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

How This Manual Is Organized

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<td></td>
<td>Describes the architecture of WebFOCUS and Developer Studio, and provides information about WebFOCUS environments and Developer Studio data source descriptions.</td>
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<td>2</td>
<td>Exploring Your WebFOCUS Development Environment</td>
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<tr>
<td></td>
<td>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.</td>
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<td>A</td>
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<tr>
<td></td>
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Documentation Conventions

The following table describes the documentation conventions that are used in this manual.

<table>
<thead>
<tr>
<th>Convention</th>
<th>Description</th>
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<tr>
<td>THIS TYPEFACE or this typeface</td>
<td>Denotes syntax that you must enter exactly as shown.</td>
</tr>
<tr>
<td>this typeface</td>
<td>Represents a placeholder (or variable) in syntax for a value that you or the system must supply.</td>
</tr>
<tr>
<td>underscore</td>
<td>Indicates a default setting.</td>
</tr>
</tbody>
</table>
### Convention | Description
--- | ---
*this typeface* | Represents a placeholder (or variable), a cross-reference, or an important term. It may also indicate a button, menu item, or dialog box option that 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 are 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 (..).

`. ` | Indicates that there are (or could be) intervening or additional commands.

---

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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 software 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 Version option 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?
  - Provide 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?

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Thank you, in advance, for your comments.

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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 various output formats, such as HTML, 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 webpage 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 any platform from more than 300 distinct databases, including FOCUS, Microsoft® SQL Server, Sybase, Oracle, Informix, Ingres, and DB2.

In this chapter:

- Additional WebFOCUS Products
- WebFOCUS Architecture
- Developer Studio Architecture
- Developer Studio Directory Structure
- Developer Studio Explorer Layout
- Development Modes with Developer Studio
- Setting Up a WebFOCUS Environment in Developer Studio
- 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

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 Java servlet calls.

- **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 Java servlets. 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 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 Developer Studio.
A stand-alone development environment is typically one in which all software components (the web server, WebFOCUS Client, and 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 Reporting Server resides on machines that can access your data. The 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 through links and forms on a webpage 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 Reporting Server.
3. The 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 Reporting Server processes the user 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, Reporting Server, and your data can be located on any platform in your network. You can easily connect to 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 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 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**

Developer Studio includes:

- **Developer Studio.** A group of graphical development and code generation tools. Depending on your license, it may also include the Maintain Development Environment.

- **WebFOCUS Reporting Server.** Basic Reporting Server for local processing, stand-alone development, and access to certain features, such as deployment, source control, and Maintain. WebFOCUS Client components are installed as part of the Reporting Server to allow processing through a local web server, which is required for a stand-alone development environment.

- **WebFOCUS Client.** A scaled down WebFOCUS Client is installed with Developer Studio. The functionality available is based on the Developer Studio edition for which you are licensed.

- **Derby Security database.** A Derby database is installed with Developer Studio editions that allow local/stand-alone development and it is used to store user accounts and policies required for Developer Studio to connect to its local WebFOCUS Client. The Derby database comes preloaded with user IDs that have developer and administration permissions.

  The user ID `wfdesktop` without a password allows full development against Developer Studio. User ID `admin` with password `admin` provides administrative tasks, such as access to the WebFOCUS Administration Console and Security Center.

  When connecting to a WebFOCUS Environment, the user ID `wfdesktop` allows self-service development: development from the Projects, Data Servers, and Web Applications area. Access to the Repository is restricted and users cannot create new content with this user ID. The user ID `admin` has full control to all development areas.

  To connect to a WebFOCUS environment or to the local WebFOCUS Client that is included with Developer Studio, a connection to WebFOCUS is required.
For Developer Studio stand-alone installations (no WebFOCUS on the same machine), when Developer Studio first starts, the user ID admin is used to connect to WebFOCUS and it is stored in the localhost environment properties. This configuration is done during the installation process. The Security Center that is available with Developer Studio provides the capability to change user passwords. Other tasks, such as the creation or removal of existing user IDs, management of Roles, and other privileges, are not permitted.

**Note:** If a user is not allowed to connect from Developer Studio to a WebFOCUS environment to perform development, a message will get presented to the user with related information. Users can be restricted from accessing WebFOCUS from Developer Studio if the group they belong to does not have the Desktop Connect privilege. This privilege is available by default in the WF/DesktopConnect Role. To allow connections from Developer Studio to WebFOCUS, ensure the above role or a different role contains the Desktop Connect privilege and is applied to the group where the user is assigned. Users that belong to the Administrators or WF_Global_Roles/DesktopSelfService groups are already given the permission to connect to WebFOCUS. Users that belong to the Administrators group have full control and no restrictions.

**Procedure: How to Change a User Password**

1. Open the WebFOCUS Welcome page using the URL http://localhost:8080/ibi_apps/, assuming you are using the default configuration of Tomcat with port 8080 and a default alias of ibi_apps.
2. Sign in with the ID for which you want to change the password, for example, wfdesktop.
3. Click the description of the user that displays after you sign in (Desktop guest account) and select Change Password, as shown in the following image.
The Change Password dialog box appears.

4. Enter password information into the applicable fields and click OK.

**Procedure:  How to Change Password Through the Security Center**

1. In the Administration drop-down menu, select Security Center.

Users have access to the Security Center if they sign in using an Administrator account.
2. From the Security Center, the administrator can change the password of any user by right-clicking a user and selecting *Set Password*, as shown in the following image.

---

**Developer Studio Processing**

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

The same processing occurs when using the local WebFOCUS Client and Reporting Server installed with Developer Studio. Developer Studio connects to its local client and the local Reporting Server through a local web server using the 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 application files. Sample files are provided in the `\ibinccen` and `\abisamp` directories.
The Application Root directory is created during the installation of Developer Studio and the Reporting Server. It is defined by the APPROOT variable defined in the server configuration file edaserve.cfg and the IBI_Approot_Directory variable defined during the WebFOCUS installation and points to the Application Root directory for applications that reside on the web server where WebFOCUS is installed. For Project-based development, the above Application Root directories must point to the same physical location. For more information about the Application Root directory, see WebFOCUS Environments in Developer Studio on page 22.

\DevStudio81
Contains the graphical front-end components for creating Developer Studio projects.

\DevStudio81\srv81
Contains the local Reporting Server files.

**Developer Studio Explorer Layout**

To start Developer Studio, select WebFOCUS Developer Studio from the program group Information Builders. The Developer Studio Explorer opens. In this example, the nodes on the left are expanded to illustrate 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 the New Explorer button on the main toolbar.

When installing a Developer Studio edition, be aware of the following product behavior that allows local and/or stand-alone development.

- **When Developer Studio starts, the 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 Developer Studio Options dialog box. For details, see Setting Preferences on page 125.**

  When you start Developer Studio, it attempts to start the Internet Information Services (IIS) web server by default to allow local and/or 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 Developer Studio Options dialog box.

  If you are using a non-IIS web server, 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, ensure that they use different ports or that only the required server is running.

- **If a Reporting Server of the same release as Developer Studio 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.**

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 Window menu in the main toolbar, select Options, and then **Show Desktop on Explorer tree** in the Explorer tab 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 visible in the HTML Files folder. Master Files, Access Files, and FOCUS Files are visible in the Master Files folder. The Maintain Files folder contains Maintain procedures. A sample project named SESSION is created when Developer Studio is installed.
You can create a new project by right-clicking the Projects folder and selecting New Project. For each of the project virtual subdirectories, you can create a new resource by right-clicking the folder and selecting 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 environments if you define WebFOCUS environments as explained below.

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 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 and can be customized by the developers.

**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 or sent from or 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 developers 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 Report Painter or InfoAssist that are only available in Developer Studio.

Managed Reporting development and administration through Developer Studio is only available to users that have permissions to perform MR development and it is controlled by the Security System.

After adding WebFOCUS environments, you can browse and manage their contents. You can connect to multiple environments at the same time and can interact between environments.
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 WebFOCUS environment, a logon box displays, prompting you for a WebFOCUS ID and password. Note that a sign on dialog box may appear for connection to the web or application servers or the Reporting server, depending on the security implemented in the WebFOCUS environment that is being accessed. The example image below shows the dialog box that is initially presented when you access a WebFOCUS environment.

There is a check box option on the logon dialog boxes 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. To view, clear the credentials stores, then open the WebFOCUS Environment Properties dialog for the environment that users need to make changes to.

For details about the wfscom.xml file, see *Working With Environment Properties in Developer Studio* on page 38. If you decide to change the stored credentials later, you can do so from the WebFOCUS Environment Properties dialog box.
WebFOCUS Environments in Developer Studio

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

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

The 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 Reporting Servers 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.
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 directory, and all projects use files in the baseapp directory. You can change the **APPROOT** directory location defined in the Reporting Server and WebFOCUS Client, but ensure that both Application Root directories 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 Reporting Server, the applications and files under the Data Servers folder and the Web Applications folder will be the same, since the **APPROOT** setting of the 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 Java Servlet calls. The same applies for remote environments that have the WebFOCUS Client installed on the same machine as the Reporting Server and the **APPROOT** setting of the WebFOCUS Client and the Reporting Server points to the same location. If the **APPROOT** settings point to different locations or if WebFOCUS and the 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 WebFOCUS Application Root variable is configurable through the WebFOCUS Administration Console by selecting **Application Directories** by the path **Configuration, Application Settings**, and clicking **Application Directories** through the variable IBI_Approot_Directory. Typically, these applications include HTML pages, graphic images, cascading style sheets, and Java Script files.

The edaserve.cfg file contains the **APPROOT** variable for the Reporting Servers Application Root directory. Typically these files include procedures, WebFOCUS StyleSheets, and customized HTML pages that require processing on the Reporting Server. The Approot Server variable can be configured through the Reporting Server Console by selecting **Workspace** and then **Configuration Files**.
The edaserve.cfg file is located in:

<table>
<thead>
<tr>
<th>Type of Installation</th>
<th>Location of edaserve.cfg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developer Studio with localhost</td>
<td>install_drive:\ibi\DevStudio81\srv81\wfs\bin</td>
</tr>
<tr>
<td>(full installation)</td>
<td></td>
</tr>
<tr>
<td>WebFOCUS</td>
<td>install_drive:\ibi\srv81\wfs\bin</td>
</tr>
</tbody>
</table>

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

  **Note:** The Repository area is not visible for Developer Studio stand-alone installations. The Repository is installed only with WebFOCUS and access to it is controlled by the Security System.

Under the Repository, folders can be created to develop Managed Reporting content. For example, users can develop procedures or web applications, create ad hoc reports, and build custom user content. Development and Administration options are enabled based on user permissions defined in the Security System.

If you have the *manage private resources* permission, you can use Mode Manager to view and edit private files. To enable Mode Manager, right-click on the Repository node and click *Mode Manager*. Your view refreshes, displaying all private files in the Repository. You can open and make changes to these private files as needed. When you are finished, right-click on the Repository node and click *Mode Normal*. Your view refreshes, hiding the private files in the Repository node.

