Information Builders

WebFOCUS

WebFOCUS and ReportCaster
Installation and Configuration
for Windows
Release 8206

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Contents

Preface

This content describes how to install and configure WebFOCUS and WebFOCUS ReportCaster on machines running Windows® operating systems. This documentation is intended for system administrators with knowledge of Windows operating systems.

How This Manual Is Organized

This manual includes the following chapters:

	Chapter/Appendix	Contents
1	Introducing WebFOCUS and ReportCaster Installation	Provides an overview of WebFOCUS and ReportCaster, including how WebFOCUS and ReportCaster process report requests, and the available installation configurations.
2	WebFOCUS and ReportCaster Installation Requirements	Provides the necessary requirements for installing and configuring WebFOCUS and ReportCaster.
3	Installing the WebFOCUS Client	Provides instructions for installing the WebFOCUS Client.
4	Configuring Web and Application Servers	Describes how to configure web and application servers to run WebFOCUS and ReportCaster.
5	Post-Installation Verification and Configuration	Describes how to configure WebFOCUS Client and ReportCaster.
6	WebFOCUS ReportCaster Post-Installation Tasks	Describes ReportCaster post-installation tasks.
7	Business Intelligence Portal and Home Page Verification and Security	Provides instructions for verifying and setting up WebFOCUS Business Intelligence Portal.
8	Troubleshooting WebFOCUS and ReportCaster	Provides information for tracking errors and debugging problems with WebFOCUS and ReportCaster.
9	Solr Installation and Configuration	Describes how to configure Solr, an open-source, high-performance, full-featured enterprise-search platform.
A	Magnify Configuration	Contains instructions to configure Magnify.

	Chapter/Appendix	Contents
B	Additional Graph Configuration Options	Explains how to configure WebFOCUS graphics options.
C	Additional WebFOCUS Repository Topics and Tasks	Provides additional information on the WebFOCUS Repository.
D	Additional WebFOCUS Configuration Options	Describes how to manually configure multiple WebFOCUS instances, custom URLs, and MVS deferred receipts.

Conventions

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

Convention	Description
THIS TYPEFACE or this typeface	Denotes syntax that you must enter exactly as shown.
this typeface	Represents a placeholder (or variable), a cross-reference, or an important term.
<u>underscore</u>	Indicates a default setting.
Key + Key	Indicates keys that you must press simultaneously.
{ }	Indicates two or three choices. Type one of them, not the braces.
[ ]	Indicates a group of optional parameters. None is required, but you may select one of them. Type only the parameter in the brackets, not the brackets.
		Separates mutually exclusive choices in syntax. Type one of them, not the symbol.
...	Indicates that you can enter a parameter multiple times. Type only the parameter, not the ellipsis (...).

Convention	Description
. . .	Indicates that there are (or could be) intervening or additional commands.

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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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Chapter 1

Chapter 1

Introducing WebFOCUS and ReportCaster Installation

This chapter provides an overview of WebFOCUS and ReportCaster and their installation and configuration procedures. For detailed information on the capabilities and functions of these products, see the *ReportCaster* manual.

In this chapter:

❑ About WebFOCUS and ReportCaster

❑ WebFOCUS Installation Overview

❑ ReportCaster Installation Overview

❑ WebFOCUS and ReportCaster Installation and Configuration Steps

❑ Application Server and Web Application Overview

❑ Security and User IDs for WebFOCUS and ReportCaster

About WebFOCUS and ReportCaster

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 or through formats, such as PDF, XLS, and XML. Using HTML and user friendly GUI tools, WebFOCUS developers can build powerful webpage interfaces that allow users to create and view reports.

WebFOCUS 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, databases, file systems, file formats, and networks. You can access both local and remote data on over 35 platforms from more than 65 database formats, including SQL Server™, Oracle®, Ingres®, SAP®, and Db2®.

ReportCaster is an independent application that provides advanced scheduling and distribution capabilities for WebFOCUS reports, procedures, and alerts, as well as independent files and URLs. Using ReportCaster, reports and files are automatically distributed on a monthly, weekly, daily, or specific day basis.

WebFOCUS Installation Overview

This section briefly explains the different WebFOCUS installation components, as well as how those components interact and are configured.

WebFOCUS and Your Network

WebFOCUS seamlessly integrates into your existing network by connecting web servers and application servers to your data. End users, developers, and administrators then access WebFOCUS through a web browser.

The main requirements for installing WebFOCUS are:

❑ **Web Browser.** To access WebFOCUS applications, you need a web browser and a TCP/IP connection to a web server or application server.

❑ **Web Server and Application Server.** WebFOCUS runs in part through a web server or application server. WebFOCUS is flexible and offers several configuration options, so you can choose whether to use both a web server and an application server or just an application server. Apache Tomcat™ is provided and can be used as both a web server and application server.

Web servers handle requests by returning static files to a web browser or by executing processes that provide additional functionality. Application servers execute Java servlets or other processes that the web server does not handle.

WebFOCUS functionality can be implemented using Java servlets. Connecting with Java servlets is required for most advanced features. For Java servlets, an application server is required and you can use WebFOCUS with or without an external web server.

Note: Either an application server or a servlet container or engine can be used to process WebFOCUS Java requests. However, the term *application server* is used in this documentation unless referring to a specific third-party product.

❑ **Data.** WebFOCUS can access data from almost anywhere. To access data, you should know its location on your network and any necessary sign-in information.

A complete list of requirements is provided in *WebFOCUS and ReportCaster Installation Requirements* on page 31.

WebFOCUS Components

There are two main WebFOCUS components to install:

❏ **WebFOCUS Client.** The WebFOCUS Client runs as part of your application server and connects WebFOCUS to the web. When a user makes a request from a browser, the WebFOCUS Client receives and processes the request by passing it to the WebFOCUS Reporting Server. The WebFOCUS Client installation includes:

❏ Java-based web connectivity components.

❏ User interfaces, tools, and utilities.

❏ **WebFOCUS Reporting Server.** The WebFOCUS Reporting Server resides on machines that can access your data. The WebFOCUS Reporting Server provides data access, number crunching, and report generation functionality using WebFOCUS integration technology.

During the WebFOCUS Client and ReportCaster installation, your license determines the components you install. The following options are available:

❏ **Business Intelligence Portal (BI Portal).** BI Portal enables your organization to grant authorized users access to information they need while restricting unauthorized users from sensitive or confidential data.

❏ **InfoAssist.** WebFOCUS InfoAssist extends the power of WebFOCUS Managed Reporting. InfoAssist provides business users with the most advanced, yet simple to use, ad hoc reporting features needed to create intricate reports and perform insightful analysis.

❏ **Favorites.** Favorites are reports, graphs, hyperlinks, and any other item type, except Reporting Objects, that are added to the Favorites list of a Managed Reporting user. Adding items to the Favorites list enables you to display the items on mobile devices.

❏ **ReportCaster.** ReportCaster is an independent application that provides advanced scheduling and distribution capabilities for WebFOCUS reports, procedures, and alerts, as well as independent files and URLs.

❏ **Magnify.** Magnify is an enterprise search solution that allows you to search your structured and unstructured business content across multiple data sources and systems. The Magnify search page is an easy-to-use, interactive user interface that dynamically categorizes search results, allows you to sort results based on several criteria, and includes an option to present results in a tabular format. It can also offer you access to real-time data (for instance, by including links to WebFOCUS reports in the search results).

❏ **WebFOCUS Web Services.** WebFOCUS Web Services allow you to develop applications in the .NET or Java environments and perform WebFOCUS functionality from it.

The following WebFOCUS products can be purchased and installed separately:

❏ **WebFOCUS App Studio.** App Studio can be installed on Windows and provides a development environment for WebFOCUS and Maintain applications. App Studio enables you to create advanced applications using a Windows GUI environment. For more information, see the App Studio documentation.

❏ **WebFOCUS RStat.** WebFOCUS RStat is a statistical modeling workbench. It allows you to perform common statistical, data mining tasks, and develop models that can be deployed as scoring applications on every platform. RStat enables data miners and Business Intelligence developers to collaborate with the same tools used to access, manipulate, or transform data, develop predictive models, and create and deploy scoring applications, as well as associated reports, to any worker within their organization.

❏ **WebFOCUS Quick Data.** WebFOCUS Quick Data is a Microsoft® Office® add-on that enables you to connect Microsoft Excel® directly to WebFOCUS reporting tools, where you can access and analyze all of your enterprise data.

❏ **WebFOCUS Performance Management Framework (PMF).** PMF is a WebFOCUS application template for tracking, storing, and aggregating metrics into scorecards to clearly evaluate goals. For more information, see the *WebFOCUS Performance Management Framework* manual.

WebFOCUS Processing

The following steps and figure describe how WebFOCUS processes WebFOCUS report requests:

1. A user requests a report and passes parameters by calling a WebFOCUS servlet through links and forms on a webpage.

2. The request and parameters come to the WebFOCUS Client on the web or application server, which processes the parameters and creates a request for the WebFOCUS Reporting Server.

3. The WebFOCUS Reporting Server receives the request, processes it, and accesses any needed data.

4. Data is retrieved from data sources to process the request.

5. The WebFOCUS Reporting Server processes the request of the user using the retrieved data.

6. The response is returned to the WebFOCUS Client on the web or application server.

7. The response is returned to the user in the appropriate format (for example, HTML, XML, PDF, Excel, and PNG).
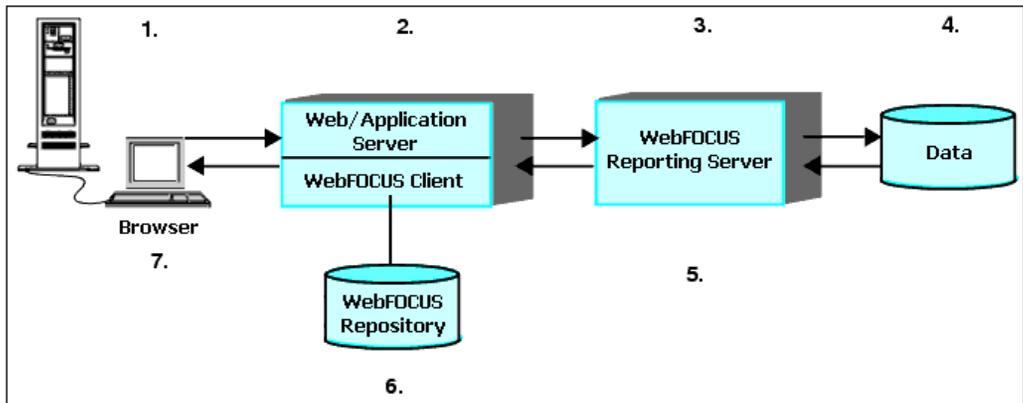
WebFOCUS Configuration

WebFOCUS employs a distributed architecture. This means that the WebFOCUS Client, the WebFOCUS Reporting Server, and your data can be located on any platform, anywhere in your network. You can easily connect an Apache web server running on UNIX to SQL Server data on Windows or Db2 data on z/OS.

The configuration requirements are:

❏ The WebFOCUS Client must reside with the web and application servers.

❏ The WebFOCUS repository can reside on the same system or a different system.

❏ An instance of the WebFOCUS Reporting Server must be installed on machines with your data or machines that have access to your data. For example, if you are accessing Oracle, the WebFOCUS Reporting Server can be on the Oracle Server machine or on any machine with Oracle Client.

Note: All WebFOCUS components must be of the same release to communicate properly.

The following configurations are examples of how WebFOCUS could be distributed:

