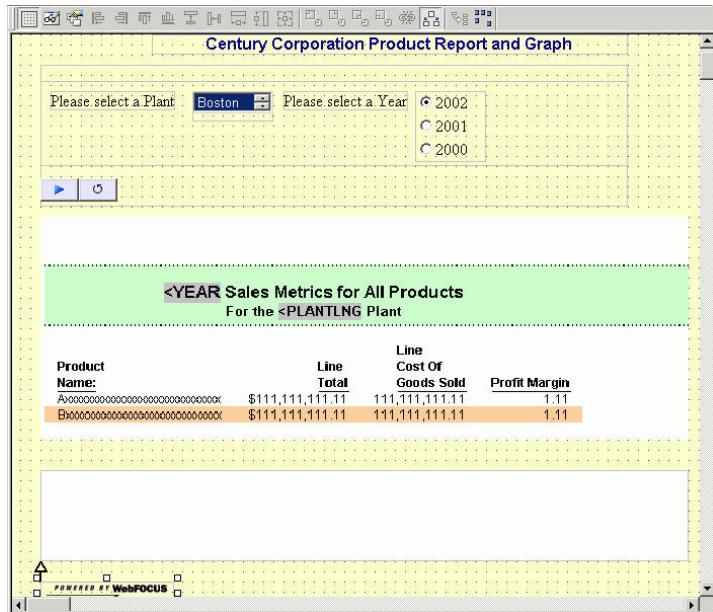
- 10.** Holding the *Ctrl* key, click the image and then the frame.

- 11.** Click the *Relate Bottom Left*  button.

This ensures that the image always appears in relation to the bottom left corner of the frame, regardless of the size of the frame.

- 12.** From the File menu, select *Save*.

The following image shows the completed reporting application. Your report layout will appear somewhat different depending on the size and location of the components you added to the *PRODREP.htm* file.



- 13 From the File menu, select *Close*.

## Running the Reporting Application

### How to:

Run Your Reporting Application

You have completed developing your reporting application; now you can run it.

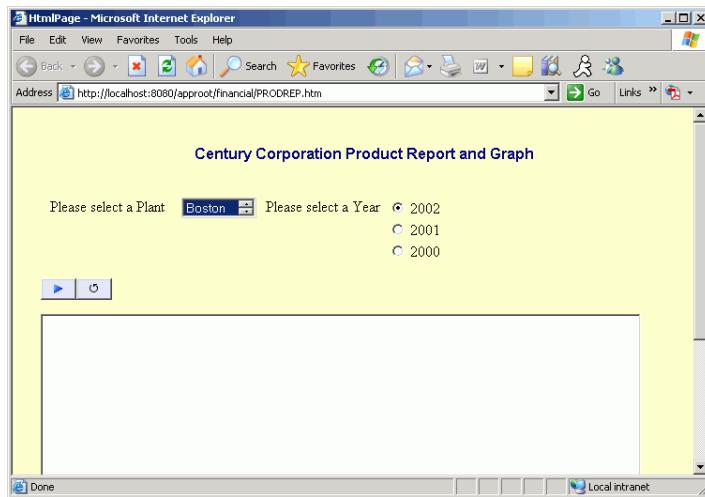
### **Procedure: How to Run Your Reporting Application**

1. From the Projects area, open the *HTML Files* folder in the Century project.
2. Right-click the *PRODREP.htm* file and select *Run on Web Server*.

**Note:** You can run your reporting application directly from the HTML Composer by opening the *PRODREP.htm* file and clicking *Run*.

## Running the Reporting Application

The following image shows how the completed reporting application should appear when you click Run.



3. Select a plant location and a year, then click the submit report button.

The report appears.

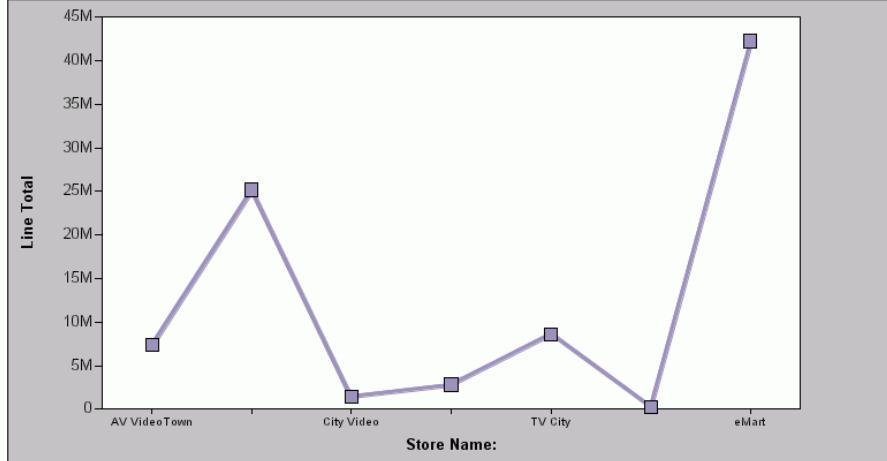
A screenshot of Microsoft Internet Explorer showing the generated report. The title bar and address bar are identical to the previous screenshot. The page content is titled "Century Corporation Product Report and Graph". The report header reads "2002 Sales Metrics for All Products For the Boston Plant". Below this is a table with the following data:

Product Name:	Line Total	Cost Of Goods Sold	Profit Margin
110 VHS-C Camcorder 20 X	\$15,974,658.33	14,541,600.00	.10
120 VHS-C Camcorder 40 X	\$18,878,179.00	15,595,685.00	.21
150 8MM Camcorder 20 X	\$6,344,989.64	6,022,560.00	.05
2 Hd VCR LCD Menu	\$4,532,246.79	4,143,351.00	.09
250 8MM Camcorder 40 X	\$1,111,660.98	1,109,120.00	.00
330DX Digital Camera 1024KP	\$454,840.33	411,134.00	.11

4. Click a link in the report and the graph output appears below the report.

The following image shows an example of how graph output should appear.

Sales of 110 VHS-C Camcorder 20 X for Each Store





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