  **Note:**

  - When a file in the Repository is marked as shared, and you do not have permission to save the original file, you will only be allowed to use the Save As command to save the file. This will allow you to save the file under a different name, leaving the original file untouched.

  - By default, the Repository displays files by title instead of by name.
Web Applications. Displays the contents of the APPROOT directory of the WebFOCUS Client. 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.

Development Modes with Developer Studio

Developer Studio allows local (stand-alone) development and development against a remote development. From the Explorers Projects folder, you can develop projects locally on your machine or against a remote WebFOCUS environment. From the WebFOCUS Environments folder of the Explorer, 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 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 as described earlier. The Application Root directories (APPROOT directories) attribute must point to the same directory for Project-based development.

- 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 Repository if Managed Reporting is installed. From the environment tree you can create and edit procedures, metadata, HTML files, and more.

If you do not have a 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 WebFOCUS Developer Studio Installation and Configuration manual.

Project-Based Development

Developer Studio supports two configurations for Project-based development:
In the first configuration, Developer Studio, the Reporting Server, and the WebFOCUS Client are installed on the same machine, using 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.

A full Developer Studio installation also allows Project-based development against a remote WebFOCUS environment. In this case Developer Studio does not utilize the local Reporting Server or its local WebFOCUS Client. It utilizes these components from the remote WebFOCUS environment.

In the second configuration, 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 are installed on remote machines. The WebFOCUS components include a Reporting Server and the WebFOCUS Client which resides on the web server.

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

- The Reporting Server must be at a supported release level.
- The Reporting Server must be installed on a supported Windows or UNIX platform.
- The Reporting Server and the WebFOCUS Client must be properly configured and the APPROOT variable 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 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 Reporting Server for stand-alone development) on your Windows machine.
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 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.

   Sample projects are provided for editions that allow local/stand-alone development. When working against a remote WebFOCUS environment you will not see any sample projects, by default.

   For more information, see Creating a Reporting Application in the *Creating Reporting Applications With Developer Studio* manual.

5. **Create, develop, and test the project components.** Open the project, create its components (the procedures, data source synonyms, HTML files, and related files) and develop and test them on the 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.

   Refresh in other areas of the product will occur when operations, such as Create or Delete, are performed. From the Window Options dialog, a time interval can be set to perform an automatic Refresh every number of minutes and this will apply to all active development environments.

**Remote Development**

Developer Studio provides the following scenarios for remote development:

- The Data Servers area enables you to develop applications directly on the Reporting Server and edit resources in place against remote environments.
The Repository area enables you to access 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 pages, cascading style sheets (CSS), and other web components are stored in the Web Applications folder. You can view and modify 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 38.

3. **Create an application folder on the server.** Create the application folder in the Data Servers area or develop directly against the Repository.

4. **Create, develop, and test the application components.** Open the application, create its components (its procedures, data source synonyms, HTML files, and related files) and develop and test them on the 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 38.

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.

3. Click OK to exit and save your changes. The Explorer tree will get refreshed and 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 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 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 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.

Note: When copying files between different areas, code changes may be required to allow procedures to run.

The Data Servers area can be hidden based on user privileges defined in the security database.

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 and the APPROOT of the Reporting Server file point to the same place, 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.
5. You can copy and paste files between applications on this server or between servers. Applications in this area support subfolders.

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 another available option. The component opens in the applicable tool.
4. Edit the component. Save and close the file.
Reference: Developing an Application in the Repository 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. The Managed Reporting Repository is stored in a database configured with WebFOCUS. There is no decentralized local development copy of this Repository or of Managed Reporting files. Regardless of whether the developer is using a web browser-based tool 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 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.

Procedure: How to Create an Application in the Repository Area

1. Under the Repository area, expand the Repository by clicking the plus (+) sign to view available folders.
   
The applications visible depend on your user privileges. Users see their own applications and files that are published. Administrators see all files and folders.

2. Right-click Repository and select New Folder.

   Folders can have multiple levels of sub folders and are used to build your Managed Reporting applications. The option to create a New Folder can be restricted for specific users or groups of users and in this case this option will not be visible.

   When a new folder is created, the Server property check box is not selected, and the drop-down list of 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 folder will inherit the server setting shown in this list box.

   The Application Path property check box is not selected by default. This means that requests will be processed by the Reporting Servers default search path. The servers search path is generally determined by the settings in its profile but can also be overridden by user and group profiles, depending on the platform.
For more information about server search path behavior, see the *Server Administration* manual.

To override the default search path behavior of the server for reports run from this folder or for a specific file, check the Application Path property. Select applications from the available area and add them to the selected area to customize the search path for the folder or file.

The Application Path property sends the APP PATH values command to the server, where *values* contains the applications added to the selected area. A supplied value overrides the server's default search path (it does not append to it). Domain properties are inherited by the reports under it and can be overridden at the report level.

**Reference: Folder Operations**

The following table describes the available operations for folders when selecting the New option.

You can do the following:

- Create procedures with the Procedure Viewer, SQL Report, Graph Tool, Text Editor, Document Composer and so on.
- Create alerts with the Alert Wizard.
- Create HTML files with the Composer or the Text Editor.
- Create a Guided Report form.
- Create a new URL.
- Create a Reporting object.
- Create a new sub folder.
- Create a WebFOCUS StyleSheet and cascading style sheet.
To import files into a folder, a user can use Windows Explorer to find needed files and perform copy/paste operations. You can also copy files between environments configured in Developer Studio.

Options in the Folder Context menu will display depending on user permissions.

While working in the Repository area from Developer Studio, the product displays folders in the Explorer using the Name of the item, by default. In the Business Intelligence Portal, the default option is to display content using Title (descriptive name of an item). From Developer Studio, the Repository root node is displayed as Repository versus Content from the Business Intelligence Portal. The default view can be modified in both Developer Studio and Business Intelligence Portal by right-clicking on Repository/Content and changing the view. For Developer Studio, the view change is applied to the Explorer tree only. Content within folders display in the right area of the Explorer and developers can sort items by the available Developer Studio columns, such as Name, Title, and so on.

The Open dialog box and Save dialog box only require a name entry, even if the Repository Area is set to display titles.

Creating Content in the Repository also has differences between Developer Studio and the Business Intelligence Portal, Developer Studio will prompt for the Name of item. The Business Intelligence Portal prompts for the Title of an item.
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.

<table>
<thead>
<tr>
<th>Button</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Moves up one level in the hierarchical file structure." /></td>
<td>Moves up one level in the hierarchical file structure.</td>
</tr>
<tr>
<td><img src="image" alt="Toggles between the double pane Explorer view and the single right pane Explorer view." /></td>
<td>Toggles between the double pane Explorer view and the single right pane Explorer view.</td>
</tr>
<tr>
<td><img src="image" alt="Displays properties of the selected item." /></td>
<td>Displays properties of the selected item.</td>
</tr>
<tr>
<td><img src="image" alt="Displays the current deployment scenario. Click the down arrow and select New Deploy Scenario to create a deployment scenario." /></td>
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</tr>
<tr>
<td><img src="image" alt="Note: 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." /></td>
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</tr>
<tr>
<td><img src="image" alt="You can set up a default scenario in the Deployment tab in the Properties dialog box of the project." /></td>
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</tr>
<tr>
<td><img src="image" alt="For details, see Partitioning and Deploying Project Files in the Creating Reporting Applications With Developer Studio manual." /></td>
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</tr>
<tr>
<td><img src="image" alt="Provides deployment options for the current scenario that allow you to either deploy, deploy and run, or run the current scenario." /></td>
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</tr>
<tr>
<td><img src="image" alt="Displays available items in the path of the project. Note that this button is not available when you have selected the Deploy folder." /></td>
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</tr>
<tr>
<td><img src="image" alt="Adds the selected item to a project. Note that this button is not available when you have selected the Deploy folder." /></td>
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</tr>
<tr>
<td>Button</td>
<td>Operation</td>
</tr>
<tr>
<td>--------</td>
<td>-----------</td>
</tr>
<tr>
<td><img src="image" alt="OperationButton" /></td>
<td>Removes the selected item from a project.</td>
</tr>
</tbody>
</table>

This button is visible when you are at a project level.

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.

| ![OperationButton](image) | Deletes the selected item from the hard drive. |
| ![OperationButton](image) | Displays items in the view as large icons, small icons, or in a list. It can also display the item details. |
| ![OperationButton](image) | Indicates that source control is enabled, and lists the available Source Control options. See the *Creating Reporting Applications With Developer Studio* manual for more information. |

Click the down arrow to display a list that shows available files and their properties. You can also filter folders in the list.
**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.

<table>
<thead>
<tr>
<th>Button</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Folder" /></td>
<td>Moves up one level in the hierarchical file structure.</td>
</tr>
<tr>
<td><img src="image" alt="Folder" /></td>
<td>Toggles between the double pane Explorer view and the single right pane Explorer view.</td>
</tr>
<tr>
<td><img src="image" alt="Report" /></td>
<td>Displays the Deferred Report Status Interface in a new browser window. This option is only available in Managed Reporting.</td>
</tr>
<tr>
<td><img src="image" alt="padlock" /></td>
<td>Accesses the Security Center. Used to manage users and permissions applied to groups and resources.</td>
</tr>
<tr>
<td><img src="image" alt="Business Intelligence" /></td>
<td>Accesses the Business Intelligence Portal (BI Portal). Use the BI Portal to build complete, modern websites.</td>
</tr>
<tr>
<td><img src="image" alt="View Builder" /></td>
<td>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 Business Intelligence Dashboard.</td>
</tr>
<tr>
<td><img src="image" alt="Dashboard" /></td>
<td>Accesses the 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.</td>
</tr>
<tr>
<td><img src="image" alt="ReportCaster Explorer" /></td>
<td>Accesses ReportCaster Explorer if ReportCaster is installed on the Reporting Server. For more information, see the ReportCaster manual.</td>
</tr>
<tr>
<td><img src="image" alt="ReportCaster Console" /></td>
<td>Accesses the ReportCaster Console if ReportCaster is installed on the Reporting Server. For more information, see the ReportCaster manual.</td>
</tr>
<tr>
<td>Button</td>
<td>Operation</td>
</tr>
<tr>
<td>--------</td>
<td>-----------</td>
</tr>
<tr>
<td><img src="Image" alt="Button Image" /></td>
<td>Launches the Server Console for the selected Reporting Server, which you use to configure and manage Reporting Servers. Note that the Server Console is sometimes referred to as the Web Console.</td>
</tr>
<tr>
<td><img src="Image" alt="Button Image" /></td>
<td>Launches the WebFOCUS Administration Console, which you use to administer the WebFOCUS Client and perform tasks, such as add remote Reporting Servers.</td>
</tr>
<tr>
<td><img src="Image" alt="Button Image" /></td>
<td>Displays properties of the selected item.</td>
</tr>
<tr>
<td><img src="Image" alt="Button Image" /></td>
<td>Deletes the selected item from the file system.</td>
</tr>
<tr>
<td><img src="Image" alt="Button Image" /></td>
<td>Displays items in the view as large icons, small icons, or in a list which also displays item details.</td>
</tr>
</tbody>
</table>

**Note:** Tools enabled in the Explorer toolbar are controlled by the Security Center.

### Setting Up a WebFOCUS Environment in Developer Studio

A WebFOCUS environment consists of a web server, a WebFOCUS Client, and WebFOCUS Reporting Servers. To add a WebFOCUS environment, specify a web server containing the WebFOCUS Client and the connection path it uses. Developer Studio then connects to the WebFOCUS Client to obtain information on the WebFOCUS Reporting Servers that the WebFOCUS Client can access.