❏ **Stand-alone Configuration.** In a stand-alone configuration, the application server, WebFOCUS Client, WebFOCUS Reporting Server, and source data are all on the same machine.
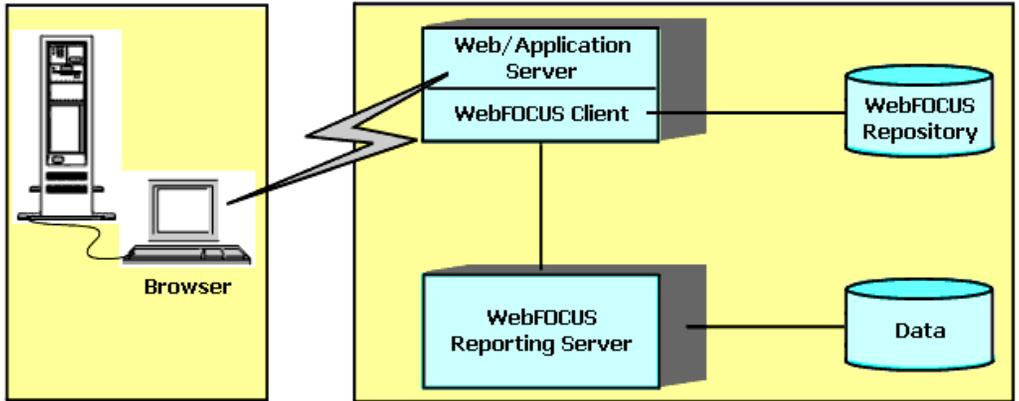
❏ **Distributed Configuration.** In a distributed configuration, the WebFOCUS Client is installed on your web server, but the WebFOCUS Reporting Server and source data are on a different machine.
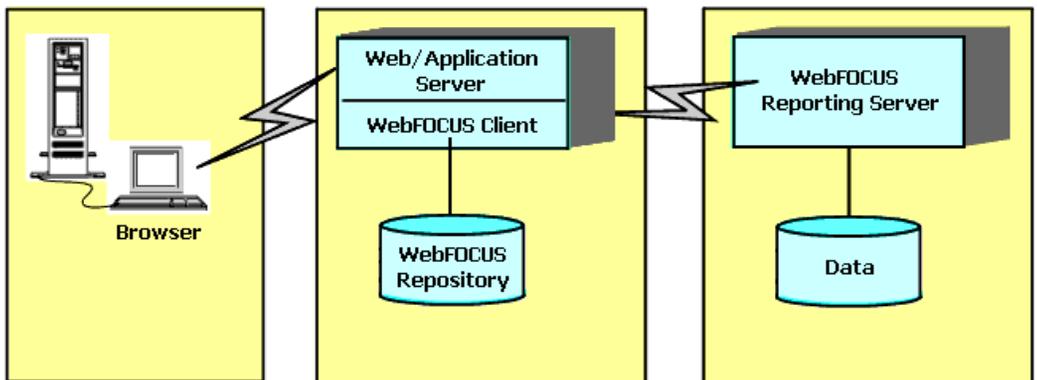
❏ **Multiple Data Source Configuration.** If you have source data on several different machines, WebFOCUS can integrate that data into one reporting environment. To allow this, instances of the WebFOCUS Reporting Server should be installed on machines with access to your source data. WebFOCUS technology provides the data access and format conversion functionality. For more information on integrating data from multiple machines and platforms, refer to the server documentation.
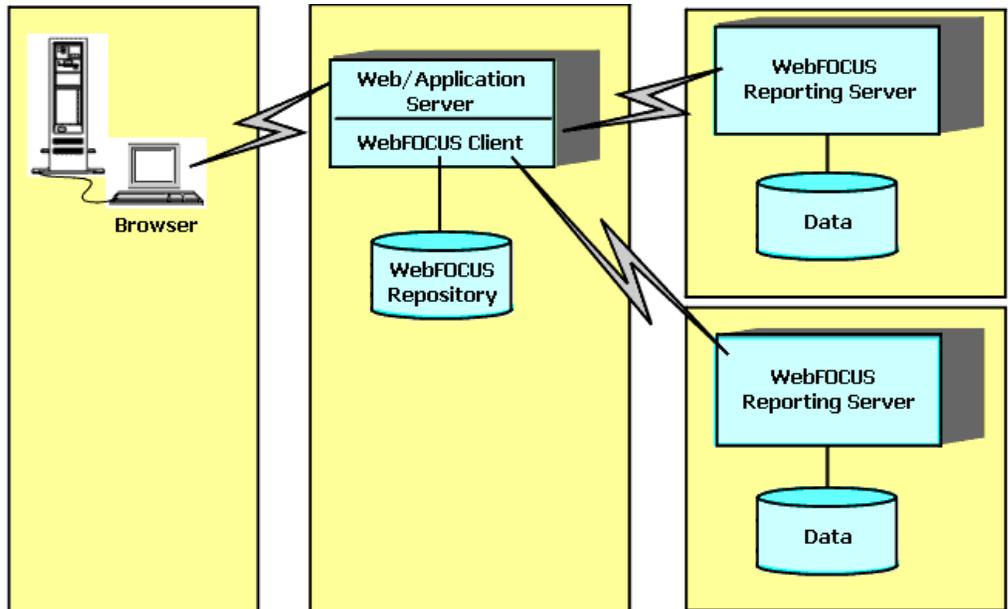
Note: In the previous example, the WebFOCUS Client connects to multiple WebFOCUS Reporting Servers. In other configurations, you can connect the WebFOCUS Client to a single WebFOCUS Reporting Server and then connect that WebFOCUS Reporting Server to other WebFOCUS Reporting Servers (hub-sub). For some data sources, you may need to connect WebFOCUS Reporting Servers to each other to perform joins.

❏ **Advanced Configuration Options.** WebFOCUS provides flexible options for more advanced configurations. You can run multiple instances of components and enable load balancing functionality. You can use the Cluster Manager to enable fail over and statistical analysis of the best WebFOCUS Reporting Server to use in a cluster. You can cluster your application servers, if you wish. You can use a web server only to forward requests to the application server through a firewall. For more information on advanced configuration options, see the *WebFOCUS Security and Administration* manual.

ReportCaster Installation Overview

This section briefly explains the different ReportCaster installation components, as well as how those components interact. If you are not using ReportCaster, proceed to *WebFOCUS and ReportCaster Installation and Configuration Steps* on page 24.

ReportCaster Components

ReportCaster enables you to schedule the delivery and automatic running of WebFOCUS reports and alerts, as well as independent files and URLs. ReportCaster distributes reports and files to individuals or lists through FTP, email, or a printer, and it can store reports in a Report Library.

There are three ReportCaster components:

❏ **ReportCaster Web Components.** ReportCaster web components are installed with the WebFOCUS Client as a J2EE web application. They include a user interface, an API, and connectivity components for managing delivery jobs and the Report Library.

❏ **ReportCaster Distribution Server.** The ReportCaster Distribution Server is a Java-based program that provides the back-end functionality to deliver reports and files. The Distribution Server can be installed with the WebFOCUS Client or installed on a separate machine.

   Note: The ReportCaster Distribution Server is also referred to as the ReportCaster Server or the Distribution Server.

❏ **ReportCaster Tables.** The ReportCaster tables are part of the WebFOCUS repository, which ReportCaster uses for schedule, distribution, Report Library, and log information. You can store the WebFOCUS repository in a Derby™, Oracle, SQL Server, Db2, or any other supported JDBC™-compliant database.

ReportCaster Processing

To schedule a delivery job, the ReportCaster Distribution Server is accessed through either a ReportCaster user interface or an external API. The ReportCaster API allows independent applications to schedule delivery jobs on the ReportCaster Distribution Server.

After jobs have been scheduled, the ReportCaster Distribution Server handles their execution and delivery. The following steps and figure describe how the Distribution Server processing identifies schedules to be run and distributes scheduled reports for scheduled WebFOCUS procedures (FEX).

1. The Distribution Server checks the repository every minute for jobs that are scheduled to run. You can change the default value of 1 minute within the ReportCaster configuration tool.

2. If jobs are found, the Distribution Server extracts the information from the WebFOCUS repository.

3. Each job is placed in a queue based on a priority setting found in the job description of the repository. Jobs in the queue are submitted to the WebFOCUS Reporting Server as resources become available.

4. The WebFOCUS Reporting Server receives each request, processes it, and accesses any needed data.

5. Data is retrieved from data sources to process the requests.

6. The WebFOCUS Reporting Server creates responses to the requests.

7. Responses are returned to the Distribution Server, which creates the addressing information necessary to send reports to their recipients. This includes any protocol-specific headers needed for email or FTP.

8. The Distribution Server sends files to the appropriate servers for delivery, such as a mail server for email or an FTP server for FTP. It can also place them in the Report Library.
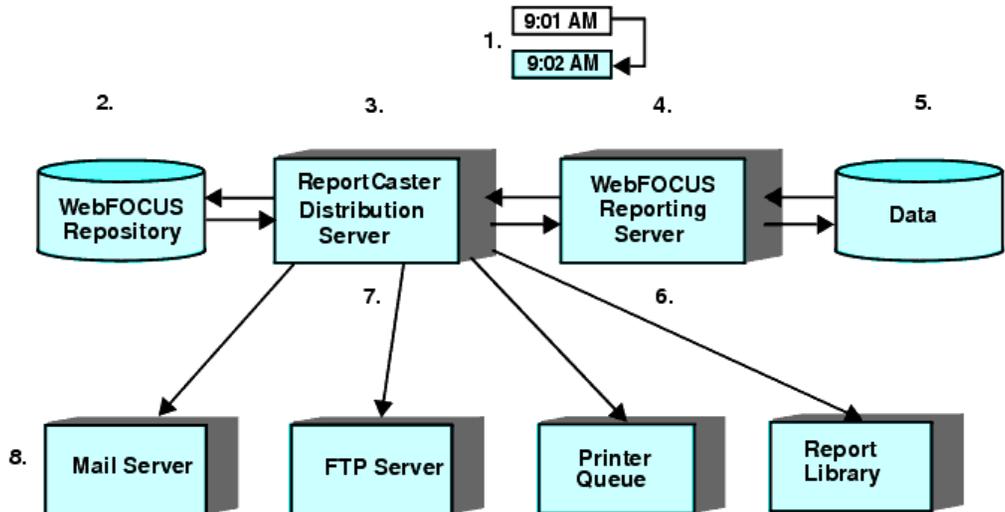
ReportCaster Configuration

ReportCaster components can run on the same machine or be distributed across different machines. The ReportCaster web components are installed with the WebFOCUS Client and must reside on the application server. The ReportCaster Distribution Server can be installed on the same machine as other WebFOCUS components or on its own machine. The WebFOCUS repository, which contains ReportCaster tables, can be on the same machine as the Distribution Server or it can be on a separate machine.

WebFOCUS and ReportCaster Installation and Configuration Steps

There are several steps to the installation and configuration process:

1. **WebFOCUS and ReportCaster Introduction.** Review this section to ensure you understand the different components involved in the installation.

2. **Pre-Installation Tasks.** Before installing WebFOCUS and ReportCaster, review all the requirements.

3. **WebFOCUS Reporting Server Installation.** Install the WebFOCUS Reporting Server on machines with access to your source data. For more information, see the *Server Installation* manual.

4. **WebFOCUS Client and ReportCaster Installation.** Install the WebFOCUS Client and ReportCaster, as explained in *Installing the WebFOCUS Client* on page 49.

5. **Web Server or Application Server Configuration.** Configure your web server or application server, as explained in *Configuring Web and Application Servers* on page 95.

   Important: For a split-tier environment, see *Configuring WebFOCUS in a Split Web-Tier and Application Server-Only Environment* on page 134.

6. **WebFOCUS Post-Installation Tasks.** Verify the WebFOCUS configuration and optionally change default settings, as explained in *WebFOCUS Client Post-Installation Tasks* on page 133.

7. **Post-Installation Data Access and Description.** Use the WebFOCUS Reporting Server Web Console and its Help system to configure adapters (data access) and create synonyms (data description) for your data sources. These steps are also documented in the *Server Administration* manual.

Review the *WebFOCUS Release Notes* document for information on known issues and documentation updates.

Application Server and Web Application Overview

This section provides some background information about third-party technologies used with WebFOCUS. It provides simplified overviews to assist those new to this technology.

Web Servers and Application Servers

The WebFOCUS Client and ReportCaster web components run as part of your application server.

❑ Web servers generally handle HTML, images (for example, PNG), and other traditional web content and processing. The terms web server and HTTP server are sometimes used interchangeably. Microsoft IIS and Apache HTTP Server are common web servers.

❏ Application servers (or servlet containers) generally handle Java and non-traditional processing. In WebFOCUS documentation, the term application server refers to an application server, servlet container, servlet engine, or J2EE engine. IBM® WebSphere®, Oracle® WebLogic®, Oracle Java® System Application Server, and Apache Tomcat™ are common application servers or servlet containers.

Some application servers have a robust web server (HTTP) component and do not require an external web server. For example, Apache Tomcat can be used both as a web server and application server. You use an application server for all WebFOCUS processing, but you can use a web server to forward requests through a firewall to the application server.

Web Applications

Some WebFOCUS and ReportCaster functionality is provided in J2EE web applications (webapps). A J2EE web application is a packaged collection of Java, text, graphic, and other files that function as an application or service. A web application is organized as a set of directories that can be placed into a Web Archive (.war) file. A WAR file is similar to a ZIP or TAR file in that it contains other files and preserves their directory structure.

A web application must follow certain conventions and always contains a WEB-INF directory. The WEB-INF directory must contain a web.xml file. The web.xml file is known as the deployment descriptor and contains configuration information. The WEB-INF directory usually has lib or class subdirectories containing its main Java code.

Running Web Applications

A web application runs inside an application server or servlet container. To run a web application, you deploy it to an application server, either as a WAR file or an EAR file. Theoretically, any web application could run in any application server on any platform, provided it is written to the Java Servlet API 3.0 specification. However, application servers vary and you should ensure your application server is supported with WebFOCUS. For more information on supported application servers, see *Web Server and Application Server Requirements*

Accessing Web Applications

After it is deployed, the web application context root is used to access the application in a web browser. The context root is the directory name used to access a web application and is normally specified when you deploy a web application. A context root is sometimes referred to as a context path or a context.

For example, the default WebFOCUS context root is /ibi_apps. Therefore, you can access the web application using:

```
http://hostname:port/ibi_apps/signin
```

where:

hostname:port

> Are the host name and HTTP port of the web server or application server. If you require SSL, use https instead of http.

A valid user name and password is required to access the WebFOCUS web application.

If your application server is separate from your web server, you must ensure that the web server can route requests to the application server. For example, when a request comes to the web server for ibi_apps, the web server must know to send the request to the application server. For some web and application server combinations, this occurs automatically, but others must be configured.

Security and User IDs for WebFOCUS and ReportCaster

This section provides a brief overview of default WebFOCUS security and authentication issues. These defaults can be changed using security exits and other features. In addition, your enterprise may require additional security and authentication for the web server, mail server, data sources, or other third-party components. For a complete discussion of WebFOCUS security, see the *WebFOCUS Security and Administration* manual.

By default, WebFOCUS uses two completely independent user ID types, although it is possible to synchronize them:

❏ **Managed Reporting and ReportCaster User IDs** (Front End)

> All requests processed by the WebFOCUS Client require a user ID. For information on WebFOCUS security authentication and authorization, see the *WebFOCUS Security and Administration* manual.

❏ **WebFOCUS Reporting Server User IDs** (Back End)

> The WebFOCUS Reporting Server has both user IDs to run reports and procedures (Execution IDs) and user IDs to administer and start the server (Administrator IDs). In addition, the WebFOCUS Reporting Server can run with different security providers.

Managed Reporting and ReportCaster IDs

A user has the same ID for Managed Reporting and ReportCaster. This ID determines which features, reports, and data are accessible through these products. By default, these IDs are created and maintained by a WebFOCUS administrator using the WebFOCUS Security Center.

When WebFOCUS is first installed, the default WebFOCUS administrator ID and password are both *admin*. After completely installing WebFOCUS and ReportCaster, an administrator should sign in as *admin*, update the password for the *admin* account, and create accounts for other users.

For information on integration with basic web server authentication or WebFOCUS Reporting Server security, see the *WebFOCUS Security and Administration* manual.