Add new and edit existing WebFOCUS environments in Developer Studio using the WebFOCUS Environment Properties dialog box or the Explorer tree. Use either of these approaches to create and manage additional environments, for example, test and production environments.

**Note:** Developer Studio 8 can only be used against WebFOCUS 8 or higher. You cannot connect to previous WebFOCUS releases. If you try to connect to a previous WebFOCUS release, you will be presented with a message.
Working With Environment Properties in Developer Studio

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

For Windows XP and Windows 2003 Server:

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

For Windows 7:

drive:\Users\user_id\AppData\Roaming\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.

- If an existing wfscom.xml file has a localhost environment, the existing localhost environment is updated with settings based on the selected installation and configuration options. If localhost did not exist, it is created with settings based on the selected installation and configuration options.

- User IDs and passwords stored in wfscom.xml are encrypted to keep them confidential.

- WebFOCUS environment properties apply to your current Developer Studio configuration and do 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 lists all of the WebFOCUS Environments already defined for Developer Studio, if previously installed. If not installed, only the localhost environment exists. To edit an existing environment, select it and click Properties.

**Note:** The Set Development Environment button does not pertain to Managed Reporting and is only used for a self-service deployment application.

2. Click Add.
The WebFOCUS Environment Properties dialog box opens, as shown in the following image.

At the top of the dialog box is the Description field, followed by the Environment Settings area, where you will find up to six selectable objects. At the bottom part of the dialog box are two areas, Web Component and Web Component Authentication. In the Web Component area, you can enter the IP Address (Host Name), select the Protocol type, enter the Port number information, supply an HTML Alias, enter the Client Path information, and enter the Connection Timeout information. In the Web Component Authentication area, you can enter user ID and password information when the User ID drop-down list is set to a value other than None.

**Note:** To work against a remote WebFOCUS Environment that is configured with IWA security, select IWA as the Web Component Authentication method.
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. At the top of the window, type a description for the environment. This description will appear in the Explorer under WebFOCUS Environments.

As shown in the following image, the Environment Settings area contains a series of buttons that each represent a component in the environment.

The Web Component button is selected by default. Note that the Project Development Environment Settings are only available in the full edition of Developer Studio.

4. At the bottom of the Web Environment Properties page, specify the information needed to access the web server.

For some environments, after you specify the web server, all other options are set by default. If the WebFOCUS environment you are accessing does not use default settings or the components require authentication, click the appropriate button in the top area to provide parameters. The areas that follow explain the parameters available for each component.

**Note:** WebFOCUS environment properties must be supplied in a particular order. For example, if web server security is enabled, you cannot set the WebFOCUS Client script name until you have provided valid web server credentials. Similarly, you cannot retrieve a list of Reporting Servers until you have provided a valid Client Path. As you select a component button in the dialog box, Developer Studio ensures that it has the necessary information before it displays the component 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 in Developer Studio

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 area of the Environment Properties dialog box. The file content caching location path is for a Windows 7 machine.

![WebFOCUS Environment Caching](image)

In caching, copies of files or information stored on a remote machine are temporarily stored on your local Developer Studio machine. Developer Studio works with the locally stored files. Caching increases performance because remote machines are not accessed and queried every time you request information, which is especially useful when accessing mainframes or when a network connection is slow. Note that caching should not be used when multiple developers are working with the same files because the possibility exists that one writer may overwrite the changes of another writer. 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 query the 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 it is restarted or when 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 Component button is 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 Component area of the WebFOCUS Environment Properties dialog box.

The following properties are available:

- **Host Name/IP Address.** Specifies the host name or IP address where your web server is running. This field is required and has no default value. For a network installation, ensure this is the actual host name and not localhost.

- **Protocol.** The protocol to use for accessing the web server (HTTP or HTTPS).

- **Port.** The TCP/IP port for accessing the web server. Port 8080 is the default.
**HTML Alias.** Identifies the alias used to access content from the WebFOCUS Environment directory, ibi_html. In WebFOCUS 8, there is no need to configure an ibi_html alias. The ibi_html content is accessed through the ibi_apps alias. The configuration of this alias is:

/ibi_apps/ibi_html

where:

- **ibi_apps**
  - Is customizable.

- **ibi_html**
  - Is constant.

An ibi_html alias may be required if you have created applications from a previous Developer Studio release that contains hard coded references to the ibi_html alias. For these cases, you need to set the HTML Alias as /ibi_html. For more information on how to configure this alias, see the *Developer Studio Installation and Configuration* manual.

**Client Path.** 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

where:

- **ibi_apps**
  - Is customizable.

- **WFServlet**
  - Is constant.

If the WebFOCUS environment uses a non-default context path, deselect the Use Default check box and provide the correct Client Path. For example:

/ibi_apps8/WFServlet

If the Client Path is incorrect for the environment, you receive an error when you click the WebFOCUS button at the top of the page or when you press OK to exit and save your changes. 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.

**Use Default.** Specifies that the default ibi_html alias is used. Leave this check box selected, unless you change the HTML Alias value.
Note:

- If the Client Path field is empty, and the Use Default check box 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.

- If while providing a custom HTML Alias and Client Path, your connection fails because of incorrect information and the Client Path is deleted, you can uncheck Use Default to restore the values you entered. Click the Use Default check box to edit the HTML Alias and Client Path, and type the correct information. If a custom ibi_apps alias or context path is used, it needs to be entered in both the HTML Alias and Client Path fields. For example:

  HTML Alias:
  /ibi_apps8/ibihtml
  Client Path:
  /ibi_apps8/WFServlet

- **Web Component Authentication.** Used when authentication is required on the web server. To set security, select the security method that matches your system from the drop-down list. A web server user ID, password, and other settings may be required or enabled, depending on the security method that you select. By default, this option is set to None, which means that the web server must allow anonymous access.

Note: ClearTrust, SiteMinder, WebSEAL, and Oracle Access Manager require templates. Sample templates are provided with the WebFOCUS product. For more information, see the WebFOCUS Security and Administration manual.

**WebFOCUS Properties in Developer Studio**

When you click the WebFOCUS 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 area of the Environment Properties dialog box.

You are prompted to sign in to WebFOCUS to verify your configuration. You will also be prompted to sign in to WebFOCUS if you click OK to exit the dialog box.
Note: Developer Studio will not display a sign-in dialog box for one minute after a user cancels out of the dialog box to enter WebFOCUS credentials. This is to prevent multiple sign-in prompts for a WebFOCUS environment. If a user needs to reconnect to the WebFOCUS environment for which they canceled the connection, they need to wait one minute.

The following properties are available:

- **Client Path.** Is specified in the WebFOCUS Component properties area and is only available in this pane for reference. This field is unavailable and can only be changed in the Component properties area.

- **Select Language.** Specifies the language of the WebFOCUS Client.

- **Supply Credentials.** Specifies whether to supply and store credentials when you connect to WebFOCUS and access the environment.

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

**Data Server Properties**

You can set authentication and view available Reporting Servers by clicking the Data Servers button. When you select Data Servers, WebFOCUS connects to the WebFOCUS Client and retrieves a list of servers from the communication configuration file (odin.cfg).
The following image shows the Data Servers area of the Environment Properties dialog box.

![Data Servers](image)

You must be signed in to WebFOCUS to access this window.

The following property is available:

**Supply Credentials.** If selected, you can type a user ID and password for the WebFOCUS server highlighted in the list. Clicking **Set** stores the credentials with the environment properties, and the user ID you supplied is shown next to the server in the list. The **Set** button stores your credentials.

**Project Development Properties in Developer Studio**

Project development can be optionally configured and used while working in the Projects area. For more information about this feature, see *Development Modes with Developer Studio* on page 25.

**Logging Off 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.
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.

**How to Logoff Areas in WebFOCUS Environments**

To logoff areas in a WebFOCUS Environment, either right-click an environment and select *Logoff* or select an environment and click *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.
- If caching is enabled, cache of remote directory and file information (metadata level caching) is automatically refreshed when you log on, 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.

**Developer Studio Data Access and Descriptions**

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 Reporting Server.

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

- Connect the local Reporting Server to remote 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.

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 60.

**Note:** If you are not using a local copy of the 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

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 Console for Data Access and Synonym Preparation* on page 75.

**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, localhost), 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.
Depending upon your needs, you can use this Window to create synonym for existing adapters, configure a new adapter or add a remote server.

- **Configured.** This folder contains any data adapters or remote servers that are already configured.

  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.

- **Available.** This folder lists the data adapters that you can configure on the Reporting Server platform.

  **Note:** If any adapters have already been configured for the server, you will see the available adapters, from which you can immediately begin to create synonyms.

3. If no adapters are available, expand the Available folder, select the adapter you want to configure and click the **Configure** button.

The Manage and Configure Data Adapters window opens.
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 following image.
Click *Create New* from the WebFOCUS Table List dialog box, as shown in the following image.

![WebFOCUS Table List](image)

**Note:** When accessing a Developer Studio Tool in the Managed Developer Edition, the Create New button will not appear for developers without Data Server access permission.
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

1. From the Projects area, right-click on the root folder Projects on and select Manage Adapters.
   
   The Manage and Configure Adapters dialog box opens.

2. Expand the Available folder icons to choose from the list of available adapters.

3. Select an adapter to configure.

4. Click Configure to add the selected adapter.

5. Complete the connection information for your adapter.

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

7. Click **Cancel** to exit the tool.
   or
   Select **Create Synonym** to proceed and create synonyms for the configured adapter.

The following options are available from the Manage and Configure Adapters dialog box.

- Create Synonym
- Test
- Delete
- Properties

8. Click **Test** to test the connection.
   If you entered the correct connection parameters, sample data should appear.
   If the test fails, click the connection, select **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 have clicked the **Configure** button to access the Manage and Configure Data Adapters window. You are now ready to proceed as described below:

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

2. Instead of choosing an adapter from the list, select **Remote Servers** and click **Add Remote Server Connection**.
A window appears containing fields to define the connection.

3. Complete the fields as follows:

<table>
<thead>
<tr>
<th><strong>Basic Parameters</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>NODE</td>
<td>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.</td>
</tr>
<tr>
<td>HOST</td>
<td>Specify the hostname or IP Address for the server.</td>
</tr>
<tr>
<td>PORT</td>
<td>Specify the base TCP port for the server. The default is normally 8120, not 8100.</td>
</tr>
<tr>
<td>HTTP_PORT</td>
<td>Specify the HTTP port for the server. This is normally one more than the base TCP port. The default is normally 8121, not 8101.</td>
</tr>
<tr>
<td>CLASS</td>
<td>If this is a z/OS server, you must include a qualifier. (Pertains only to z/OS servers.)</td>
</tr>
</tbody>
</table>
Specify how a user should log on to the remote server:

- **Explicit.** Passes the user ID and password you provide.
- **Password Passthru.** 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.
- **Trusted.** For a trusted connection, where the current logged on user ID is passed to the server.

If the server is not on Windows and runs with security ON, providing an explicit user ID and password is required to create synonyms.

<table>
<thead>
<tr>
<th>Basic Parameters</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SECURITY</td>
<td>Specify how a user should log on to the remote server:</td>
</tr>
<tr>
<td></td>
<td>- <strong>Explicit.</strong> Passes the user ID and password you provide.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Password Passthru.</strong> 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.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Trusted.</strong> For a trusted connection, where the current logged on user ID is passed to the server.</td>
</tr>
</tbody>
</table>

| user             | If security is set to Explicit, type 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.

<table>
<thead>
<tr>
<th><strong>Advanced Parameters</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>SERVICE NAME</td>
<td>CLIENT <em>(servicename)</em>&lt;br&gt;Defines how to send outbound communications to a remote server.&lt;br&gt;<em>servicename</em> is optional. If <em>servicename</em> is provided, it must match the value of SERVICE in the service block of the server.</td>
</tr>
<tr>
<td>COMPRESSION</td>
<td>Activates data compression in a data transfer between client and server. Type:&lt;br&gt;☑ 0 for no compression.&lt;br&gt;☑ 1 for compression on.</td>
</tr>
<tr>
<td>ENCRYPTION</td>
<td>Defines the encryption. Type:&lt;br&gt;☑ 0 for no encryption.&lt;br&gt;☑ DES for 56-bit fixed-key Data Encryption Standard.&lt;br&gt;☑ 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.&lt;br&gt;☑ IBCRYPT for user-defined algorithm. Key is 512-bit RSA-encrypted. &lt;br&gt;&lt;br&gt;&lt;strong&gt;Note:&lt;/strong&gt; Encryption is not supported for PIPE protocol. Only 0 and DES are supported for HTTP protocol.</td>
</tr>
<tr>
<td>CONNECT_LIMIT</td>
<td>Defines the maximum time, in seconds, that the client will wait for a TCP connection response from the server. Type:&lt;br&gt;☑ -1 for indefinite wait.&lt;br&gt;☑ 0 for no wait.</td>
</tr>
</tbody>
</table>
### Advanced Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
</table>
| MAXWAIT   | Defines the time, in seconds, that the client will wait for a response from the server:  
-1 indicates indefinite timeout. |

5. Click Save when you have provided your parameter values.  
A message indicates that a new server was added.

6. Click Create Synonym.

7. Select the *Filter by owner/schema and object name* check box.

8. Fill in the Owner/schema field and Object name fields.

9. Click Next.

10. Expand *Configured and Remote Servers* to see the new server.

11. Select the new server.  
The Create Synonym, Test, Delete, and Properties buttons appear.
12. Click Test to test the connection.
   If the remote server is started and you typed the correct connection parameters, sample data should appear.

13. Click Close.
   If the test fails, click the server, select Properties, and provide an explicit user ID and password. Then click Save and try the test again.

14. Click Close.

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

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

1. Expand your WebFOCUS environment (for example, localhost).
2. Expand Data Servers.
3. Expand the server.
4. Expand the Applications folder.
5. 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.

6. Select New and then Synonym. The Create Synonym tool opens.
7. In the first window, you can choose any configured Data Adapter or 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.

8. 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.

**Note:** 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 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 EDASERVE.

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 check boxes are selected.

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.

9. For some data sources, you have the option to choose a database or other parameter.

You will have to select an appropriate database or choose Default Database. You will be able to choose from the database tables when this window is complete.

10. 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.

11. 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 tables, select the Default synonym name check box.
12. Click Next.

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.

13. 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.

<table>
<thead>
<tr>
<th>Parameter/Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restrict object type to</td>
<td>Restricts candidates for synonym creation based on the selected object types: Tables, Views, External SQL Scripts, and any other supported objects.</td>
</tr>
<tr>
<td></td>
<td>Selecting <em>External SQL Scripts</em> 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 only one valid SQL Query and does not contain end-of-statement delimiters (&quot;;&quot; or &quot;/&quot;) and comments. For related information, see <em>Location of External SQL Scripts</em> in this chart.</td>
</tr>
<tr>
<td></td>
<td>Depending on the adapter, you can further restrict your search by choosing check boxes for listed objects.</td>
</tr>
<tr>
<td>Parameter/Task</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Database selection</td>
<td>To specify a database from which you can select a table or other object, do one of the following:</td>
</tr>
<tr>
<td></td>
<td>- Check <em>Default database</em> to use the database that has been set as the default database.</td>
</tr>
<tr>
<td></td>
<td>- Select a database from the Select Database drop-down list, which lists all databases in the current DBMS instance.</td>
</tr>
<tr>
<td></td>
<td>Uncheck <em>Default database</em> if you are going to select a database other than the default (This does not apply to Informix SE, for which <em>Default database</em> must be checked.)</td>
</tr>
<tr>
<td>Filter by owner/schema and object name</td>
<td>Selecting this option adds the owner/schema and object name parameters to the screen.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Owner/Schema.</strong> 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:</td>
</tr>
<tr>
<td></td>
<td>- ABC% to select tables or views whose owner/schema begin with the letters ABC.</td>
</tr>
<tr>
<td></td>
<td>- %ABC to select tables or views whose owner/schema end with the letters ABC.</td>
</tr>
<tr>
<td></td>
<td>- %ABC% to select tables or views whose owner/schema contain the letters ABC at the beginning, middle, or end.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Object name.</strong> 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:</td>
</tr>
<tr>
<td></td>
<td>- ABC% to select all procedures whose names begin with the letters ABC.</td>
</tr>
<tr>
<td></td>
<td>- %ABC to select all procedures whose names end with the letters ABC.</td>
</tr>
<tr>
<td></td>
<td>- %ABC% to select all procedures whose names contain the letters ABC at the beginning, middle, or end.</td>
</tr>
<tr>
<td>Parameter/Task</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Location of External SQL</td>
<td>If you specify <strong>External SQL Scripts</strong> in the <strong>Restrict object type to field</strong>, these additional fields are displayed.</td>
</tr>
<tr>
<td>Scripts</td>
<td></td>
</tr>
<tr>
<td>Extension</td>
<td>The following standard naming conventions apply for UNIX, IBM i IFS, and z/OS HFS:</td>
</tr>
<tr>
<td></td>
<td>- In the <strong>Base Location</strong> field, specify the physical directory location of the file that contains the SQL Query.</td>
</tr>
<tr>
<td></td>
<td>- In the <strong>Document Extension</strong> field, enter the extension of the script files to filter the list of candidates.</td>
</tr>
<tr>
<td></td>
<td>On IBM i, you can use alternative IFS naming conventions to access library members. The following entry illustrates this method:</td>
</tr>
<tr>
<td></td>
<td>- In the <strong>Location of External SQL Scripts</strong> field, enter:</td>
</tr>
<tr>
<td></td>
<td><code>/QSYS.LIB/MLIBRARY.LIB/MYSRC.FILE</code></td>
</tr>
<tr>
<td></td>
<td>- The <strong>Extension</strong> is understood to be MBR. You can enter this value explicitly or leave the input box blank.</td>
</tr>
<tr>
<td></td>
<td>During synonym generation, the adapter issues native API calls to obtain a list of elements in the select list and builds the Master File</td>
</tr>
<tr>
<td></td>
<td>with a field for each element. The generated Access File references the location of the SQL script in the DATASET attribute, which</td>
</tr>
<tr>
<td></td>
<td>contains the full path, including the file name and extension to the file containing the SQL Query. For example,</td>
</tr>
<tr>
<td></td>
<td><code>DATASET=/ul/home2/apps/report3.sql</code></td>
</tr>
<tr>
<td></td>
<td>When a WebFOCUS report is created, the SQL Query is used to access data.</td>
</tr>
<tr>
<td>Select Application</td>
<td>Select an application directory. The default value is baseapp.</td>
</tr>
<tr>
<td>Parameter/Task</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Cardinality</td>
<td>Select the <em>Cardinality</em> 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. If the cardinality of the tables to be used in the application are dynamic, it may not be beneficial to choose this setting.</td>
</tr>
<tr>
<td>With foreign keys</td>
<td>Select the <em>With foreign keys</em> 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.</td>
</tr>
<tr>
<td>Dynamic columns</td>
<td>To specify that the Master File created for the synonym should not contain column information, select the <em>Dynamic columns</em> check box. If this option is selected, column data is retrieved dynamically from the data source at the time of the request.</td>
</tr>
<tr>
<td>Prefix/Suffix</td>
<td>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. If all tables and views have unique names, leave prefix and suffix fields blank.</td>
</tr>
<tr>
<td>Customize data type mappings</td>
<td>To change the data type mappings from their default settings, select this check box. The customizable mappings are displayed.</td>
</tr>
<tr>
<td>Overwrite existing synonyms</td>
<td>To specify that this synonym should overwrite any earlier synonym with the same fully qualified name, select the <em>Overwrite existing synonyms</em> check box.</td>
</tr>
<tr>
<td>Default synonym name</td>
<td>This column displays the name that will be assigned to each synonym. To assign a different name, replace the displayed value.</td>
</tr>
<tr>
<td>Parameter/Task</td>
<td>Description</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Select tables</td>
<td>Select tables for which you wish to create synonyms:</td>
</tr>
<tr>
<td></td>
<td>- To select all tables in the list, select the check box to the left of the <em>Default synonym name</em> column heading.</td>
</tr>
<tr>
<td></td>
<td>- To select specific tables, select the corresponding check boxes.</td>
</tr>
</tbody>
</table>

**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. 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.

- ANSWERSETn, 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.

<table>
<thead>
<tr>
<th>Parameter/Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restrict object type to</td>
<td>Select Stored Procedures.</td>
</tr>
<tr>
<td>Filter by owner/schema and object name</td>
<td>Selecting this option adds the owner/schema and object name parameters to</td>
</tr>
<tr>
<td>(for DB2, this applies to all platforms except IBM i)</td>
<td>the screen.</td>
</tr>
</tbody>
</table>

- **Owner/Schema.** 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:
  - ABC% to select tables or views whose owner/schema begin with the letters ABC.
  - %ABC to select tables or views whose owner/schema end with the letters ABC.
  - %ABC% to select tables or views whose owner/schema contain the letters ABC at the beginning, middle, or end.