WebFOCUS Reporting Server Security Providers

Necessary IDs for the WebFOCUS Reporting Server depend on which security provider the server uses. Each time you start the WebFOCUS Reporting Server, you can specify a security provider that determines how authentication occurs when running reports and accessing the Web Console. The Web Console is a web-based tool for configuring and administering the WebFOCUS Reporting Server.

For more information, see the *Server Installation* manual.

You can run the server with:

❏ **Security ON**

❏ **Security OFF**

The following are the most common security providers, which are set through the Web Console:

❏ **OPSYS.** Authentication is performed by the operating system of the WebFOCUS Reporting Server machine. Users are authenticated when running reports and when accessing the Web Console to configure the server.

❏ **PTH.** Authentication is internal. User IDs and encrypted passwords are stored in a file created by the server:

```
drive:\ibi\profiles\admin.cfg
```

Users are authenticated only when accessing the Web Console to configure the server. Authentication is not required to run reports.

Security providers DBMS and LDAP are other options. For more information, see the *Server Administration* manual.

WebFOCUS Reporting Server User IDs

Regardless of security provider, there is a distinction between WebFOCUS Client execution IDs and server administrator IDs.

❑ **Execution IDs** are user IDs needed to run reports or applications. With security OFF or ON with provider PTH, no authentication is needed for these tasks. With security provider OPSYS, the authentication is performed by the operating system of the WebFOCUS Reporting Server machine. Since authentication is performed by the operating system, these IDs are not created, stored, or maintained through WebFOCUS.

With security provider OPSYS, when you run a report in a WebFOCUS application, the WebFOCUS Client must pass an execution ID to the server. End users can be prompted to provide this execution ID, or the WebFOCUS Client can automatically send a predetermined execution ID. For more information on configuring how the WebFOCUS Client provides execution IDs to the server, see *WebFOCUS Client Post-Installation Tasks* on page 133.

❑ **Server administrator IDs** are user IDs needed to start the server and access the Web Console. During the server installation, you are prompted for a PTH user ID and password to administer the server. After installation, you can change and add security providers and administrators through the Web Console. The server stores administrator IDs and encrypted passwords in:

drive:\ibi\profiles\admin.cfg

These server administrator user IDs and passwords are needed for the following:

❑ **Web Console Authentication.** With security providers OPSYS and PTH, only user IDs stored in the admin.cfg file can sign in to the Web Console as administrators. With security provider OPSYS, passwords are authenticated through the operating system. For security provider PTH, the server uses the passwords stored in the admin.cfg file.

❑ **Starting the Server.** With all security providers, only user IDs stored in the admin.cfg file have the authority to start the server. To start the server, a server administrator ID stored in admin.cfg must have the same name as an operating system user ID with full file permissions to the server directories.

To run with security provider OPSYS on Windows, both the user ID and password stored in admin.cfg must match the Windows user ID and password of the user starting the server. If your operating system password changes or you did not provide the correct password during installation, you must update the password stored by the server through the Web Console. The user ID and password stored by the server in admin.cfg must be kept in sync with the operating system (or domain).

Note: To access data sources needed for reports, the type of authentication is determined by how you configure the adapter for the data source, as explained in the *Server Administration* manual.
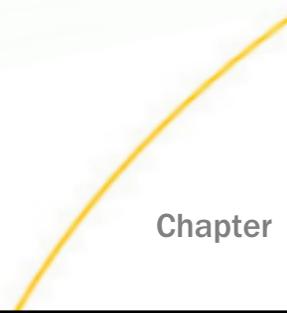
Chapter 2

WebFOCUS and ReportCaster Installation Requirements

This chapter lists requirements for installing and configuring WebFOCUS and ReportCaster on Windows systems. If you are only installing WebFOCUS, the ReportCaster requirements are not needed.

Review the *WebFOCUS Release Notes* document for information on known issues and documentation updates.

In this chapter:

❏ WebFOCUS and ReportCaster Installation Requirements

❏ WebFOCUS Repository Setup

❏ Database Collation Utilities

WebFOCUS and ReportCaster Installation Requirements

Release 8206 is a new feature release that supports new application development, includes incremental maintenance, and supports upgrade of content and applications.

Review the sections that follow to ensure that your machine or machines meet the necessary WebFOCUS and ReportCaster requirements.

JVM and J2SE Support Information

Release 8206 supports Java Virtual Machine (Java VM) Version 8 and Version 11 on the system that is hosting the application server where WebFOCUS and the ReportCaster Distribution Server are installed.

In addition, any supported portal server (for example, SAP Enterprise Portal Server, IBM WebSphere Portal Server, and so on) that is integrated with WebFOCUS Open Portal Services must be hosted on a system that is using Java VM Version 8 or Version 11.

Note: For information regarding WebFOCUS release support for the different Oracle JDK versions that WebFOCUS and ReportCaster web applications are installed, see *WebFOCUS Support Statement for Java 2 Platform, Standard Edition (J2SE)* at:

https://kb.informationbuilders.com/topic/webfocus-support-statement-java-platform-standard-edition-java-se

WebFOCUS and ReportCaster Machine Requirements

This table lists basic requirements for the machine or machines that run WebFOCUS and ReportCaster. Where necessary, these requirements are described in more detail later in this chapter. The minimum recommendations listed here are provided as a general guidance. Based on your business requirements, number of concurrent users, and resources used by your applications, you may choose to perform vertical, horizontal, or auto scaling to improve performance and ensure reliability. Contact Information Builders Customer Support for assistance with special configurations.

Item	Options or Requirements	Notes
Operating System	Microsoft® Windows® Server 2019, 2016, 2012, 2012 R2 64-bit (x64)	Microsoft Windows 10 can be used in development environments only.
Memory (RAM)	16 GB or higher.	Refer to any requirements for your application server.
Processor Speed	2 cores, 2.5 GHz or faster.	Refer to any requirements for your application server.
Disk Space	10 GB	Approximately, double this space should be available during the installation process. Additional space is needed for your application servers.

Item	Options or Requirements	Notes
Application Server/Servlet Container (WebFOCUS Client Machine)	Must meet both J2EE 6 web container and J2SE 7 specifications. This includes servlet API 3.0 specifications. Minimum heap size should be set to 2048. Maximum heap size can be set to 2048 or higher. The machine must have the available memory allocated through these settings.	In Release 8206, Apache Tomcat version 8.5.51 is provided and can be installed with WebFOCUS. For more information on Apache Tomcat™ and other supported application servers, see *Web Server and Application Server Requirements* on page 37. **Note:** In Release 8206, Tomcat 8 or higher is required.
Java (64-bit)	Java Version 8 or Java Version 11	OpenJDK 8 JRE Update 242 (8u242) is provided and automatically installs with Release 8206. **Note:** In Release 8206, Java Version 8 and Java Version 11 are supported.

Item	Options or Requirements	Notes
Web Server (WebFOCUS Client Machine)	Must support aliasing.	If you choose to use a web server, you have two ways to use it: ❑ For WebFOCUS processing of aliases. ❑ Only for forwarding requests through a firewall to an application server. Apache Tomcat is provided and can be used as both a web server and application server. Microsoft IIS and other web servers can be used along with Tomcat or other application servers, if you require. For more information, see *Web Server and Application Server Requirements* on page 37.
Microsoft .NET Framework	Version 2.0 or higher.	On Windows AMD 64-bit machines, the Microsoft .NET Framework is required for the Tomcat Connector plug-in to function correctly. It can be downloaded from the Microsoft website and must exist on the machine prior to the WebFOCUS installation. If the Tomcat Connector plug-in will not be configured, Microsoft .NET is not required.

Item	Options or Requirements	Notes
WebFOCUS Repository	TCP/IP access to a Database Server. For JDBC drivers.	A WebFOCUS repository is required to store reports, scheduling, and all WebFOCUS data. You can use any supported database. For more information, see *WebFOCUS Repository Setup* on page 39.
User ID	You must install as an administrator to the Windows machine.	

Note:

❏ The installation program includes the following third-party components: Tomcat, Java OpenJDK, and Derby. Later versions or releases of these third-party components, which often contain fixes for security vulnerabilities, may exist at installation time. It is your responsibility to check the vendor sites listed below for updates to newer versions or releases of these third-party components if you intend to use them with WebFOCUS. Install the new updates or versions prior to proceeding with the WebFOCUS installation. If these components are installed through the WebFOCUS installation program, it is your responsibility to update these components after the installation is completed.

  ❏ The latest version of Tomcat is available at *https://tomcat.apache.org*.

  ❏ The latest versions of Java OpenJDK are available from multiple sites, including:

   https://openjdk.java.net/

   https://adoptopenjdk.net/ (OpenJDK 8 HotSpot builds from this distribution are included in the Windows installation packages).

   https://github.com/ojdkbuild/ojdkbuild

   https://www.azul.com/downloads/zulu-community

  ❏ The latest version of Derby is available at *https://db.apache.org/derby*.

End User Machine Requirements

This section explains the desktop requirements for running WebFOCUS and ReportCaster.

Desktop Requirements

The following table lists requirements for machines from which end users or administrators can access WebFOCUS reports and applications. Not all requirements apply to all users and in many situations, only a web browser is required.

Item	Options or Requirements	Notes
Web Browser	Google Chrome™, Mozilla Firefox®, Microsoft Edge®, and Internet Explorer® 11 are supported.	For details on browser support, see the *WebFOCUS Release Guide*: *https://techsupport.informationbuilders.com/tech/wbf/ 8206_relguide.pdf*
Adobe Acrobat Reader	WebFOCUS 8.2 is certified with Adobe® Reader® X and Adobe Reader XI.	Acrobat is needed to view PDF reports generated by WebFOCUS.
Adobe Flash Player	WebFOCUS 8.2 is certified with Adobe® Flash® Player 10 and higher.	Required for the Active PDF report output format.

Communication Requirements

WebFOCUS uses TCP/IP for communications between components. During the installation, you choose which ports are used. Ensure that communications are possible on those ports.

Component	Number of Ports	Default Ports	Notes
WebFOCUS Reporting Server	4 consecutive ports	8120 (TCP) 8121 (HTTP) 8122 8123	When you install the WebFOCUS Reporting Server, you are prompted for the HTTP and TCP ports. The HTTP port is the first of three consecutive ports that the server uses. The TCP port is normally one less than the HTTP port.

Component	Number of Ports	Default Ports	Notes
WebFOCUS Client	Runs through web and application servers		For most features, the WebFOCUS Client does not require its own dedicated port and runs through the web and application servers. For Tomcat, ports 8080, 8009, and 8005 are used, by default.
ReportCaster Distribution Server	1 port	8200	When you install ReportCaster, you are prompted for this port. Additional ports may be needed when Workload Manager and/or Failover options are configured.

Web Server and Application Server Requirements

Apache Tomcat is provided and can be installed with WebFOCUS, so you do not have to install and configure your own web server or application server for WebFOCUS. There are two supported Tomcat options that the WebFOCUS installation can configure for you:

❏ Tomcat can be used as both an application server and a web server. This is referred to as a Tomcat stand-alone configuration. All processing is done by Tomcat.

❏ Microsoft IIS can be used as the web server and Tomcat can be used as the application server. This is referred to as a Tomcat with IIS configuration. Static content is served by IIS and dynamic Java content is served by Tomcat.

Note: It is also possible to have Tomcat perform all processing and use IIS on a separate machine only to forward requests through a firewall to Tomcat. For that environment, you use a Tomcat stand-alone configuration for WebFOCUS and then configure IIS manually on a separate machine.

Using Apache Tomcat is not required. You can use any application server, servlet container, or servlet engine that meets the specifications described in *JVM and J2SE Support Information* on page 31. Other application servers that are commonly used for WebFOCUS are IBM WebSphere or Oracle WebLogic. For additional application server support, contact Information Builders Customer Support. For background information about web and application servers, see *Application Server and Web Application Overview* on page 24.

In this document, the term application server refers to J2EE-compliant application servers, servlet containers, or servlet engines. Technically, Tomcat is a servlet container, but the term application server is used for simplicity.

Note: Depending on the level of usage, you may need to increase your application server Java memory options, especially if you use InfoAssist. This is done for you if the WebFOCUS 8.2 installation configures Tomcat. For other application servers, see *Java Memory Issues* on page 164.

WebFOCUS and ReportCaster Machine Java Requirements

Java Version 8 is the minimum version required for the WebFOCUS and ReportCaster application servers, as well as the Distribution Server. The WebFOCUS Client installation installs JRE 8 for you. We recommend installing the JDK on a WebFOCUS Reporting Server machine.

A JRE contains a subset of JDK features and both the JRE and JDK are needed. When you install the JDK, a JRE is also installed, by default. Accept default settings when you install the JDK.

Note:

❏ Java SDK and JDK are synonymous.

❏ Some application servers require a specific release of the JDK. If you are not using Tomcat, review the documentation for your application server to determine the JDK requirements.

ReportCaster Distribution Requirements

The following communication requirements are necessary to schedule and distribute reports:

❏ Email distribution requires TCP/IP communication to an SMTP-enabled mail server that supports base-64 encoding for MIME type attachments.

❏ FTP distribution requires TCP/IP communication to an FTP server.

❏ Printer distribution requires a networked printer accessible to the ReportCaster Distribution Server.

❏ Managed Reporting distribution requires TCP/IP communications to the WebFOCUS Client machine.

Note: The ReportCaster web components and the ReportCaster Distribution Server need a common time zone for proper operation. Therefore, if ReportCaster components run on different machines, all machines must be in the same time zone.

WebFOCUS Repository Setup

The ReportCaster repository structure has changed from previous 7.7.x releases and is now a part of the WebFOCUS repository. Therefore, you cannot use a repository from an early release without migrating its contents or creating a new repository. The ReportCaster tables in WebFOCUS 8.2 are now part of the WebFOCUS repository, and a database repository must store ReportCaster scheduling data. If you want to use the Report Library, the database can be any supported database with an available JDBC driver.

Depending on the platform used, the WebFOCUS Repository can be stored in a Derby, Microsoft SQL Server, Oracle, Db2, MySQL®, or PostgreSQL database. For more information, see *Installing the WebFOCUS Client* on page 49.