- **Object name.** 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:
  - ABC% to select all procedures whose names begin with the letters ABC.
  - %ABC to select all procedures whose names end with the letters ABC.
  - %ABC% to select all procedures whose names contain the letters ABC at the beginning, middle, or end.
<table>
<thead>
<tr>
<th>Parameter/Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library</td>
<td>To avoid the return of an extremely large and potentially unmanageable list, always supply a value for Library or Object Name:</td>
</tr>
<tr>
<td>Object Name (IBM i only)</td>
<td>☐ <strong>Library.</strong> 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:</td>
</tr>
<tr>
<td></td>
<td>☐ ABC% to select tables or views whose owner IDs begin with the letters ABC.</td>
</tr>
<tr>
<td></td>
<td>☐ %ABC to select tables or views whose owner IDs end with the letters ABC.</td>
</tr>
<tr>
<td></td>
<td>☐ %ABC% to select tables or views whose owner IDs contain the letters ABC at the beginning, middle, or end.</td>
</tr>
<tr>
<td></td>
<td>☐ <strong>Object name.</strong> 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:</td>
</tr>
<tr>
<td></td>
<td>☐ ABC% to select all tables, views, or objects whose names begin with the letters ABC.</td>
</tr>
<tr>
<td></td>
<td>☐ %ABC to select all whose names end with the letters ABC.</td>
</tr>
<tr>
<td></td>
<td>☐ %ABC% to select all whose names contain the letters ABC at the beginning, middle, or end.</td>
</tr>
<tr>
<td>Select</td>
<td>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.</td>
</tr>
<tr>
<td>Name</td>
<td>The name of the synonym, which defaults to the stored procedure name.</td>
</tr>
<tr>
<td>Select Application</td>
<td>Select an application directory. The default value is baseapp.</td>
</tr>
<tr>
<td>Parameter/Task</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Prefix/Suffix</td>
<td>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. If all procedures have unique names, leave the prefix and suffix fields blank.</td>
</tr>
<tr>
<td>Overwrite existing synonyms</td>
<td>To specify that this synonym should overwrite any earlier synonym with the same fully qualified name, select the Overwrite existing synonyms check box.</td>
</tr>
<tr>
<td>Customize data type mappings</td>
<td>To change the data type mappings from their default settings, select this check box. The customizable mappings are displayed. For information about them, see Data Type Support in the chapter for your adapter in the Adapter Administration for UNIX, Windows, OpenVMS, IBM i, and z/OS manual.</td>
</tr>
<tr>
<td>Parameter/Task</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------</td>
</tr>
</tbody>
</table>
| Values        | Select the check box for every parameter displayed for the specified procedure.  
                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:  
                - 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.  
                - 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.  
                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. |
**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, ACCESSPROPERTY=(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. Select 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 prompted 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.
2. Select 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 the Ascential 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.

**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.** Secures the file so you cannot edit or delete it.
- **Encrypted.** Encrypts the contents of the file if the file has DBA security.

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

A server user who has been granted the required metadata privileges, can configure and manage adapters, and can be permitted to create synonyms through the Reporting Server 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 and Adapter Administration.

**Note:**
- The Reporting Server Console is sometimes referred to as the Web Console.
- For Developer Studio installations that allow stand-alone development, the local default Reporting Server normally runs with security OFF. The user who installed Developer Studio is the default administrator.

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

To open the Reporting Server Console in Developer Studio:
1. Click the Reporting Server Console icon from the Object Explorer toolbar or open the following page in a web browser:

http://hostname:port#/webconsole

The Server Console opens in your web browser.

2. To access the Server Console help, click Help and select Contents and Search. Expand the Adapters folder in the Table of Contents, and review the information for your adapter.
Chapter 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.

In this chapter:

- Development Environment
- Development Tools
- Running an Application

Development Environment

The Explorer is the main window from which all tools and facilities are accessed.
The Explorer contains the following features:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menu Bar</td>
<td>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.</td>
</tr>
<tr>
<td>Main Toolbar</td>
<td>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 Main Toolbar on page 81.</td>
</tr>
<tr>
<td>Commands Toolbar</td>
<td>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 Commands Toolbar on page 82.</td>
</tr>
<tr>
<td>Explorer Toolbar</td>
<td>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 Introducing WebFOCUS and Developer Studio on page 11.</td>
</tr>
<tr>
<td>Title Bar</td>
<td>The title bar of the active window has information for the specific window or tool.</td>
</tr>
<tr>
<td>Tool Tip</td>
<td>Small descriptive text labels appear when the mouse pointer rests on a toolbar button.</td>
</tr>
<tr>
<td>Status Bar</td>
<td>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.</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Button</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Image]</td>
<td>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.</td>
</tr>
<tr>
<td>![Image]</td>
<td>Opens the appropriate tool to graphically edit the selected object. For example, if a Master File is selected, the Synonym Editor opens.</td>
</tr>
<tr>
<td>![Image]</td>
<td>Opens the Text Editor and enables you to edit the FOCUS commands for the selected object.</td>
</tr>
</tbody>
</table>
| ![Image] | Executes the selected object (FOCUS procedure, HTML file). Multi-selected objects are executed in the order in which they are selected.  
To run multi-selected objects, select Window, then Options, and in the General tab of the Developer Studio Options dialog box which opens, select the Use new browser to execute option. |

**Note:** 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 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.

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.
The Cancel running objects button allows users to stop running requests. Users can stop running requests from multiple WebFOCUS Environments that are configured in Developer Studio. A dialog displays the environments where a user has made a connection when pressing the Cancel running objects button. The last environment used to run a job is selected by default.

Users can select to stop running jobs from additional environments as well. Information in the dialog will display with the status of the stop request. When multiple jobs are submitted for processing, they are queued on the Reporting Server and only active jobs for the user will be stopped.

<table>
<thead>
<tr>
<th>Button</th>
<th>Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Button" /></td>
<td>The Cancel running objects button allows users to stop running requests. Users can stop running requests from multiple WebFOCUS Environments that are configured in Developer Studio. A dialog displays the environments where a user has made a connection when pressing the Cancel running objects button. The last environment used to run a job is selected by default. Users can select to stop running jobs from additional environments as well. Information in the dialog will display with the status of the stop request. When multiple jobs are submitted for processing, they are queued on the Reporting Server and only active jobs for the user will be stopped.</td>
</tr>
<tr>
<td><img src="image2" alt="Button" /></td>
<td>Opens a new Explorer window.</td>
</tr>
<tr>
<td><img src="image3" alt="Button" /></td>
<td>Opens the WebFOCUS Maintain Development Environment (MDE). This is only available in the Developer Studio edition.</td>
</tr>
<tr>
<td><img src="image4" alt="Button" /></td>
<td>Opens the Command Console, where you can enter commands and see the results of your queries. See Using the Command Console in the Developing Reporting Applications manual for more information.</td>
</tr>
<tr>
<td><img src="image5" alt="Button" /></td>
<td>Opens the 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 Introducing WebFOCUS and Developer Studio on page 11.</td>
</tr>
</tbody>
</table>

**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 is shown in the image below.

![Commands Toolbar Example](image)

**Note:** If the Commands Toolbar is not shown, click View, and then click **Commands Toolbar**. When the Commands Toolbar is checked, the Commands Toolbar displays.

To add external tools, click the **Add or Modify External Tools** icon. The Developer Studio Options dialog box opens. The External Tools tab is selected, as shown in the following image.

![Developer Studio Options with External Tools Tab](image)

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

1. 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.

2. Click the Add or Modify External Tools icon.

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

3. Type the title in the Tool title field and enter the path in the Tool path field. You can also 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 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 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.

To access the QuickLinks dialog box, select QuickLinks from the View menu when you are in the Developer Studio Explorer.

**Development Tools**

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 Reporting Server and the web server.

**Note:** When naming applications, spaces and special characters are not allowed. For example: ! @ # $ % ^ & * ( ) + =

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. For more information, see *Project Wizard* on page 90.

**Creating data source descriptions**

Use one or more of the following:

- **Synonym Editor.** Provides a graphical interface that enables you to view and modify existing synonyms. For more information, see *Synonym Editor* on page 90.

- **Create Synonym Tool.** Creates synonyms on the Reporting Server if they do not already exist. For more information, see *Create Synonym Tool* on page 91.

  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.
Upload Data File Utility. Allows you to create a WebFOCUS Master File and data file from a local file, such as Excel or CSV file and continue to create reports using WebFOCUS reporting tools.

Building report procedures

Use one or more of the following:

- **Procedure Viewer.** 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. For more information, see Component Connector Toolbar on page 92.
- **Report Painter.** Creates complex, styled reports in a graphical representation of the report page. For more information, see Report Painter on page 94.
- **SQL Report Wizard.** Assists you with SQL passthru which allows you to execute SQL code that retrieves data from an RDBMS. For more information, see SQL Report Wizard on page 98.
- **Text Editor.** Enables administrators to create, view, and edit source code for procedures. For more information, see Text Editor on page 114.
- **Define Tool.** Creates virtual fields that are evaluated before the report is executed. For more information, see Define Tool on page 100.
- **Join Tool.** Defines a relationship between two or more data sources so that a report can use data from all of them at once. For more information, see Join Tool on page 107.
- **Define Function Wizard.** Assists in creating user functions. Once created, your functions can be used in other procedure components. For more information, see Define Function Wizard on page 101.
- **HTML Composer.** Creates reporting procedures and highly refined HTML pages where procedures can be run in a single process. For more information, see HTML Composer on page 112.
- **Document Composer.** Creates compound reports and coordinated compound reports in one integrated process. For more information, see Document Composer on page 113.
- **Match Wizard.** Creates logical expressions. For more information, see Match Wizard on page 121.
Development Tools

- **Engine Tool.** Exposes the FOCUS ENGINE SET commands and enables you to enter ENGINE commands or connection attributes, and override parameters. For more information, 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.** Calls other procedures from the current procedure. For more information, see *Execute Wizard and Include Tool* on page 111.

- **Dimensions Tool.** Creates temporary OLAP hierarchies for a procedure. For more information, see *Dimensions Tool* on page 112.

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. For more information, see *HTML Composer* on page 112.

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. For more information, see *OLAP Graphical Tools* on page 115.

Deploying projects to the web

- **Deploy Wizard.** Partitions and copies files to the specified Reporting Server and web server. You can only access this option from the Projects folder. For more information, see *Deploy Wizard* on page 118.

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. For more information, see *Text Editor* on page 114.
SQL Editor. Allows you to code SQL passthru and highlights any SQL commands within the code. For more information, see SQL Editor on page 117.