Repository Options

Review the information below and decide on the database server to use.

Note: Versions of supported databases and drivers certified are posted on:

https://kb.informationbuilders.com/topic/supported-rdbms-and-drivers

❏ **Db2.** To use a Db2 repository, a Db2 JDBC driver must be on the machine or machines that run the WebFOCUS Client and the ReportCaster Distribution Server.

> **Note:**
>
> ❏ The Db2 collation must be set to case sensitive for the WebFOCUS database. Case-insensitive collation is not supported.
>
> ❏ If you are using Db2 as the WebFOCUS Repository, the database needs to be created with a pagesize of 32K.
>
> For more information on using a Db2 repository, see *Additional WebFOCUS Repository Topics and Tasks* on page 189.

❏ **Derby.** If you choose, Derby can be installed with WebFOCUS. If you are also installing Tomcat, the required JDBC driver (derbyclient.jar) will be added to the Tomcat configuration file.

❑ **Microsoft SQL Server.** To use SQL Server, the appropriate SQL Server JDBC driver must be on the machine or machines that run the WebFOCUS Client and the ReportCaster Distribution Server. You can download and install the specific driver from the Microsoft website.

If you are unfamiliar with the JDBC driver and its requirements, information is provided in *Additional WebFOCUS Repository Topics and Tasks* on page 189.

Requirements:

❑ The repository database must be created by a DBA prior to installing and configuring WebFOCUS.

❑ The database collation must be set to case sensitive. Case-insensitive collation is not supported.

❑ At installation, upgrade, or configuration time, the account used by the WebFOCUS installation process to connect to the repository database must be granted db_datawriter, db_datareader, and db_ddladmin roles on the repository database and schema. Alternatively, the object creation and initial data load may be run as a separate utility by a DBA.

❑ For normal run-time activity, the account used by WebFOCUS to connect to the repository database must be granted db_datawriter and db_datareader roles on the repository database and schema.

❑ **MySQL.** To use a MySQL Server repository, the MySQL driver should be installed on the machine or machines that run the WebFOCUS Client and the ReportCaster Distribution Server. This is typically named mysql-connector-java-*nn*-bin.jar, where *nn* is the version number. *MySQL Repository Set Up* on page 207 contains information on installing and configuring the MySQL database server and this driver.

Note:

❑ The collation for MySQL must be set to case sensitive for the WebFOCUS database. Case-insensitive collation is not supported.

❑ The default character set and collation for MySQL is latin1 and latin1_swedish_ci, so non-binary string comparisons are case insensitive, by default.

❑ For use with WebFOCUS, the collation needs to be set as latin1_general_cs or latin1_swedish_cs, depending on the character set required.

❑ WebFOCUS Release 8.2 does not support the MySQL utf8 encoding character set.

❏ **Oracle™.** To use an Oracle repository, the Oracle JDBC™ Thin Client 9.0.1 driver must be on the machine or machines that run the WebFOCUS Client and the ReportCaster Distribution Server. This is typically named ojdbc7.jar depending on the Java release.

Note:

❏ The WebFOCUS repository requires character semantics. When creating a database for use with WebFOCUS, it needs to be done with CHAR semantics. This is applicable when using the following character sets:

    ❏ UTF8

    ❏ JA16SJISTILDE - Japanese

    ❏ ZHS16CGB231280 - Simplified Chinese

    ❏ ZHT16BIG5 - Traditional Chinese

    ❏ KO16KSC5601 - Korean

This is not needed when using the following character sets:

    ❏ Western European: WE8ISO8859P15 or WE8MSWIN1252

    ❏ Eastern European: WE8ISO8859P2 or EE8MSWIN1250

❏ Oracle database blocks (db_block_size) require 8K or higher.

❏ The maximum number of open cursors (open_cursors) must be set to 500 or higher when all tables are created and inserted.

❏ Tablespace requirements depend on customer usage.

❏ WebFOCUS requires case-sensitive collation. For Oracle, string comparisons are case sensitive, by default.

❏ Comparison and sort can be configured through the sort system parameters NLS_COMP and NLS_SORT.

❏ The RDBMS user account privileges used by WebFOCUS need to have the ability to create tables, modify tables, execute queries, and insert and delete records.

❏ **PostgreSQL.** Requires the JDBC 4.2 driver. In the WebFOCUS install.cfg file, the IBI_REPOS_DB_URL setting, which contains the JDBC connection path for the database, should be modified and the *currentSchema* parameter should be added to the URL.

For example:

```
IBI_REPOS_DB_URL=jdbc:postgresql://localhost:5432/myDatabase
?currentSchema=mySchema
```

where:

mySchema

Is a string identifying the schema name for the specified database user.

The schema will be used to resolve the fully qualified name of the table provided by the JDBC driver for the specific connection.

❏ **Other JDBC-Compliant Databases.** To use other JDBC-compliant databases, you need their JDBC drivers. You must also know the JDBC Path to connect to the database.

For more information about repositories, see *Additional WebFOCUS Repository Topics and Tasks* on page 189.

WebFOCUS Repository Pre-Installation Tasks

During the WebFOCUS installation, you are prompted for information that WebFOCUS and ReportCaster need to access your repository. After WebFOCUS receives this information, you can use the WebFOCUS utilities to create repository tables and perform other repository-related tasks.

Additional information on ReportCaster repositories is available in *Additional WebFOCUS Repository Topics and Tasks* on page 189.

Procedure: **How to Prepare for a WebFOCUS Repository**

For additional background information and sizing guidelines for Db2 on z/OS, see *Additional WebFOCUS Repository Topics and Tasks* on page 189.

Ask your DBA to perform the following tasks:

1. Install the JDBC driver for your WebFOCUS repository database on the WebFOCUS Client and ReportCaster Distribution Server machine or machines. You will be prompted for the path to the driver during the WebFOCUS and ReportCaster installation.

2. Create or assign a user ID and password that will own the repository. You will be prompted for this information during the WebFOCUS and ReportCaster installation.

   For SQL Server, the database must use SQL Server authentication rather than Windows authentication, and the user ID must have db_owner rights to the repository database.

3. If applicable, create a database within your database server for the WebFOCUS repository and ensure the user ID you created is the database owner. You will need the name of this database during the ReportCaster installation.

Note: Database collation must be case sensitive for WebFOCUS. The installation program and the database load utilities check for the database collation. For Microsoft SQL Server and MySQL, if a case-insensitive database is detected, the installation attempts to change the database collation to the best matched case sensitive (CS) collation. If the collation change fails, a message displays and the database creation does not take place. You can do either of the following:

❏ Continue with the installation and correct the database collation post-install. Then, run the WFReposUtilCMDLine.

❏ Exit the installation, correct the database collation, and rerun the installation.

Database Collation Utilities

Starting with WebFOCUS Release 8.2 Version 02, there are utilities that enable you to check and change the database collation to ensure it meets WebFOCUS requirements. Databases used as the WebFOCUS repository must be case sensitive.

These utilities are supported with MS SQL Server and MySQL databases and enable you to change the database collation from case insensitive to case sensitive.

The following is a list and description of the available utilities. The utilities are located in the *drive*:\ibi\WebFOCUS82\utilities\dbupdate\collation\ folder.

check_db_collation.bat

❏ Checks if the database collation is case sensitive.

❏ Prompts the user to use the database configured in install.cfg (select *Y*) or use a different database instance (select *N*).

❏ Prompts for the database repository ID and password.

❏ Prompts for the connection information, if the database configured with the installation is not being used.

Output example:

```
[2017-11-21 17:08:53,729] INFO stdout - Starting
collation_tool(check_cs_collation) process ...
[2017-11-21 17:08:54,278] OFF stdout - Database collation is NOT case
sensitive or does not meet WebFOCUS requirements
Or
[2017-12-13 12:41:11,117] INFO stdout - Starting
collation_tool_install(check_cs_collation) process ...
[2017-12-13 12:41:11,831] OFF  stdout - Database collation is case sensitive
[2017-12-13 12:41:11,831] INFO stdout - Done
Database IS case sensitive
```

check_install_db_collation.bat

❏ Checks if the database collation is case sensitive.

❏ Prompts for the database repository ID and password.

Output example:

```
[2017-11-21 09:54:23,996] INFO stdout - Starting
collation_tool_install(check_cs_collation) process ...
[2017-11-21 09:54:24,384] OFF stdout - Database collation is case
sensitivedb_help.bat
```

change_db_collation.bat

❏ Changes the database collation to the best matched CS collation.

❏ Prompts the user to use the database configured in install.cfg (select *Y*) or use a different database instance (select *N*).

❏ Prompts for the database repository ID and password.

❏ Prompts for the connection information, if the database configured with the installation is not being used.

Output example:

```
[2017-12-05 13:26:53,714] INFO stdout - Starting
collation_tool_install(collation_change) process ...
[2017-12-05 13:26:55,081] OFF stdout - Collation changed.
```

change_install_db_collation.bat

❏ Changes the database collation to the best matched CS collation.

❏ Prompts for the database repository ID and password.

Output example:

```
[2017-11-21 09:56:18,174] INFO stdout - Starting
collation_tool_install(collation_change) process ...
[2017-11-21 09:56:19,616] OFF stdout - Collation changed.
```

get_db_collation.bat

❏ Retrieves database collation.

❏ Prompts the user to use the database configured in install.cfg (select *Y*) or use a different database instance (select *N*).

❏ Prompts for the database repository ID and password.

❑ Prompts for the connection information, if the database configured with the installation is not being used.

Output example:

```
[2017-11-21 09:53:58,559] INFO stdout - Starting
collation_tool_install(get_current) process ...
[2017-11-21 09:53:59,403] OFF stdout - Database collation:
'Latin1_General_CS_AS'
```

get_install_db_collation.bat

❑ Retrieves database collation.

❑ Prompts for the database repository ID and password.

Output example:

```
[2017-12-05 13:24:41,121] INFO stdout - Starting
collation_tool_install(get_current) process ...
[2017-12-05 13:24:41,481] OFF stdout - Database collation:
'Japanese_90_CI_AS_WS_SC'
```

list_db_CS_collations.bat

❑ Lists all case sensitive collations supported by the database.

❑ Prompts the user to use the database configured in install.cfg (select *Y*) or use a different database instance (select *N*).

❑ Prompts for the database repository ID and password.

❑ Prompts for the connection information, if the database configured with the installation is not being used.

Output example:

```
…
"SQL_Latin1_General_CP1251_CS_AS","Latin1-General, case-sensitive, accent-
sensitive, kanatype-insensitive, width-insensitive for Unicode Data, SQL
Server Sort Order 105
on Code Page 1251 for non-Unicode Data","1251"
"SQL_Latin1_General_CP1253_CS_AS","Latin1-General, case-sensitive, accent-
sensitive, kanatype-insensitive, width-insensitive for Unicode Data, SQL
Server Sort Order 113
on Code Page 1253 for non-Unicode Data","1253"
"SQL_Latin1_General_CP1254_CS_AS","Turkish, case-sensitive, accent-
sensitive, kanatype-insensitive, width-insensitive for Unicode Data, SQL
Server Sort Order 129
on Code Page 1254 for non-Unicode Data","1254"
"SQL_Latin1_General_CP1255_CS_AS","Latin1-General, case-sensitive, accent-
sensitive, kanatype-insensitive, width-insensitive
…
```

list_install_db_CS_collations.bat

❏ Lists all case sensitive collations supported by the database.

❏ Prompts for the database repository ID and password.

Output example:

```
"Japanese_CS_AI","Japanese, case-sensitive, accent-insensitive, kanatype-
insensitive,
width-insensitive","932"
"Japanese_CS_AI_WS","Japanese, case-sensitive, accent-insensitive, kanatype-
insensitive,
width-sensitive","932"
"Japanese_CS_AI_KS","Japanese, case-sensitive, accent-insensitive, kanatype-
sensitive,
width-insensitive","932"
"Japanese_CS_AI_KS_WS","Japanese, case-sensitive, accent-insensitive,
kanatype-sensitive,
width-sensitive","932"
```

list_db_CS_compatible_collations.bat

❏ Retrieves the list of CS collations compatible with the specified collation.

❏ Prompts the user to use the database configured in install.cfg (select *Y*) or use a different database instance (select *N*).

❏ Prompts for the database repository ID and password.

❏ Prompts for the connection information, if the database configured with the installation is not being used.

Output example:

```
[2017-11-21 10:29:31,566] INFO stdout - Starting
collation_tool_install(list_cs_compatible_collations) process ...
COLLATION_NAME,COLLATION_DESCRIPTION,CHARACTER_SET/CODE_PAGE
-----------------------------------------------------------
"Japanese_90_CS_AS_KS_WS_SC","Japanese-90, case-sensitive, accent-sensitive,
kanatype-sensitive, width-sensitive, supplementary characters","932"
```

list_install_db_CS_compatible_collations.bat

❏ Retrieves the list of CS collations compatible with the specified collation.

❏ Prompts for the database repository ID and password.

Output example:

```
[2017-12-05 13:42:14,867] INFO stdout - Starting
collation_tool_install(list_cs_compatible_collations) process ...
COLLATION_NAME,COLLATION_DESCRIPTION,CHARACTER_SET/CODE_PAGE
-----------------------------------------------------------
"Japanese_90_CS_AS_KS_WS_SC","Japanese-90, case-sensitive, accent-sensitive,
kanatype-sensitive, width-sensitive, supplementary characters","932"
```

db_collation.bat

Called by all collation scripts.

Note: To run the utilities on Windows, open the Command Prompt with the Run as administrator option and enter the name of the script.

Scripts generate logs in the ..\WebFOCUS82\application_logs folder, using naming convention script name followed by date/time, for example, check_db_collation_2017-12-13_12-41-07.log.