Managing your environment

Use one of more of the following:

- **Set Tool.** Resets parameters to change aspects of WebFOCUS default behavior that affect both the local development and deployment environments. For more information, see Set Tool on page 106.

- **Allocation Wizard.** Assigns temporary names and storage locations to files created and used by WebFOCUS. For more information, see Allocation Wizard on page 108.

- **Use Tool.** Identifies a FOCUS data source. For more information, see USE Tool on page 109.

- **Impact Analysis.** Analyzes Master Files and fields and determine if they are used in WebFOCUS procedures. For more information, see Impact Analysis on page 110.

Managing communication with the server

- **Command Console.** Enables you to issue commands to a Reporting Server. For more information, see Command Console on page 119.

- **Reporting Server Console.** Remotely manages your Reporting Server environment. You can view server and agent status and statistics and manage agent connections. For more information, see Reporting Server Console on page 120.
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 *Creating Reporting Applications With Developer Studio* 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.

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

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 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 Reporting Server in the current application. The new synonym appears in the Master Files folder from which the wizard is launched.

**Note:** For data sources, Web Query uses the original Master Files stored on the server, therefore no synonyms are required.
The wizard consists of panels beginning with one shown below, where you select the relational data source you want to generate a synonym for.

**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 toolbox 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 *Creating Reporting Applications With Developer Studio* manual.
Report Painter

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

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 the Creating Reports With Report Painter 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 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 Creating a Calculated Value With Report Painter in the Creating Reports With Report Painter 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.

- Report Painter enables you to create and style complex reports. You can graphically paint the report on the Report Painter window, which is a graphical representation of the report page. The graphical view provides a close approximation of how the report will display at runtime. To get a more WYSIWYG view, use the SET SQUEEZE=OFF command in your report or pin all of the columns of the report. For more information on setting these options, see WebFOCUS Creating Reports With Report Painter Version 7 Release 7.

- **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 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.** 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.** 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 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 Report Painter, see the Creating Reports With Report Painter 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 Report Painter. 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 Reporting Server.

For more information, see the Creating Reporting Applications With Developer Studio manual.
Graph Tool

The Graph Tool 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 Tool, you will see the many features available when creating a graph.

From the tabs in the Graph Tool, 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-axis and Y-axis values.** Add fields to your report to designate the values for the X-axis 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 Tool is available for local and server-based development.

### 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.

![Define Tool screenshot](image)

When you click the Check button, the generated code is validated. A dialog box opens, displaying the component 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 Reporting Applications With Developer Studio* manual.
Define Function Wizard

The Define Function wizard guides you through the process of creating a user function. The first screen of the wizard is shown in the following image.

You can view the progression of the wizard through the images that are shown on the following pages.
The Name section of the Define Function Wizard is shown in the following image. In this window, you supply a name for the Define function, as well as a description.

Please enter the name of the function:

orders

Please provide a function description:

box orders for the Northeast region
The Parameters section of the Define Function Wizard is shown in the following image. In this window, you specify the input parameters of the Define Function. You can rename the parameters, select a format type, and provide a description.
The Defined Fields section of the Define Function Wizard is shown in the following image. A defined field, with the same name as your function, appears. You can add multiple expressions to the Define Function.
The Complete the Define Function Wizard window is shown in the following image. The function, as well as its parameters and logic, are shown in this window before completion of the Define Function.

![Define Function Wizard](image)

Completing the Define Function Wizard

Function name: orders
Parameters: PARAM1/D8, PARAM2/D8, PARAM3/D8, PARAM4/D8
Logic: orders/D8=PARAM1 + 1;

To close this wizard and create a DEFINE FUNCTION command based on the settings above, click Finish.

Graph

If you would like to create a graph, InfoAssist guides you through the best way to add a customizable graph to your report. For more information, see the WebFOCUS InfoAssist 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 a code for the component, 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.
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 Reporting Applications With Developer Studio 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. For more information, see *Execute Wizard and Include Tool* on page 111.

For details about the Allocation Wizard, see *Assigning a Logical Name With the Allocation Wizard* in the *Creating Reporting Applications With Developer Studio* 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. For more information, see *Execute Wizard and Include Tool* on page 111.

The Check button replaces the Run button. When you click the Check button, the generated code is validated. A dialog box opens, displaying the code of the component 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.

![Execute Procedure Wizard - Select External Procedure](image)

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 *Creating Reporting Applications With Developer Studio* 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.

![Dimensions Tool Screenshot]

HTML Composer

You can do the following when using the HTML Composer:

- Build an HTML page. The HTML Composer enables you to add push buttons, hyperlinks, and other objects that launch other WebFOCUS reports in your application.
- Create an HTML 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 the Designing a User Interface for a Web Application With the HTML Composer manual.

**Document Composer**

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 Document Composer, PDF, HTML, active reports, PowerPoint, and Excel are available as output formats.
When you open Document Composer, it appears as shown in the following image.

![Document Composer Interface](image)

**Note:** To include a graph in Document Composer, the graph must be saved in .svg format.

For more information about Document Composer, see the *Creating Compound Reports With Document Composer* 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.

![Editor Window with color-coded text]

For details about this tool, see *Editing Application Components as Text in Developer Studio* in the *Creating Reporting Applications With Developer Studio* 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.
In the following example, the Control Panel is closed to maximize the screen space available for your analytic comparisons.

For details about these tools, see *Analyzing Data in an OLAP Report* in the *WebFOCUS Online Analytical Processing (OLAP)* 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 Report Painter or Graph Tool. The SQLOUT file is a temporary file that you can select when you invoke Report Painter and Graph Tool. 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 *Creating Reporting Applications With Developer Studio* 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 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 Creating Reporting Applications With Developer Studio manual.

**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.

![Image of Command Console](image-url)

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

**Reporting Server Console**

The Reporting Server has the capabilities of a regular Reporting Server, and its configuration procedures are identical. 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 Reporting Server Console, sometimes referred to as the Web Console, enables a developer to independently manage the 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 *Creating Reporting Applications With Developer Studio* manual.

**Note:** When launching this tool from the main toolbar, or selecting *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 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 Reporting Server Console for the selected server. This is supported on Windows, UNIX, and USS platforms.

**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 the *Creating Reporting Applications With Developer Studio* 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 which 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 Reporting Applications With Developer Studio* manual.

## Running an Application

You can run applications you create using the Run button ![Run button](image). The Run button can be accessed through the main Developer Studio Toolbar or the toolbar of whichever tool you are using to create your application.

When an application is run, it will open in the Developer Studio Viewer, as shown in the image below.

![Developer Studio Viewer](image)
The Developer Studio Viewer functions similar to a web browser. It has forward, back, stop, and reload buttons. It also has an address bar for entering application names and locations.

Using the Output Viewer Options tab from the Developer Studio Options dialog box, you can choose to run applications in Internet Explorer. You can also choose to run applications in a new window or refresh in a currently open window. For more information on the Output Viewer Options tab, see Output Viewer Settings Tab on page 142.

Clicking the Run button arrow opens a submenu. From this submenu, you can select the Message Viewer Options which will affect the Developer Studio Viewer display when an application is run. You can select Message Viewer OFF, Message Viewer ON, Display Command lines, and Display Dialogue Manager commands. When you select Message Viewer OFF and run a report, the Developer Studio Viewer window displays the report with no message, as shown in the following image.
When you select Message Viewer ON and run a report, the Developer Studio Viewer window displays the report and a message, as shown in the following image.
Setting Preferences

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

In this chapter:

- Developer Studio Options
- General Tab
- Reporting Tab
- HTML Page Tab
- Document Tab
- Explorer Tab
- Source Control Tab
- External Tools Tab
- Title Format Tab
- Output Viewer Settings Tab

**Developer Studio Options**

To access the Developer Studio 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. For more information, see *General Tab* on page 126.

- **Reporting.** This tab contains format options for output, field list displays, formatting a report for the web, and setting the record retrieval limits. For more information, see *Reporting Tab* on page 128.

- **HTML Page.** This tab enables you to set grid settings for an HTML page, preview reports and graphs, set single or multiple layers, and alter the frequency in which you refresh thumbnails. For more information, see *HTML Page Tab* on page 134.
- **Document.** This tab sets grid settings for a Document, preview reports and graphs, and alters the frequency in which you refresh thumbnails. For more information, see *Document Tab* on page 137.

- **Explorer.** This tab enables you to change the viewable contents of the Developer Studio Explorer tree and schedule an automatic refresh of the contents. For more information, see *Explorer Tab* on page 138.

- **Source Control.** This tab enables you to activate a default version control system. For more information, see *Source Control Tab* on page 139.

- **External Tools.** This tab enables you to launch an application from the Command menu. For more information, see *External Tools Tab* on page 141.

- **Title Format.** This tab enables you to customize the information display in the Developer Studio title bar. For more information, see *Title Format Tab* on page 141.

- **Output Viewer.** This tab enables you to customize whether applications are run in Internet Explorer or the Developer Studio Viewer. You can also specify whether applications are run in a new window or refreshed in a currently open window. For more information, see *Output Viewer Settings Tab* on page 142.

### General Tab

The General tab contains the following options:

**Startup Options**

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

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>When running a Procedure</td>
<td>Minimizes the main window when any procedure (FOCEXEC) is executed.</td>
</tr>
</tbody>
</table>

### Other Settings

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Save window positions on exit</td>
<td>Saves the positions of all windows so that they appear in the same place the next time they open.</td>
</tr>
<tr>
<td>Confirm close</td>
<td>Displays a prompt for users to confirm that they want to exit Developer Studio.</td>
</tr>
<tr>
<td>Use large buttons</td>
<td>Displays large toolbar buttons.</td>
</tr>
<tr>
<td>Start local WebFOCUS Server</td>
<td>Starts the local Reporting Server when Developer Studio is launched.</td>
</tr>
<tr>
<td>Stop local WebFOCUS Server on exit</td>
<td>Stops and closes the local Reporting Server when you exit Developer Studio.</td>
</tr>
<tr>
<td>Start local Web server</td>
<td>Starts the IIS web server by default if you are performing a full installation for stand-alone development.</td>
</tr>
<tr>
<td></td>
<td>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 Start local Web server 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.</td>
</tr>
<tr>
<td></td>
<td>This option will be enhanced to allow developers to select which web server or application server to start when launching their desktop application.</td>
</tr>
</tbody>
</table>
**Default file editor**

Lists file editor options, such as:
- Edit in Developer Studio tool
- Edit in Text Editor
- Edit in Windows registered tool

**Note:** The option above is only visible if the file type you are accessing has been associated with a Windows application.

The file editor used determines which context menu options will be available and controls the default behavior for double-clicking and right-clicking files.