When running the scripts against a new database (not using the database specified in install.cfg), the tools prompt for:

1. Database connection URL, for example:

   ```
   jdbc:sqlserver://host_machine_name:1433;DatabaseName=WebFOCUS8206
   ```

2. JDBC driver class, for example:

   ```
   com.microsoft.sqlserver.jdbc.SQLServerDriver
   ```

3. Database Repository User Name

4. Database Password

Possible Errors When Running Scripts

❑ Connection failure due to bad credentials:

```
…
[2017-11-21 09:55:16,837] OFF stdout - Tool
'collation_tool_install(check_cs_collation)' FAILED to connect to
database : ERROR_REPOSITORY_JDBC_AUTHENTICATION_FAILED .
…
Caused by: com.microsoft.sqlserver.jdbc.SQLServerException: Login failed
for user 'yyy'.
…
```

❑ Connection failure due to invalid JDBC driver info:

```
Caused by: com.ibi.dbtools.errors.DbException [FEATURE_NOT_IMPLEMENTED]:
No collation tool available for provider C:\ibi\jdbc\sqljdbc42.jar
```

❏ Connection failure due to bad credentials or connection info:

```
Caused by: com.ibi.dbmigration.errors.DbMigrationException
[GENERIC]: Cannot connect to database [sqlserver://
DP03423-1:1433;DatabaseName=ci_test]
using provided credentials and jdbc driver [C:\ibi\jdbc\sqljdbc42.jar]
```

Installing the WebFOCUS Client

This topic provides details about installing the WebFOCUS Client.

In this chapter:

Installing the WebFOCUS Client

The following procedures describe how to install the WebFOCUS Client.

Note: WebFOCUS requires a WebFOCUS Reporting Server, which provides data access, translation, computation, formatting, and other back-end processes. For information on installing the WebFOCUS Reporting Server, see the *Server Installation* manual.

Procedure: **How to Install Using the Typical Installation Option**

1. Download the WebFOCUS Client installation file, then double-click the file.

2. Choose the appropriate language from the drop-down list and click *OK*.

   The Welcome to WebFOCUS 8.2 window opens, recommending that you quit all programs before continuing with the installation.

3. Click *Next* to continue the installation.

   The License Agreement dialog box opens.

4. Select *I accept the terms of the License Agreement*, and click *Next* to continue the installation.

5. Select *I agree to Information Builders, Inc. collecting usage metrics to enable Information Builder*s to receive usage metrics on the volume and use of features and functions to be analyzed through an analytics provider.

   Note:

   ❑ Usage metrics are available to you upon making a request to Customer_Support@ibi.com.

   ❑ You may opt out at a later time, by turning the Usage Analytics setting off from the WebFOCUS Administration Console.

6. Click *Next*.

   The Choose Install Type dialog box opens. Select one of the following:

   ❑ To update your existing 8.2.*x* installation to a new service pack level, select *Update* and the existing instance you want to update.

      If you select *Update*, a dialog box opens with a prompt to provide WebFOCUS Administrator credentials. This is used to import new roles and new portal page templates into the WebFOCUS repository. For this to be successful, the database must be running. The installation validates the connection to the database and the credentials to ensure that they have permission to perform the import of the Change Management packages that load the roles and templates.

      The Pre-Installation Summary dialog box opens. Continue to step 12.

   ❑ To install all available features of WebFOCUS, select *Full Install*. If you select *Full Install*, the License Code dialog box opens. Continue to step 7.

7. Type the License Code and Site Code that were delivered with your WebFOCUS software and click *Next* to continue the installation.

   The Choose Install Set dialog box opens.

8. Select *Typical* and click *Next* to continue the installation.

   The Select Program Folder dialog box opens.

9. Accept the default program folder (WebFOCUS 82) or specify a different program folder name by adding a suffix to the Program Folder name. Then, click *Next*.

   Note: A message displays if the provided folder name already exists. The folder name must be unique in order to proceed.

   The Choose Destination Locations dialog box opens.

10. Perform the following steps:

    a. Specify a path for the WebFOCUS application folder. The default is C:\ibi.

        Note: You can specify any path on the local machine or use a Universal Naming Convention (UNC) path.

    b. Choose the appropriate disk from the Disk Space Information drop-down list.

    c. Click *Next*.

    The Select Components to install dialog box opens, as shown in the following image.

Note: If you specified a UNC path for the WebFOCUS application folder, then the ReportCaster Distribution Server must be installed separately. In the Select Components to install dialog box, the ReportCaster Distribution Server check box will be disabled. In the Advanced Configuration dialog box, you must provide the ReportCaster Distribution Server host and port values that correspond to the system where you are going to install the ReportCaster Distribution Server.

11. Perform the following steps:

    a. In the WebFOCUS component area, type the host name or IP address for your mail server in the Mail Server Host Name field.

    b. Type a path where WebFOCUS applications will be saved in the Choose Applications Path field or accept the default location (C:\ibi\apps).

    Options to install Tomcat and Derby are enabled if these components are not preinstalled on your system. Allow these options to be installed and configured with WebFOCUS if you want to use default configuration options.

    ❏ If you clear the options to install and configure Tomcat, an application server needs to be configured post-installation.

    ❏ If you clear the option to install Derby, or Derby is preinstalled, continue to the next substep.

    c. Select a database (for example, Apache Derby or Microsoft SQL Server) from the Configure pre-existing Database drop-down list.

    Note:

    ❏ If you want to use an existing WebFOCUS repository that already has tables defined, clear the *Create WebFOCUS Repository* option. After the installation is completed, you must drop and recreate the existing tables in the repository if you plan on working with a new WebFOCUS repository. Alternatively, you can run the WFReposUtilCMDLine.bat file with the CREATE_INSERT mode to update your database and create the required tables and columns.

    ❏ If you select the *Create WebFOCUS Repository* option, you will be prompted for WebFOCUS administrator credentials. The credentials that you enter will become the WebFOCUS administrator credentials. During the database creation, the user name and password supports ASCII characters from 32 to 126 and cannot include the following characters: caret (^), ampersand (&), percent (%), double quotation marks ("). Refer to the ASCII character table to determine the characters to use for the WebFOCUS administrator credentials. For more information, see the following website:

    https://msdn.microsoft.com/en-us/library/60ecse8t(v=vs.71).aspx

The password for the user name must be between four and 20 characters. Leading blanks and trailing blanks will be removed. You will not be prompted for credentials if the *Create WebFOCUS Repository* option is not selected.

❏ If you select the *Create WebFOCUS Repository* option, the installation checks the database to see if it contains existing tables. If it contains tables, the Create WebFOCUS Repository option will not be performed and a message displays. In this case, you can:

  ❏ Provide information for a new empty database.

  ❏ Post-installation, create the tables using the WFReposUtilCMDLine WebFOCUS utility. For more information, see *WebFOCUS Repository Table Creation* on page 144.

  ❏ In the case that you are using an 8.1.*x* or 8.0.*x* database, follow the post-installation steps required to update the database to a Release 8206 level. For more information, see *Upgrading Content From Release 8.1.x or 8.0.x to Release 8206* on page 75.

  ❏ In the case you are performing a new installation and pointing to a database created in an earlier 8.2.*x* release, follow the post-installation steps required to update the database to a Release 8206 level. For more information, see *Performing a New Release 8206 Installation Using an Existing 8.2.x WebFOCUS Repository* on page 87.

❏ If you want to use a web or application server other than Apache Tomcat, then uncheck the Configure Apache Tomcat option. The Configure WebFOCUS Client area will appear and you must enter the port number that is currently used by your web server in the corresponding field.

d. Click *Next* to accept the remaining default installation components and configuration settings.

The Database Configuration dialog box opens, as shown in the following image. In this example, Apache Derby is being configured, since it was the pre-existing database that was selected.

Note:

❏ The Database Configuration for Apache Derby dialog box opens if you have an existing version of Derby installed on your system. In this case, the Derby 10.9.1.0 check box will be disabled in the Select Components to install dialog box. The Database Configuration for Apache Derby dialog box also opens if you uncheck the Derby 10.9.1.0 check box and select the option to use an existing Derby installation.

If the installer detects an existing Derby installation on the machine, the JDBC Path will be populated automatically. Otherwise, the JDBC Path text box will be blank, and the user will have to enter the full path to the jar files.

❑ For security reasons, the DB Server Node is set to 0.0.0.0 (listens to localhost). If you are running on multiple environments and want to access this Derby from another location, change 0.0.0.0 to the machine name.

In addition, you need to edit the *drive*:\ibi\Derby\derby.properties file and comment the derby.drda.host=0.0.0.0 line by inserting a number symbol (#) in the first column.

12. Click *Next* to continue the installation.

The Pre-Installation Summary window opens.

13. Verify that all of the information is correct and click *Install* to continue with the configuration and installation.

As WebFOCUS is being configured on your system, the Please Wait window is displayed.

After WebFOCUS is configured, the Installing WebFOCUS 8.2 dialog box opens. As WebFOCUS is being installed, the Installing WebFOCUS 8.2 dialog box informs you about the installation tasks that are being performed.

When the installation is complete, the Run Verification Utility dialog box appears.

14. Select the verification utilities you would like to run and click *Next*. The available utilities are:

❑ The WebFOCUS Console Verification Utility

❑ WebFOCUS Online Documentation

The Install Complete window opens, listing the installation directory.

15. If you performed an upgrade installation, ensure that the application server cache is cleared prior to using the new installation.

In addition, use the Role Update Utility available in the WebFOCUS Administration Console to update repository roles and privileges. The utility enables you to identify differences between roles and privileges available in your existing repository and the new roles and privileges provided with the new installation.

It is recommended that you replace your repository with new roles and privileges to use new functionality and features.

The following is an example using a WebFOCUS Release 8.2 Version 01M repository and upgrading to Release 8206. The *Run Procedures with Insight* and *Designer* privileges are required to use new functionality, run Insight content, and access WebFOCUS Designer.

1. Sign in to WebFOCUS as an administrator.

2. Click the User menu in the upper-right corner, point to *Administration*, and then click *Administration Console*.

3. In the Configuration panel, click *Role Update Utility*.

   At the top of the table, you will see a message that identifies new roles and high-level differences between your existing roles.

4. Examine the differences between the Repository and Packaged roles and privileges and apply the new roles and privileges to enable new functionality and features.

Procedure: **How to Install Using the Custom Installation Option**

1. Download the WebFOCUS Client installation file, then double-click the file.

2. Choose the appropriate language from the drop-down list and click *OK*.

   The Welcome to WebFOCUS 8.2 window opens, recommending that you quit all programs before continuing with the installation.

3. Click *Next* to continue the installation.

   The License Agreement dialog box opens.

4. Select *I accept the terms of the License Agreement*, and click *Next* to continue the installation.

5. Select *I agree to Information Builders, Inc. collecting usage metrics to enable Information Builders* to receive usage metrics on the volume and use of features and functions to be analyzed through an analytics provider.

   Note:

   ❏ Usage metrics are available to you upon making a request to Customer_Support@ibi.com.

   ❏ You may opt out at a later time, by turning the Usage Analytics setting off from the WebFOCUS Administration Console.

6. Click *Next*.

   The Choose Install Type dialog box opens. Select one of the following:

   ❏ To update your existing 8.2.*x* installation to a new service pack level, select *Update* and the existing instance you want to update.

      If you select *Update*, a dialog box opens with a prompt to provide WebFOCUS Administrator credentials. This is used to import new roles and new portal page templates into the WebFOCUS repository. For this to be successful, connection to the database must be available (database must be running). The installation validates the connection to the database and the credentials to ensure that they have permission to perform the import of the Change Management packages.

      The Pre-Installation Summary dialog box opens. Continue to step 14.

   ❏ To install all available features of WebFOCUS, select *Full Install*. If you select *Full Install*, the Software Registration dialog box opens. Continue to step 7.

7. Type the License Code and Site Code that were delivered with your WebFOCUS software and click *Next* to continue the installation.

   The Choose Install Set dialog box opens.

8. Select *Custom* and click *Next* to continue the installation.

   The Select Program Folder dialog box opens.

9. Accept the default program folder (WebFOCUS 82) or specify a different program folder name by adding a suffix to the Program Group name. Then, click *Next*.

   Note: A message displays if the provided folder name already exists. The folder name must be unique in order to proceed.

   The Choose Destination Locations dialog box opens.

10. Perform the following steps:

    a.   Specify a path for the WebFOCUS application folder. The default is C:\ibi.

        Note: You can specify any path on the local machine or use a Universal Naming Convention (UNC) path.

    b.   Choose the appropriate disk from the Disk Space Information drop-down list.

    c.   Click *Next*.

The Select Components to install dialog box opens, as shown in the following image.

Note: If you specified a UNC path for the WebFOCUS application folder, then the ReportCaster Distribution Server must be installed separately. In the Select Components to install dialog box, the ReportCaster Distribution Server check box will be disabled. In the Advanced Configuration dialog box, you must provide the ReportCaster Distribution Server host and port values that correspond to the system where you are going to install the ReportCaster Distribution Server.

11. Perform the following steps:

    a. In the WebFOCUS component area, type the host name or IP address for your mail server in the Mail Server Host Name field.

    b. Type a path where WebFOCUS applications will be saved in the Choose Applications Path field or accept the default location (C:\ibi\apps).

        Options to install Tomcat and Derby are enabled if these components are not preinstalled on your system. Allow these options to be installed and configured with WebFOCUS if you want to use default configuration options.

        ❑ If you clear the options to install and configure Tomcat, an application server needs to be configured post-installation.

        ❑ If you clear the option to install Derby, or Derby is preinstalled, continue to the next substep.

    c. Select a database (for example, Apache Derby or Microsoft SQL Server) from the Configure pre-existing Database drop-down list.

        Note:

        ❑ If you want to use an existing WebFOCUS repository that already has tables defined, clear the *Create WebFOCUS Repository* option. After the installation is completed, you must drop and recreate the existing tables in the repository if you plan on working with a new WebFOCUS repository. Alternatively, you can run the WFReposUtilCMDLine.bat file with the CREATE_INSERT mode to update your database and create the required tables and columns.

        ❑ If you select the *Create WebFOCUS Repository* option, you will be prompted for WebFOCUS administrator credentials. The credentials that you enter will become the WebFOCUS administrator credentials. During the database creation, the user name and password supports ASCII characters from 32 to 126 and cannot include the following characters: caret (^), ampersand (&), percent (%), double quotation marks ("). Refer to the ASCII character table to determine the characters to use for the WebFOCUS administrator credentials. For more information, see the following website:

        https://msdn.microsoft.com/en-us/library/60ecse8t(v=vs.71).aspx

The password for the user name must be between four and 20 characters. Leading blanks and trailing blanks will be removed. You will not be prompted for credentials if the *Create WebFOCUS Repository* option is not selected.

❑ If you select the *Create WebFOCUS Repository* option, the installation checks the database to see if it contains existing tables. If it contains tables, the Create WebFOCUS Repository option will not be performed and a message displays. In this case, you can:

❑ Provide information for a new empty database.

❑ Post-installation, create the tables using the WFReposUtilCMDLine WebFOCUS utility. For more information, see *WebFOCUS Repository Table Creation* on page 144.

❑ In the case that you are using an 8.1.*x* or 8.0.*x* database, follow the post-installation steps required to update the database to a Release 8206 level. For more information, see *Upgrading Content From Release 8.1.x or 8.0.x to Release 8206* on page 75.

❑ In the case you are performing a new installation and pointing to a database created in an earlier 8.2.*x* release, follow the post-installation steps required to update the database to a Release 8206 level. For more information, see *Performing a New Release 8206 Installation Using an Existing 8.2.x WebFOCUS Repository* on page 87.

❑ If you want to use a web or application server other than Apache Tomcat, then uncheck the Configure Apache Tomcat option. The Configure WebFOCUS Client area will appear and you must enter the port number that is currently used by your web server in the corresponding field.

d. Click *Next* to accept the remaining default installation components and configuration settings.

The Database Configuration dialog box opens, as shown in the following image. In this example, Apache Derby is being configured, since it was the pre-existing database that was selected.

Note:

❑ The Database Configuration for Apache Derby dialog box opens if you have an existing version of Derby installed on your system. In this case, the Derby 10.9.1.0 check box will be disabled in the Select Components to install dialog box. The Database Configuration for Apache Derby dialog box also opens if you uncheck the Derby 10.9.1.0 check box and select the option to use an existing Derby installation.

If the installer detects an existing Derby installation on the machine, the JDBC Path will be populated automatically. Otherwise, the JDBC Path text box will be blank, and the user will have to enter the full path to the jar files.

❏ For security reasons, the DB Server Node is set to 0.0.0.0. If you are running on multiple environments and want to access this Derby from another location, change 0.0.0.0 to the machine name.

In addition, you need to edit the *drive*:\ibi\Derby\derby.properties file and comment the derby.drda.host=0.0.0.0 line by inserting a number symbol (#) in the first column.

12. Click *Next*.

The Advanced Configuration dialog box opens, as shown in the following image.
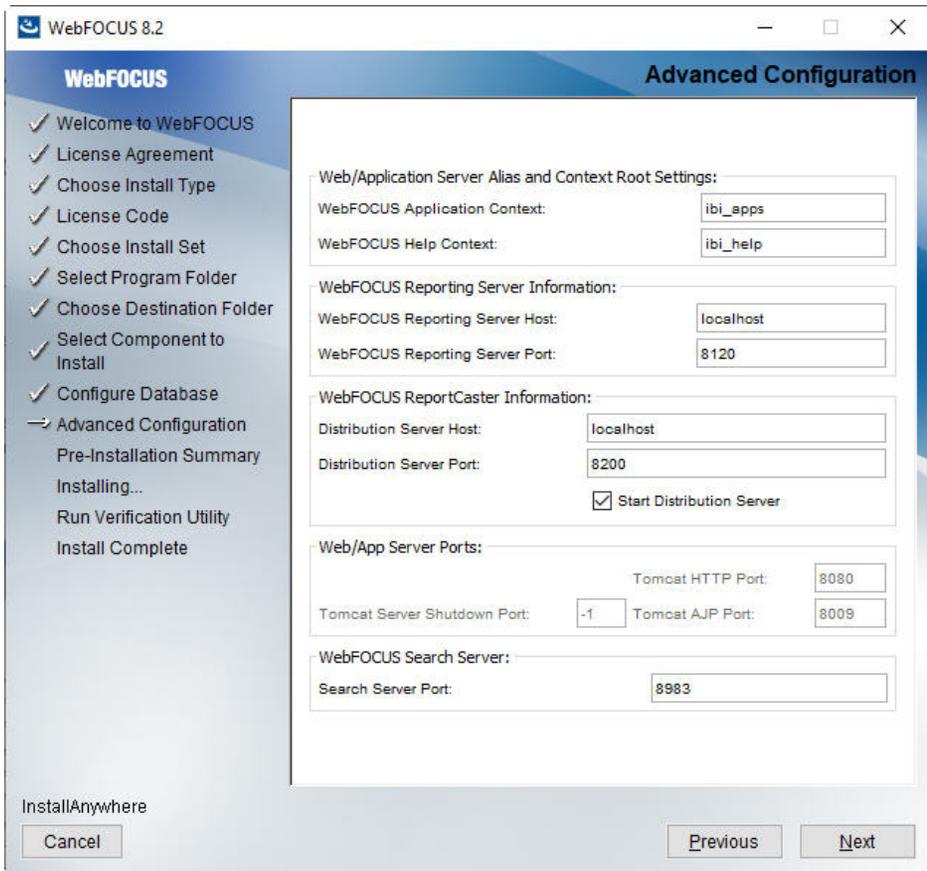
13. Perform the following steps:

a. In the WebFOCUS Application Context field, type a context root or accept the default (ibi_apps).

b. In the WebFOCUS Help Context field, type a help context root or accept the default (ibi_help).

Information Builders

    c. In the WebFOCUS Reporting Server Host field, type a host name or accept the default. The default WebFOCUS Reporting Server host is the name of the machine where WebFOCUS is being installed.

    d. In the WebFOCUS Reporting Server Port field, type a server port or accept the default (8120).

    e. In the Distribution Server Host field, type a host name. The default Distribution Server host is the name of the machine where WebFOCUS is being installed.

    f. In the Distribution Server Port field, type a server port or accept the default (8200).

    g. In the Web/App Server Ports area, specify the port values that are being used by your application server.

    h. In the WebFOCUS Search Server area, the installation checks if default port 8983 is open and available to use. If the port is in use (busy), the installation program checks for another port and allows you to change and specify a custom port.

14. Click *Next* to continue the installation.

    The Pre-Installation Summary window opens.

15. Verify that all of the information is correct and click *Install* to continue with the configuration and installation.

    As WebFOCUS is being configured on your system, the Please Wait window is displayed.

    After WebFOCUS is configured, the Installing WebFOCUS 8.2 dialog box opens. As WebFOCUS is being installed, the Installing WebFOCUS 8.2 dialog box informs you about the installation tasks that are being performed.

    When the installation is complete, the Run Verification Utility dialog box appears.

16. Select the verification utilities you would like to run and click *Next*. The available utilities are:

❑ The WebFOCUS Console Verification Utility

❑ WebFOCUS Online Documentation

    The Install Complete window opens, listing the installation directory.

17. If you performed an upgrade installation, ensure that the application server cache is cleared prior to using the new installation.

    In addition, use the Role Update Utility available in the WebFOCUS Administration Console to update repository roles and privileges. The utility enables you to identify differences between roles and privileges available in your existing repository and the new roles and privileges provided with the new installation.

    It is recommended that you replace your repository with new roles and privileges to use new functionality and features.

The following is an example using a WebFOCUS Release 8.2 Version 01M repository and upgrading to Release 8206. The *Run Procedures with Insight* and *Designer* privileges are required to use new functionality, run Insight content, and access WebFOCUS Designer.

1. Sign in to WebFOCUS as an administrator.

2. Click the User menu, point to *Administration*, and then click *Administration Console*.

3. In the Configuration panel, click *Role Update Utility*.

   At the top of the table, you will see a message that identifies new roles and high-level differences between your existing roles.

4. Examine the differences between the Repository and Packaged roles and privileges and apply the new roles and privileges to enable new functionality and features.

Procedure: **How to Install WebFOCUS Client Using the Silent Install**

1. To generate the silent install properties file from the command prompt, navigate to the directory where the installWebFOCUS82*nn*.exe file resides.

2. Enter the following command:

   ```
   installWebFOCUS82nn.exe -r drive:\fullpath\name.properties
   ```

   Note:

   ❑ Replace *nn* with the specific WebFOCUS 82 release, for example, installWebFOCUS82*06*.exe.

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❑ Always generate the properties file before performing the silent install to ensure that the properties are correct.

❑ The properties file has the extension *.properties.

❑ You need to specify the full path to where the properties file will be created.

3. To install in silent mode, navigate to the directory where the installWebFOCUS82*nn*.exe file resides and enter the following command:

```
installWebFOCUS82nn.exe -i silent -f drive:\fullpath\name.properties
```

Troubleshooting the Installation

❑ If you experience issues during the installation, due to Java memory resources:

1. Start the Command Window with the option *Run as administrator* and issue the following command:

```
set _JAVA_OPTIONS=-Xmx1024m
```

or

```
set _JAVA_OPTIONS=-Xmx2048m
```

Note: The set _JAVA_OPTIONS=-Xmx2048m command is recommended.

The memory allocated through this command must be available on your system.

This is a temporary variable applicable for the duration of the Command Window session.

2. From the same Command Window, navigate to the location of the WebFOCUS installation program and run the installation program.

❑ The following are the main trace files for the installation. The names are generated with a date and random number, where *userprofile* is the user ID logged on during the installation.

```
C:\Users\userprofile\WebFOCUS82_inst_date_######.log
```

```
C:\Users\userprofile\WebFOCUS82_Install_inst_date_######.log
```

If the server cannot find the Java VM, the JSCOM Listener will not be able to start and the messages will be written to the server log file (edaprint.log), stating that the Java VM cannot be found. To resolve this issue, specify the location of the Java VM in JDK_HOME or IBI_JNIPATH. For more information, see the *Server Installation* manual.

Upgrading From an Earlier 8.2.x Release to Release 8206

Due to changes in the WebFOCUS Release 8.2 repository database structure, a database update is required to enable you to use an existing Release 8.2.*x* database with Release 8206.

Upgrade Installation Steps

The database update is performed during the upgrade installation. The installation checks the database version used for the WebFOCUS repository to determine if a database update is required. Database updates are performed when upgrading from Release 8.2.x.

❑ If a database update is required, the *db_inplace_update.bat* utility runs, using the credentials configured with the installation.

If the database update was successful, the following information is entered in the installation log:

```
Update process SUCCEEDED
```

Note: Credentials used for the database update utility need privileges to allow table changes.

❑ If the database update fails, the WebFOCUS web application does not start and you are not able to connect to WebFOCUS. This can occur if the connection to the database is not available. In this case, you need to review the installation log and the WebFOCUS event log for more information, and manually run the *db_inplace_update* utility post-installation.

The following are examples of failures captured in the installation log file:

```
Version checker process FAILED to connect to database
ERROR:connecting to DB, DBCHECK:connect_error-not going to execute:
C:\ibi\WebFOCUS82\utilities\dbupdate\db_inplace_update.bat
```

The following is an example of a failure captured in the WebFOCUS event.log file:

```
ERROR_DB_NOT_UP_TO_DATE Database is not up to date. Please run the
update utility first.
```

For more information on how to manually run the *db_inplace_update* utility post-installation, see *How to Manually Run the Database Utility Post-Installation* on page 68.

❑ The update_repos utility runs automatically. This utility imports the following Change Management packages:

   ❑ managers_group_and_rules.zip

❏ bip_page_templates_V*nn*.zip, where *nn* is the version of the package.

❏ roles.zip

❏ pgx_page_templates_V*nn*.zip, where *nn* is the version of the package.

❏ themes_V*nn*.zip, where *nn* is the version of the package.

You are prompted for WebFOCUS Administrator credentials during the installation. If communication to the database is not available, or the provided credentials do not have permissions to import Change Management packages, you must manually run the update_repos utility post-installation. See step 6 in *How to Manually Run the Database Utility Post-Installation* on page 68.

Note: This step is required for all Release 8.2.x upgrades to Release 8206.

❏ Use the Role Update Utility available in the WebFOCUS Administration Console to update repository roles and privileges. The utility enables you to identify differences between roles and privileges available in your existing repository and the new roles and privileges provided with the new installation.

It is recommended that you replace your repository with new roles and privileges to use new functionality and features.

The following is an example using a WebFOCUS Release 8.2 Version 01M repository and upgrading to Release 8206. The *Run Procedures with Insight* and *Designer* privileges are required to use new functionality, run Insight content, and access WebFOCUS Designer.

1. Sign in to WebFOCUS as an administrator.

2. Click the User menu, point to *Administration*, and then click *Administration Console*.

3. In the Configuration panel, click *Role Update Utility*.

   At the top of the table, you will see a message that identifies new roles and high-level differences between your existing roles.

4. Examine the differences between the Repository and Packaged roles and privileges and apply the new roles and privileges to enable new functionality and features.

Procedure: How to Manually Run the Database Utility Post-Installation

1. Ensure that the database is running.

2. Run the *db_inplace_update.bat* utility.

   The *db_inplace_update* database utility is stored in the *drive*:\ibi\WebFOCUS82\utilities\dbupdate folder.

   Note: The application server should not be running when running the database update utility.

   A Command window opens and is used to run the database update utility.

3. Type the database repository user name and password, when prompted.

   Note: Credentials used for the database update utility need privileges to allow table changes.

4. After a successful database update, clear the application server cache and then start the application server.

5. Confirm that the connection to WebFOCUS is functional and that the content is correct.

6. Run the following utility to load new roles and BI Portal page templates into the WebFOCUS repository:

   drive:\ibi\WebFOCUS82\utilities\WFReposUtil\update_repos.bat

   You will get prompted to provide WebFOCUS administrator credentials.