---

## Reporting Tab

The Reporting tab contains the following options:

### Format Output for...

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screen</td>
<td>Select Screen to format reports for the screen.</td>
</tr>
<tr>
<td>Printer</td>
<td>Select Printer to format reports for the printer.</td>
</tr>
</tbody>
</table>

The following options affect the display of the Fields window:

### Field List Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sort the list by field name</td>
<td>Sorts any list of field names alphabetically.</td>
</tr>
<tr>
<td>Show fully qualified field names</td>
<td>Displays any list of field names as qualified field names, which includes data source and table names, alphabetically.</td>
</tr>
<tr>
<td>Display the field name</td>
<td>Displays the full field name in the Fields window, as specified in the file description.</td>
</tr>
</tbody>
</table>
### Field List Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display the field alias</td>
<td>Displays the alternate field name in the Fields window, as specified in the file description.</td>
</tr>
<tr>
<td>Display field titles</td>
<td>Displays the column title in the Fields window, as specified in the file description.</td>
</tr>
<tr>
<td>Display field descriptions</td>
<td>Displays descriptive information about the field in the Fields window, as specified in the file description.</td>
</tr>
<tr>
<td>Display the data formats</td>
<td>Displays the field length and format type in the Fields window, as specified in the file description.</td>
</tr>
<tr>
<td>Expand field tree</td>
<td>Displays fields in expanded mode when using a Field Tree. If this option is not selected, segments appear collapsed wherever a Field Tree appears.</td>
</tr>
</tbody>
</table>

**Note:** This option can also be accessed from the Field Tree context menu.

| Display Filters in Filters Folder   | 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. |

**Note:** This option can also be accessed from the Field Tree context menu.

### Style Sheet Merge Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drilldowns</td>
<td>Preserves drilldowns in your current StyleSheet when you apply another StyleSheet to a report.</td>
</tr>
</tbody>
</table>

### Authoring Mode

The Authoring Mode options determine how fieldnames in a procedure (.fex) are written in the WebFOCUS source code. These options are not affected by the selected Field List options.
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualified field name</td>
<td>Writes the source code using qualified field names, for example: [BY 'GGSALES.SALES01.CATEGORY']</td>
</tr>
<tr>
<td>Unqualified field name</td>
<td>Writes the source code using unqualified field names, for example: [BY CATEGORY]</td>
</tr>
</tbody>
</table>
| Alias field name       | Writes the source code using alias field names, as defined in the ALIAS field of the Master File. The ALIAS field assigns an alternative name for a column. 
                          The following example shows source code where the Category field name is assigned E02 in the ALIAS field of the ggsales.mas Master File. 
                          \[BY E02\]                                                                                                                                   |
### Other Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
</table>
| Default Report Format | Select the display format for your reports. You may choose:  
- Web (HTML)  
- HTML active report  
- active report for Flash  
- active report for PDF  
- Adobe Acrobat (PDF)  
- Excel 2007  
- Excel 2000  
- PowerPoint  
- FOCUS default (This option applies whichever of the previous formats was set as an environment parameter.)  
- User |
<p>| Maximum number of records to retrieve/Maximum number of readings to make | 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. |</p>
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default Style Template</td>
<td>Specifies the default style template file. By default, this file is named default.stl and is located in your Developer Studio bin directory. The default.stl file specifies the name of the default style sheet used for each development area (localhost, Data Servers, Managed Reporting, and Repository). You can edit this file.</td>
</tr>
<tr>
<td>Note:</td>
<td>Managed Reporting is only for releases prior to WebFOCUS 8. Repository is only for WebFOCUS 8 and higher.</td>
</tr>
<tr>
<td>Within default.stl, there</td>
<td>are four entries:</td>
</tr>
<tr>
<td>LOCAL=endeflt</td>
<td>LOCAL represents the localhost development area.</td>
</tr>
<tr>
<td>DATASERVER=endeflt</td>
<td>DATASERVER represents the Data Servers development area.</td>
</tr>
<tr>
<td>WFC=endeflt</td>
<td>WFC represents the Repository development area.</td>
</tr>
<tr>
<td>MRE=endeflt</td>
<td>MRE represents the Managed Reporting development area.</td>
</tr>
<tr>
<td>Default Report Template</td>
<td>Specifies the default report settings when you open Report Painter.</td>
</tr>
</tbody>
</table>

### Setting the Default Report Format

The Reporting tab of the Developer Studio Options dialog box allows you to set a report format that will be used as the default format by Report Painter.

**Procedure: How to Set the Default Report Format**

The following procedure describes how to set the default report format. For this task, you will select the User format.

1. From Developer Studio, click Window from the menu bar.
2. Select Options.
3. Select the *Reporting* tab.

4. From the Default Report Format drop-down list, select the required format, as shown in the following image.

5. Click **OK**.

The User output is now the Default Report Option in the Developer Studio Report Painter. The User format allows the developer to select the actual output type at run time. For example, a developer could choose to view a report as Excel 2007, PDF, active report for Flash, and more.
HTML Page Tab

The HTML Page tab contains the following options:

**Grid Settings**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show Grid</td>
<td>The Show Grid check box is checked by default. It enables users to view a grid while they create an HTML Page. Deselect this check box if you do not want to develop with a grid.</td>
</tr>
<tr>
<td>Snap to Grid</td>
<td>The Snap to Grid check box is checked by default. It enables users to snap to a grid on demand. Deselect this check box if you do not wish to enable the snap to a grid option.</td>
</tr>
<tr>
<td>Width</td>
<td>The Width text field enables you to customize the width of your grid. The default is 10 pixels.</td>
</tr>
<tr>
<td>Height</td>
<td>The Height text field enables you to customize the height of your grid. The default is 10 pixels.</td>
</tr>
</tbody>
</table>

**Form type**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Select the None radio button for the HTML Page if you do not wish to have any layers in the HTML Page.</td>
</tr>
<tr>
<td>Single layer</td>
<td>Select the Single layer radio button for the HTML Page if you only want a Single layer in the HTML Page. Single layer is selected by default.</td>
</tr>
<tr>
<td>Multiple layer</td>
<td>Select the Multiple layer radio button for the HTML Page if you want multiple layers in the HTML Page. Click the Form Settings button to open the Form settings dialog box. This Form settings options are described as follows.</td>
</tr>
</tbody>
</table>

The Form settings dialog box appears when a user clicks the Form Settings button to the Multiple layer radio button.
### Prompts orientation

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>To the left of the input</td>
<td>Select the <em>To the left of the input</em> radio button if you want the prompt orientation to appear to the left of the form settings. This is not the default setting.</td>
</tr>
<tr>
<td>Above the input</td>
<td>Select the <em>Above the input</em> radio button if you want the prompt orientation to appear above</td>
</tr>
<tr>
<td>Distance between prompt and input</td>
<td>The default distance between prompt and input is 5 pixels. Adjust the distance to your preference anywhere between 0 and 99 pixels.</td>
</tr>
<tr>
<td>Horizontal distance between controls</td>
<td>The default horizontal distance between controls is 10 pixels. Adjust the distance to your preference anywhere between 0 and 99 pixels.</td>
</tr>
<tr>
<td>Vertical distance between controls</td>
<td>The default vertical distance between controls is 10 pixels. Adjust the distance to your preference anywhere between 0 and 99 pixels.</td>
</tr>
<tr>
<td>Number of columns</td>
<td>The default horizontal distance between controls is 10 pixels. Adjust the distance to your preference anywhere between 0 and 99 pixels.</td>
</tr>
<tr>
<td>Default slider control type</td>
<td>The Default slider control type enables users to select an option from the Horizontal Slider with drop-down list. Options include:</td>
</tr>
<tr>
<td></td>
<td>- Horizontal Slider Simple.</td>
</tr>
<tr>
<td></td>
<td>- Vertical Slider Simple.</td>
</tr>
<tr>
<td></td>
<td>- Horizontal Slider with Color Bar and Arrows.</td>
</tr>
<tr>
<td></td>
<td>- Vertical Slider with Color Bar and Arrows.</td>
</tr>
<tr>
<td></td>
<td>- Horizontal Slider with Color Bar, Arrows, and Edit.</td>
</tr>
<tr>
<td></td>
<td>- Vertical Slider with Color Bar, Arrows, and Edit.</td>
</tr>
</tbody>
</table>
### Option Description

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Schedule button</td>
<td>Selected by default, the Add Schedule button check box adds a schedule to your HTML Page.</td>
</tr>
<tr>
<td>Add defer button</td>
<td>Selected by default, the Add defer button check box enables running a report deferred.</td>
</tr>
<tr>
<td>Start each chain on a new line</td>
<td>Selected by default, the Start each chain on a new line check box enables users to start chains on the same line.</td>
</tr>
</tbody>
</table>

### Check box Options Description

<table>
<thead>
<tr>
<th>Check box Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show 'New Parameters' dialog</td>
<td>Selected by default, the New Parameters dialog box will appear in the HTML Page.</td>
</tr>
<tr>
<td>Show 'Template Selector' dialog</td>
<td>Selected by default, the Template Selector dialog box will appear in the HTML Page.</td>
</tr>
<tr>
<td>Activate 'Unlock Template' option</td>
<td>Selected by default, the Unlock Template option will appear in the HTML Page.</td>
</tr>
<tr>
<td>Default caching option</td>
<td>Selected by default, the Default caching option will run in the HTML Page.</td>
</tr>
<tr>
<td>Auto Arrange Objects</td>
<td>Selected, by default the Auto Arrange Objects will arrange the objects in the HTML Page automatically.</td>
</tr>
</tbody>
</table>

### Preview settings

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report and Graph Preview</td>
<td>Selected by default, the Report and Graph Preview check box enables users the option to preview reports and graphs before saving and deploying the HTML Page.</td>
</tr>
<tr>
<td>Simulated Data</td>
<td>The Simulated Data radio button enables a user to run the HTML Page based on simulated data from WebFOCUS.</td>
</tr>
</tbody>
</table>
### Options

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live Data</td>
<td>Selected by default, the Live Data radio button enables users to run reports and graphs using live data in the HTML Page.</td>
</tr>
<tr>
<td>Record limit for reports</td>
<td>The Record limit for reports is 500 by default. Adjust the value from -1 to 999.</td>
</tr>
<tr>
<td>Record limit for input controls</td>
<td>The Record limit for input controls is 10 by default. Adjust the value from -1 to 999.</td>
</tr>
<tr>
<td>Use Prefix</td>
<td>The Use Prefix check box is not selected by default. If selected, your HTML Page will have a prefix.</td>
</tr>
<tr>
<td>Refresh thumbnails every seconds</td>
<td>The Refresh thumbnails every seconds option by default is 20. Adjust the value from 0 to 999.</td>
</tr>
<tr>
<td>Default Theme</td>
<td>Set the default theme for HTML pages. The Information Builders theme is selected by default.</td>
</tr>
</tbody>
</table>

### Document Tab

The Document tab contains the following options:

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grid Settings</strong></td>
<td></td>
</tr>
<tr>
<td>Show Grid</td>
<td>The Show Grid check box is checked by default. It enables users to view a grid while they create a Document. Deselect this check box if you do not want to develop with a grid.</td>
</tr>
<tr>
<td>Snap to Grid</td>
<td>The Snap to Grid check box is checked by default. It enables users to snap to a grid on demand. Deselect this check box if you do not wish to enable the snap to a grid option.</td>
</tr>
<tr>
<td>Width</td>
<td>The Width text field enables you to customize the width of your grid. The default is 10 pixels.</td>
</tr>
<tr>
<td>Height</td>
<td>The Height text field enables you to customize the height of your grid. The default is 10 pixels.</td>
</tr>
</tbody>
</table>
### 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

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show Projects on Explorer tree</td>
<td>Shows the Projects area in the Explorer tree. This is the default option.</td>
</tr>
<tr>
<td>Show Data Servers area</td>
<td>Shows the Data Servers area in the Explorer tree.</td>
</tr>
<tr>
<td>Show Cluster Node Alternates</td>
<td>Shows the Reporting Server Cluster Nodes and the Reporting Servers that are part of the Cluster Node configuration.</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Show Managed Reporting area</td>
<td>Shows the Managed Reporting area in the Explorer tree.</td>
</tr>
<tr>
<td>Show Web Applications area</td>
<td>Shows the Web Applications area in the Explorer tree.</td>
</tr>
<tr>
<td>Show Desktop on Explorer tree</td>
<td>Shows the Windows Desktop in the Explorer tree, showing all of the files on your local PC and network.</td>
</tr>
<tr>
<td>Schedule an automatic refresh</td>
<td>Automatically refreshes the contents in the Explorer tree at a scheduled interval of time. The default automatic refresh time is set to 10 minutes.</td>
</tr>
</tbody>
</table>

### Source Control Tab

The Source Control tab contains the following options:

#### Installed Version Control Providers

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Source Control providers are available</td>
<td>This is displayed when the product does not detect any supported Source Control client software.</td>
</tr>
<tr>
<td>Installed Source Control providers</td>
<td>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 <em>Installed Source Control providers</em> option if you do not want to use the Source Control feature.</td>
</tr>
</tbody>
</table>

**Note:** Source Control software is third-party software that is installed separately from Developer Studio. The Source Control software can be installed on the developers PC after Developer Studio is installed. When Source Control software is enabled, interface options are enabled in Developer Studio to allow developers to use the Source Control feature.
### Option

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requires Custom Development Directory</td>
<td>This option is used by some source control systems and means that they require a staging area for their usage.</td>
</tr>
<tr>
<td>Enable Support for Local Project Exclusion</td>
<td>When selected, it allows developers that do not want to use Source Control to exclude Projects that are added to Source Control. For more information, see <em>How to Enable Support for Local Project Exclusion</em> on page 140.</td>
</tr>
</tbody>
</table>

### Procedure: How to Enable Support for Local Project Exclusion

This option is available from the Windows/Options... dialog box under the Source Control tab. It is applicable for local or remote Project development. When selected, it allows developers that do not want to use Source Control to exclude Projects that are added to Source Control.

1. Select *Options* from the Window drop-down and select the *Source Control* tab.
2. Select the *Enable Support for Local Project Exclusion* check box, as shown in the following image.

![Developer Studio Options](image-url)
Enabling support for local project exclusion makes the selected Projects behave as if they were not added to Source Control. The current developer can access files from this Project without getting source control prompts. For all other users that are working against the same environment and do not have this flag turned on for the specific Project, the Project will still show as Source Controlled.

**External Tools Tab**

The External Tools tab contains the following options:

**Available Version Control Systems**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of registered external tools</td>
<td>Enables you to launch an application (Executable File) from the Command menu. For more information about adding external tools, see <em>How to Add or Modify External Tools</em> on page 83.</td>
</tr>
<tr>
<td>Tool title</td>
<td>When you provide a descriptive name for the application, Developer Studio displays this title on the Command menu.</td>
</tr>
<tr>
<td>Tool path</td>
<td>Type the path name for the file or click the <em>Browse</em> (binoculars) icon to locate an executable file.</td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBFS Path (long Name)</td>
<td>Displays the full path of the file using the IBFS naming convention.</td>
</tr>
<tr>
<td>FileName (Short Name)</td>
<td>Displays only the file name.</td>
</tr>
<tr>
<td>Show Tool Name</td>
<td>Adds the Tool name before the file name.</td>
</tr>
</tbody>
</table>
Output Viewer Settings Tab

You can customize whether applications are run in Internet Explorer or the Developer Studio Viewer. You can also specify whether applications are run in a new window or refreshed in a currently open window. The Output Viewer Settings tab contains the following options:

### Output Viewer Settings

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<th>Description</th>
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<td>Use Internet Explorer</td>
<td>When selected, your application will run in an Internet Explorer window instead of the Developer Studio Viewer.</td>
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### Navigation Options

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<th>Description</th>
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<tr>
<td>Run in new window</td>
<td>When selected, runs the application in a new window. Only one Navigation Option can be selected at a time.</td>
</tr>
<tr>
<td>Run in same window</td>
<td>When selected, refreshes an already open window to display the application. If no window is open, a new one will open when the application is run. Only one Navigation Option can be selected at a time.</td>
</tr>
<tr>
<td>Term</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>.fex</td>
<td>The file extension for a procedure.</td>
</tr>
<tr>
<td>Access File</td>
<td>Contains information needed by WebFOCUS to access the data in a data source. The Access File includes the real name and location of the data source.</td>
</tr>
<tr>
<td>active report</td>
<td>An active report is a self-contained report that is designated for offline analysis. It contains all of the data and JavaScript code within the output file.</td>
</tr>
<tr>
<td>Allocation Wizard</td>
<td>A Developer Studio wizard that helps assign temporary names and storage locations to files created and used by WebFOCUS.</td>
</tr>
<tr>
<td>data file</td>
<td>See Master File.</td>
</tr>
<tr>
<td>Data Server</td>
<td>A type of environment that displays each Reporting Server that the WebFOCUS Client can access. The Data Servers feature enables development against Reporting Servers that are configured on any supported platform.</td>
</tr>
<tr>
<td>Define tool</td>
<td>A Developer Studio tool that creates virtual fields that are evaluated before the report is executed.</td>
</tr>
<tr>
<td>Define Function Wizard</td>
<td>A Developer Studio wizard that assists in creating user functions. Once created, your functions can be used in other procedure components.</td>
</tr>
<tr>
<td>Deploy Wizard</td>
<td>A Developer Studio wizard that partitions and copies files to the specified Reporting Server and web server.</td>
</tr>
<tr>
<td>Developer Studio Options dialog box</td>
<td>A dialog box where you can set preferences for Developer Studio and the Developer Studio tools.</td>
</tr>
<tr>
<td>Glossary</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Developer Studio Explorer</td>
<td>A window where you can navigate through your currently configured environments and provides access to development tools to quickly build and deploy web-based reporting applications.</td>
</tr>
<tr>
<td>Document Composer</td>
<td>A Developer Studio tool where you can coordinate and distribute layouts made up of multiple reports and graphs in a single document. For more information, see the <em>Creating Compound Reports With Document Composer</em> manual.</td>
</tr>
<tr>
<td>field</td>
<td>A set of data pertaining to a specific topic. For example, the SEATS field, within the CAR Master File, contains data for the number of seats in each car.</td>
</tr>
<tr>
<td>Graph tool</td>
<td>A Developer Studio tool where you can create and style complex graphs.</td>
</tr>
<tr>
<td>Guided Report</td>
<td>A highly parameterized report that allows you to select fields and options that participate in a report at run time. Fields and options that have been added to the Guided Report are displayed in controls and are available for selection. Selecting fields from controls and running the report will display the data that correlates to the field values.</td>
</tr>
<tr>
<td>HTML Composer</td>
<td>A Developer Studio tool you can use to create HTML pages. For more information, see the <em>Designing a User Interface for a Web Application With HTML Composer</em> manual.</td>
</tr>
<tr>
<td>Join tool</td>
<td>A Developer Studio tool that defines a relationship between two or more data sources so that a report can use data from all of them at once.</td>
</tr>
<tr>
<td><strong>local development</strong></td>
<td>Using a Reporting Server installed on your machine to deploy self-service applications from the Projects area.</td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Match Wizard</strong></td>
<td>A Developer Studio wizard that creates logical expressions.</td>
</tr>
<tr>
<td><strong>Main toolbar</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Master File</strong></td>
<td>A type of file that describes the data source from which you are reporting. The Master File is a map of the data source and all of the fields. By looking at the Master File, you can determine what fields are in the data source, what they are named, and how they are formatted. You can also determine how the fields in the data source relate to each other.</td>
</tr>
<tr>
<td><strong>Menu bar</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>procedure</strong></td>
<td>A series of components that can be executed one after another. For example, a procedure can consist of a Join, Set, and report.</td>
</tr>
<tr>
<td><strong>Procedure Viewer</strong></td>
<td>A graphical presentation of components that make up a procedure.</td>
</tr>
<tr>
<td><strong>Projects on localhost</strong></td>
<td>A local environment where you can 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 visible in the HTML Files folder. Master Files, Access Files, and FOCUS Files are visible in the Master Files folder. The Maintain Files folder contains Maintain procedures. A sample project named SESSION is created when Developer Studio is installed.</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>remote development</strong></td>
<td>Connecting to one or more remote servers and modifying existing self-service applications on those servers.</td>
</tr>
<tr>
<td><strong>Repository</strong></td>
<td>A type of environment where you can use Developer Studio to administer and develop against a Managed Reporting environment.</td>
</tr>
<tr>
<td><strong>Report Painter</strong></td>
<td>A Developer Studio tool that creates and styles complex reports. You can design the report in the Report Painter window, a graphical representation of the report page.</td>
</tr>
<tr>
<td><strong>Set tool</strong></td>
<td>A Developer Studio tool used to reset parameters in order to change aspects of WebFOCUS default behavior that affect both the local development and deployment environments.</td>
</tr>
<tr>
<td><strong>source control</strong></td>
<td>Manages access to source code and keeps track of all code changes.</td>
</tr>
<tr>
<td><strong>SQL Report</strong></td>
<td>A type of report where you can execute SQL code that retrieves data from a Relational Database Management System (RDBMS) and then use the resulting extract file in Report Painter.</td>
</tr>
<tr>
<td><strong>synonym</strong></td>
<td>A set of attributes that describe a data source. It provides the metadata for a data source, which enables an adapter to access and interpret the corresponding data.</td>
</tr>
<tr>
<td><strong>Synonym Editor</strong></td>
<td>A Developer Studio tool that provides you with a graphical interface to work with synonyms and perform tasks, such as creating, viewing, and modifying synonyms.</td>
</tr>
<tr>
<td>--------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Use tool</strong></td>
<td>A Developer Studio tool that identifies a FOCUS data source.</td>
</tr>
<tr>
<td><strong>Web Applications</strong></td>
<td>A type of environment that displays the contents of the APPROOT directory of the WebFOCUS Client. 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.</td>
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