   This utility imports the following Change Management packages:

   ❑ *drive*:\ibi\WebFOCUS82\features\bip\managers_group_and_rules.zip

   ❑ *drive*:\ibi\WebFOCUS82\features\bip\bip_page_templates_V*nn*.zip, where *nn* is the version of the package.

   ❑ *drive*:\ibi\WebFOCUS82\features\bip\pgx_page_templates_V*nn*.zip, where *nn* is the version of the package.

   ❑ *drive*:\ibi\WebFOCUS82\features\bip\themes_V*nn*.zip, where *nn* is the version of the package.

   ❑ *drive*:\ibi\WebFOCUS82\features\roles\roles.zip.

   Logs are created in the *drive*:\ibi\WebFOCUS82\application_logs folder under the following names:

   ❑ cm_import_bip_page_templates_*<date_time>*.log

   ❑ cm_import_managers_group_and_rules_*<date_time>*.log

   ❑ cm_import_themes_V*nn*_*<date_time>*.log

   ❑ cm_import_pgx_page_templates_V*nn*_*<date_time>*.log

   ❑ cm_import_roles_*<date_time>*.log

   ❑ cm_import_managers_group_and_rules_*<date_time>*.log

7. Use the Role Update Utility available in the WebFOCUS Administration Console to update repository roles and privileges. The utility enables you to identify differences between roles and privileges available in your existing repository and the new roles and privileges provided with the new installation.

It is recommended that you replace your repository with new roles and privileges to use new functionality and features.

The following is an example using a WebFOCUS Release 8.2 Version 01M repository and upgrading to Release 8206. The *Run Procedures with Insight* and *Designer* privileges are required to use new functionality, run Insight content, and access WebFOCUS Designer.

a. Sign in to WebFOCUS as an administrator.

b. Click the User menu, point to *Administration*, and then click *Administration Console*.

c. In the Configuration panel, click *Role Update Utility*.

At the top of the table, you will see a message that identifies new roles and high-level differences between your existing roles.

d. Examine the differences between the Repository and Packaged roles and privileges and apply the new roles and privileges to enable new functionality and features.

Reference: **Troubleshooting the Upgrade Installation**

❏ If the database update fails, you must ensure that the database is running and that the db owner is allowed to make changes to the database tables.

❏ Run the *drive*:\ibi\WebFOCUS82\utilities\dbupdate\db_check_version.bat utility to verify if the database was updated.

❑ In case the application server cannot load the WebFOCUS web application, review the application server logs and WebFOCUS logs, such as the event.log for errors.

    ❑ WebFOCUS system event logs are created in the *drive*:\ibi\WebFOCUS82\logs folder.

    ❑ Log names for the dbupdate and dbcheck utilities are named db_inplace_update_*<timestamp>*.log and db_check_version__*<timestamp>*.log and are created in the *drive*:\ibi\WebFOCUS82\application_logs folder.

❑ If the database update was successful, and the application server fails to start and db_check_version indicates that the database is not up to date, ensure that the application server cache is cleared and attempt to restart the application server and connect to WebFOCUS.

❑ **ReportCaster configuration post-installation:**

    ❑ Upgrades remove and recreate the WebFOCUS ReportCaster service.

    ❑ If the WebFOCUS ReportCaster service was configured using a domain user account as a service logon account, the service needs to be reconfigured with this option after the upgrade completes.

Note:

❑ Upgrades backup the entire existing installation in the following folder:

drive:\ibi\WebFOCUS82\backup_files\

If multiple upgrades are performed, the latest existing backup is renamed, with the current date/time stamp appended to the folder name, for example:

drive:\ibi\WebFOCUS82\backup_files_02.22.2020.13.46\

❑ During the upgrade installation, configuration changes are applied to the new installation while restoring files from the backup location or by merging configuration changes from the backup files to the files created by the new installation.

❑ If you made custom changes to files that are not restored during upgrades, restore the required files manually.

Migrating Configuration Files from Release 8.1 Version 05M to Release 8206

Due to architecture changes in WebFOCUS, the configuration of WebFOCUS has changed between Release 8.1.*x* and Release 8.2.*x*. If you are upgrading content from Release 8.1 Version 05M to Release 8206, use the configuration file migration utility to ensure that the configuration applied in the earlier release is properly migrated to the new installation.

Note: Run the configuration file migration utility before updating the WebFOCUS database repository.

Configuration File Migration Utility Implementation

The configuration file migration utility is implemented using Java. A supported version of Java is required to run the configuration file migration utility. You can perform the migration by running Java commands from the Command line.

The following configuration files will be migrated:

❏ webconfig.xml and install.cfg

The install.cfg file in Release 8206 will be updated and the following settings will be added while moving entries from the install.cfg and webconfig.xml files from the earlier Release 8.1 Version 05M installation:

```
IBI_APPROOT_DIRECTORY
IBI_WEBAPP_CONTEXT_DEFAULT
IBI_WEBFOCUS_CONTEXT
IBI_STATIC_CONTENT_CONTEXT
IBI_HELP_CONTEXT
IBI_REPORTCASTER_CONTEXT
IBI_REPOS_DB_USER
IBI_REPOS_DB_PASSWORD
IBI_REPOS_DB_DRIVER
IBI_REPOS_DB_URL
```

After running the migration utility, check the updated install.cfg file to ensure it has the correct entries in the following settings related to database name and user:

```
IBI_REPOS_DB_USER
IBI_REPOS_DB_PASSWORD
IBI_REPOS_DB_DRIVER
IBI_REPOS_DB_URL
```

Note: Any additional updated settings found in the webconfig.xml file will be moved to the webfocus.cfg file.

The configuration file migration utility will not move the following settings. The Release 8206 defaults will be used for the following:

```
IBI_CSRF_ENFORCE
IBI_CM_RETAIN_HANDLES
IBI_CUSTOM_SECURITY_PARAMETER
IBI_CUSTOM_SECURITY_DRIVER
IBI_ENCRYPTION_PROVIDER
IBI_MOVE_CONFIRMATION_MESSAGE
IBI_REPOSITORY_SYNC_INTERVAL
IBI_REST_METHOD_ENFORCE
```

❏ languages.xml. Configuration entries in this file for Release 8.1 Version 05M will be combined with the entries in the Release 8206version of the file.

❏ mime.wfs. Configuration entries in this file for Release 8.1 Version 05M will be combined with the entries in the Release 8206 version of the file.

❏ Security files:

  ❏ securitysettings.xml

  ❏ securitysettings-mobile.xml

  ❏ securitysettings-portlet.xml

  ❏ securitysettings-zone.xml

  These security files will get copied from Release 8.1 Version 05M to Release 8206.

  If you use SAML authentication, update the migrated securitysettings.xml file and ensure the path to the location of the SAML certificate is correct.

  The default path for Release 8.1.05 is:

  `{IBI_CONFIGURATION_DIRECTORY}/was/saml/samlKeystore.jks`

  The default location for Release 8206 is:

  `{IBI_CONFIGURATION_DIRECTORY}/was/wfKeystore.jks`

Note:

❏ The original files modified through the configuration file migration utility will be backed up in the following directory:

  `..\ibi\WebFOCUS82\merge_files\`

❏ The log file name and location is:

  `..\ibi\WebFOCUS82\application_logs\configMigration.log`

❏ To preserve additional customizations done in Release 8.1 Version 05M, it is recommended that you copy the following configuration files from your Release 8.1 Version 05M installation to the corresponding folder of your Release 8206 installation.

  Prior to proceeding with the copy, ensure you have backed up the original files from Release 8206.

  ❏ `..\ibi\WebFOCUS81\client\wfc\etc\odin.cfg`

Reporting Servers specified in the odin.cfg file must meet requirements of WebFOCUS Release 8.2.*x*.

❏ ..\ibi\WebFOCUS81\client\wfc\etc\site.wfs

Restore this file if it has been customized.

❏ ..\ibi\WebFOCUS81\config\license.cfg

❏ ..\ibi\WebFOCUS81\config\wflicense.key

❏ ..\ibi\WebFOCUS81\ibi_html\javaassist\ibi\html\olap\olapdefaults.js

❏ ..\ibi\WebFOCUS81\config\caster\ApplicationPreferences.xml

❏ ..\ibi\WebFOCUS81\ibi_html\javaassist\nls.txt

❏ ..\ibi\WebFOCUS81\config\security_metadatasource.xml

❏ ..\ibi\WebFOCUS81\ibi_html\javaassist\ibi\html\js\multidrill.css

Restore this file if it has been customized.

❏ ..\ibi\WebFOCUS81\config\was\

❏ ..\ibi\WebFOCUS81\config\web_resource\map\

Ensure the JDBC driver configuration in the Release 8206 installation is correct and supports the database repository that is configured in the install.cfg file.

```
..\ibi\WebFOCUS82\utilities\setenv\utiluservars.bat
```

❏ The migration of other customized files needs to be manually applied to the new installation.

Procedure: **How to Run the Configuration File Migration Utility**

1. From the Command line, navigate to the following directory:

```
..\ibi\WebFOCUS82\utilities\lib\
```

2. Run the following command:

```
java -classpath IBFSCommands.jar
com.ibi.applications.config.WFMigrateConfig
oldDocumentRoot newDocumentRoot
```

where:

oldDocumentRoot

Is the root location of the Release 8.1 Version 05M installation.

newDocumentRoot

Is the location of the new installation directory.

For example:

```
java -classpath IBFSCommands.jar
com.ibi.applications.config.WFMigrateConfig
C:\ibi\WebFOCUS81 C:\ibi\WebFOCUS82
```

Note:

❏ A supported version of Java is required to run the configuration file migration utility.

❏ When running the Java command to migrate the configuration files, you can also specify the location of Java to be used.

For example:

```
"C:\Program Files\Java\jre1.8.0_242\bin\java"
-classpath IBFSCommands.jar
com.ibi.applications.config.WFMigrateConfig
C:\ibi\WebFOCUS81 C:\ibi\WebFOCUS82
```

Upgrading Content From Release 8.1.x or 8.0.x to Release 8206

The following procedure describes how to upgrade content and applications from WebFOCUS Release 8.1.*x* or 8.0.*x* to Release 8206.

Procedure: **How to Upgrade Content From Release 8.1.x or 8.0.x to Release 8206**

1. **Important:** Make a backup of your database repository, following your corporate best practices.

2. Ensure the collation of the database, including all tables and columns, is case sensitive.

3. Ensure the database is running.

4. Perform a new full installation of Release 8206.

    Note: During the installation, you will point to the existing 8.1.*x* or 8.0.*x* database repository that you plan to use with Release 8206.

5. During the installation of Release 8206, specify the type of database repository, as well as the database repository information for the earlier database repository that you are using. Specifically, in the Select Components to install dialog box, under Configure pre-existing Database, select the type of database repository that you are using, such as Microsoft SQL Server or Oracle, as shown in the following image. In addition, ensure the *Create WebFOCUS Repository* option is not selected.

3. Installing the WebFOCUS Client
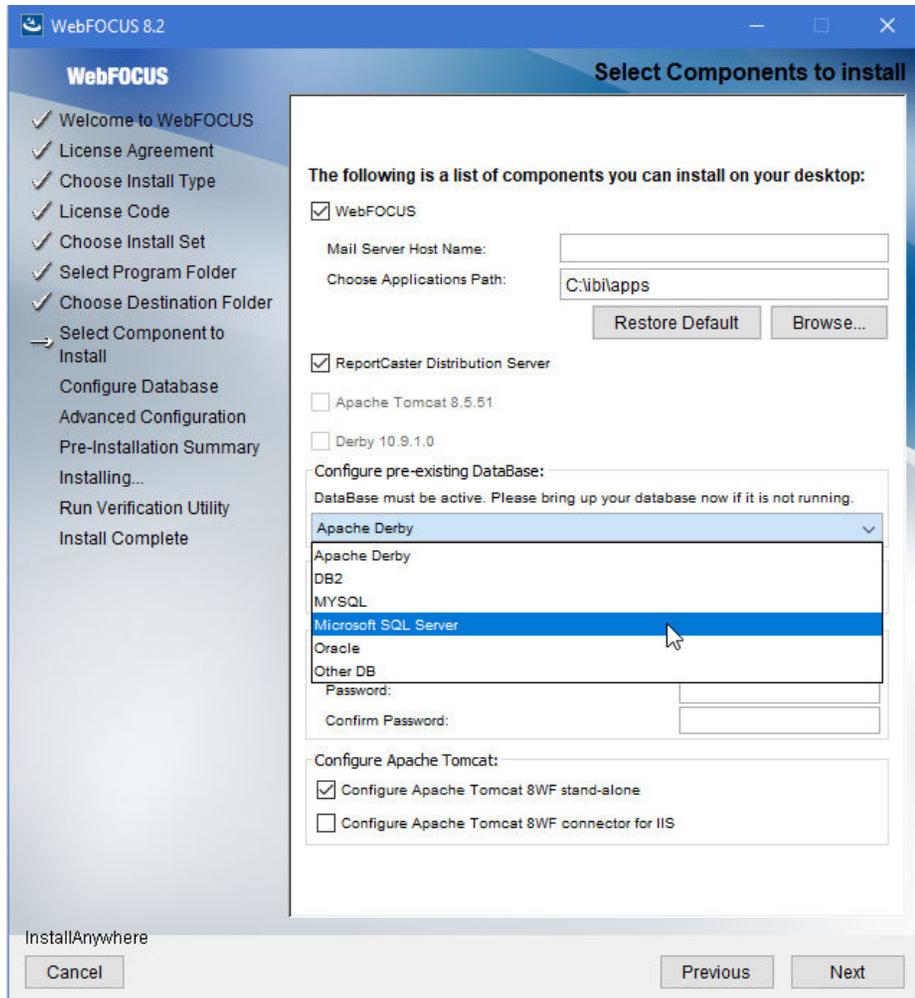
6. In the Database Configuration dialog box, type the database repository name, connection, and configuration information. An example of this information is shown in the following image.
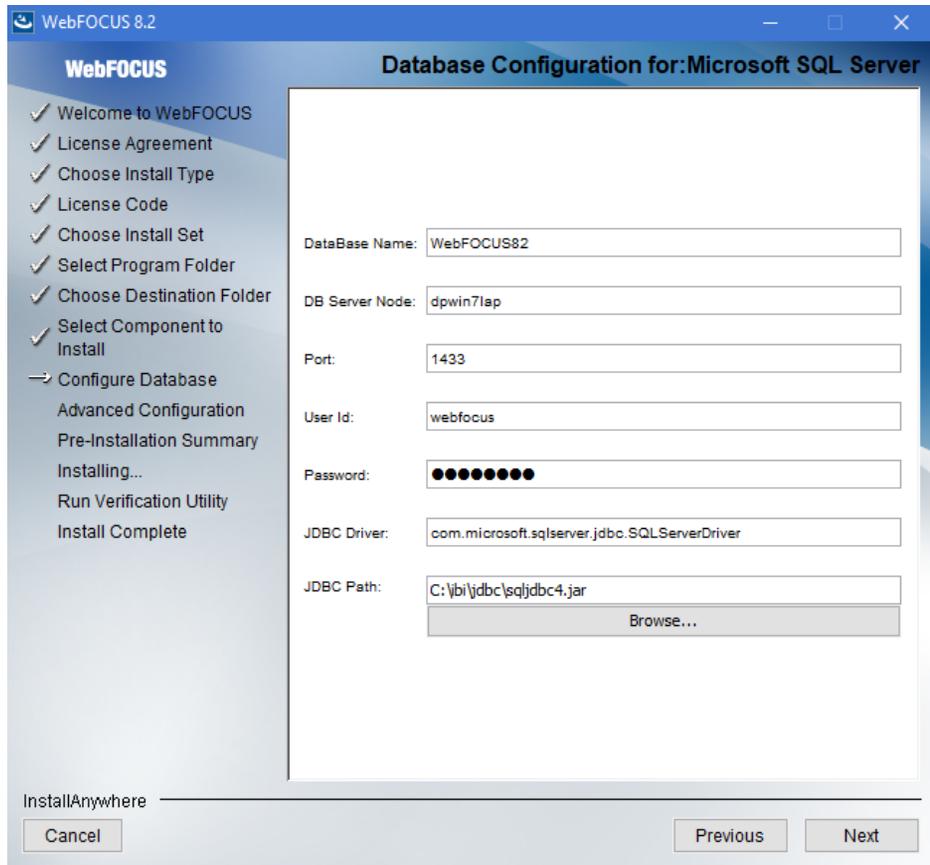
Note: The credentials you provide need privileges to create and edit database tables.

Once completed, the new installation of Release 8206 is available in the *drive*:\ibi \WebFOCUS82 directory.

7. Stop your application server, for example, Apache Tomcat.

8. Ensure that your database repository, for example Microsoft SQL Server, where your WebFOCUS 8.0.*x* or 8.1.*x* database repository is stored, is running.

9. **Important:** Rename the *drive*:\ibi\WebFOCUS82\utilities\lib\versions \8200\IBFSCommands.jar file.

10. Run the configuration file migration utility, as described in *Migrating Configuration Files from Release 8.1 Version 05M to Release 8206* on page 71.

11. Run the *drive*:\ibi\WebFOCUS82\utilities\dbupdate\db_inplace_update utility.

    Note:

    ❏ You will be prompted for database credentials. Ensure the user name provided is allowed to create and edit database tables.

    ❏ **Important:** You will be prompted for the location of the IBFSCommands.jar file. Point to the IBFSCommands.jar file used in the release in which the WebFOCUS repository was created. For example, if you are using 8.1.*x*, point to the *drive*:\ibi \WebFOCUS81\utilities\lib\ folder.

       Note: If you install Release 8206 on a different machine, that does not have access to the earlier version of WebFOCUS, you must copy the IBFSCommands.jar file from the earlier version of WebFOCUS to the machine with Release 8206 in location *drive*:\ibi \WebFOCUS82\utilities\lib\versions\8200\.

    ❏ After the script completes, you should receive an Update process SUCCEEDED message.

12. If you are updating an 8.0.x database for use with Release 8206, you need to run the following utilities after db_inplace_update:

    drive:\ibi\WebFOCUS82\utilities\bip\portalconversion.bat

    drive:\ibi\WebFOCUS82\utilities\bip\favoritesmigration.bat

    Logs are created in the *drive*:\ibi\WebFOCUS82\application_logs folder.

13. After a successful database update, clear the application server cache and then start the application server.

14. Confirm that the connection to WebFOCUS is functional and that the content is correct.

15. Run the following utility to load new roles and BI Portal page templates into the WebFOCUS repository:

    drive:\ibi\WebFOCUS82\utilities\WFReposUtil\update_repos.bat

    You will be prompted to provide WebFOCUS administrator credentials.

    This utility imports the following Change Management packages:

    ❏ *drive*:\ibi\WebFOCUS82\features\bip\managers_group_and_rules.zip

    ❏ *drive*:\ibi\WebFOCUS82\features\bip\bip_page_templates_V*nn*.zip, where *nn* is the version of the package.

    ❏ *drive*:\ibi\WebFOCUS82\features\bip\pgx_page_templates_V*nn*.zip, where *nn* is the version of the package.

❏ *drive*:\ibi\WebFOCUS82\features\bip\themes_V*nn*.zip, where *nn* is the version of the package.

❏ *drive*:\ibi\WebFOCUS82\features\roles\roles.zip.

Logs are created in the *drive*:\ibi\WebFOCUS82\application_logs folder under the following names:

❏ cm_import_bip_page_templates_*<date_time>*.log

❏ cm_import_managers_group_and_rules_*<date_time>*.log

❏ cm_import_themes_V*nn<date_time>*.log

❏ cm_import_pgx_page_templates_V*nn<date_time>*.log

❏ cm_import_roles_*<date_time>*.log

❏ cm_import_managers_group_and_rules_*<date_time>*.log

16. Use the Role Update Utility available in the WebFOCUS Administration Console to update repository roles and privileges. The utility enables you to identify differences between roles and privileges available in your existing repository and the new roles and privileges provided with the new installation.

It is recommended that you replace your repository with new roles and privileges to use new functionality and features.

The following is an example using a WebFOCUS Release 8.2 Version 01M repository and upgrading to Release 8206. The *Run Procedures with Insight* and *Designer* privileges are required to use new functionality, run Insight content, and access WebFOCUS Designer.

a.   Sign in to WebFOCUS as an administrator.

b.   Click the User menu, point to *Administration*, and then click *Administration Console*.

c.   In the Configuration panel, click *Role Update Utility*.

   At the top of the table, you will see a message that identifies new roles and high-level differences between your existing roles.

d.   Examine the differences between the Repository and Packaged roles and privileges and apply the new roles and privileges to enable new functionality and features.

17. Clear the application server cache.

18. Restart the application server.

19. Connect to WebFOCUS and ensure the database is working properly.

Note: If you did not specify the configuration information for your existing database repository during the installation, you must edit the install.cfg file. The install.cfg file is located in the WebFOCUS82\config\ directory. Open the file and provide the necessary path information, host name, port, and database name for the JDBC driver connection string and the credentials for the database repository. The database user password is encrypted once the application server is restarted. Database credentials must allow database table creation and table edits.

Proceed with steps 7 through 18.

Troubleshooting

Review the following section if you encounter issues while performing your upgrade.

Issue 1: The database repository update fails immediately.

Solution: If the database repository update fails, ensure that the database repository is running, and the database owner is allowed to update the database repository. Meaning, the database owner can create and edit tables.

Note: The user ID must have db_owner rights to the repository database.

Issue 2: The application server fails to start.

Solution: Run the db_check_version.bat utility, which is available in the WebFOCUS82\utilities \dbupdate folder, to verify whether the database repository was updated, or needs to be updated.

Issue 3: The application server fails to start or the database repository update fails.

Solution: Use the WebFOCUS web application to review the application server logs and WebFOCUS logs, such as event.log, for errors. These logs are located in the following folders:

❏ WebFOCUS system event logs are created in the *drive*:\ibi\WebFOCUS82\logs folder.

❏ Log names for the dbupdate and dbcheck utilities are named db_inplace_update_<*timestamp*>.log and db_check_version__<*timestamp*>.log and are created in the *drive*:\ibi\WebFOCUS82\application_logs folder.

Upgrading In Place from Release 8.1 Version 05M to Release 8206

The following topic describes how to perform an upgrade in place of content from Release 8.1 Version 05M to Release 8206, while using the existing WebFOCUS 8.1 installation directory.

Note: The upgrade in place feature only applies to Release 8.1 Version 05M Gen 172 and higher. If you are using Release 8.1 Version 05M Gen 14, contact Customer Support Services.

Prerequisites for Upgrading In Place

The following are prerequisites for upgrading in place from Release 8.1 Version 05M to Release 8206:

❏ Ensure the database used for the WebFOCUS repository is backed up prior to proceeding with the upgrade installation.

This is required as the installation program performs database changes and a restore may be required in case of failures.

❑ For the installation that will be upgraded, it is recommended to back up the existing installation folder and files on disk.

The installation program backs up the entire directory prior to upgrading and will restore all files in case there are failures that do not allow the installation to proceed. This is a safety measure in case there are installation failures.

❑ Ensure the application server used by the Release 8.1 Version 05M installation meets the WebFOCUS Release 8206 requirements:

   ❑ WebFOCUS is configured for a supported version of Java.

   ❑ Application server supports the servlet API 3.0 specifications.

   ❑ If using Tomcat, it is recommended that you use the latest 8.5.*x* version. Tomcat 8 or higher is supported.

   ❑ You are using a supported database.

❑ Prior to running the upgrade installation, ensure the application server used by the existing WebFOCUS installation is stopped to ensure files are not locked and there is no product usage.

If Tomcat is used, the installation program attempts to stop the Apache Tomcat service.

❑ Ensure the ReportCaster service for the existing installation is stopped.

The installation program attempts to stop the ReportCaster service.

❑ To avoid files being locked, ensure files from the existing installation are not opened by File Explorer, CMD Window, or another application, such as an editor or browser.

❑ Ensure the connection to the database hosting the WebFOCUS repository is running.

The following are tasks performed by the installation after selecting to upgrade an existing Release 8.1 Version 05M to Release 8206 on Windows:

1. Check for existence of a supported version of Java.

2. Check for Tomcat and stop service.

3. Check for ReportCaster service and attempt to stop it.

4. Check database connection to run required database scripts.

   This is done based on connection information available in the install.cfg file.

5. Upon successful connection, you are prompted to provide WebFOCUS administrator credentials to be used when the installation runs the update_repos script.

6. User authentication and authorization is performed to ensure the provided WebFOCUS account is valid and has privileges to perform import of Change Management packages.

7. Backup all files to the following folder:

   `..\ibi\WebFOCUS81\backup_files\`

   If the backup fails, for example, due to locked files, a message displays. The installation restores all backed up files and exits.

8. The new Release 8206 installation is performed in the same WebFOCUS Release 8.1.*x* folder and the installation properly applies required edits to configuration files, in addition to restoring files, as specified in step 9.

9. Files updated by the installation get backed up in the following folder:

   `..\ibi\WebFOCUS81\update_files\`

   The following files are restored and updated during installation:

   ❏ **web.xml.** Updated during installation, using default values.

   ❏ **odin.cfg.** Restored from backup.

   ❏ **site.wfs.** Restored from backup.

   ❏ **license.cfg.** Restored from backup.

   ❏ **wflicense.key.** Restored from backup.

   ❏ **olapdefaults.js.** Restored from backup.

   ❏ **nls.txt.** Restored from backup.

   ❏ **security_metadatasource.xml.** Restored from backup.

   ❏ **multidrill.css.** Restored from backup.

   ❏ **config/caster/ApplicationPreferences.xml.** Restored from backup.

   ❏ **/config/was/.** Restored from backup.

   ❏ **/config/web_resource/map/.** Restored from backup.

   ❏ **nlscfg.err.** Language and code page will be updated, based on configuration of existing installation. If the WebFOCUS Client code page in the Release 8.1 Version 05M installation was configured as 137 or 437, the code page gets changed to 1252, which is the new replacement value for Release 8.2.x.

10. Migration of configuration files is performed.

Files updated by the migration utility are backed up in the following folder:

```
..\ibi\WebFOCUS81\merge_files\
```

❏ **webconfig.xml and install.cfg**

The install.cfg file in Release 8206 will be updated. The following settings will be added while moving entries from the install.cfg and webconfig.xml files from the earlier Release 8.1.*x* installation:

```
IBI_APPROOT_DIRECTORY IBI_WEBAPP_CONTEXT_DEFAULT
IBI_WEBFOCUS_CONTEXT IBI_STATIC_CONTENT_CONTEXT
IBI_HELP_CONTEXT IBI_REPORTCASTER_CONTEXT
IBI_REPOS_DB_USER IBI_REPOS_DB_PASSWORD
IBI_REPOS_DB_DRIVER IBI_REPOS_DB_URL
```

Note:

❏ Any additional updated settings found in the webconfig.xml file will be moved to the webfocus.cfg file.

❏ File types specified in the WebFOCUS Administration Console for inclusion in the Change Management export packages are preserved during upgrades and an entry with these values is added to the webfocus.cfg file. By default, 8.2.*x* releases support the following file types for exports created by the change management feature: acx, bmp, css, fex, gif, htm, html, ico, jpe, jpeg, jpg, js, mas, mnt, png, sty, and svg. The file type list can be adjusted from the WebFOCUS Administration Console.

The configuration file migration utility will not move the following settings. The Release 8206 defaults will be used for the following:

```
IBI_CSRF_ENFORCE IBI_CM_RETAIN_HANDLES
IBI_CUSTOM_SECURITY_PARAMETER IBI_CUSTOM_SECURITY_DRIVER
IBI_ENCRYPTION_PROVIDER IBI_MOVE_CONFIRMATION_MESSAGE
IBI_REPOSITORY_SYNC_INTERVAL IBI_REST_METHOD_ENFORCE
```

The IBI_WEBAPP_DEFAULT_URL setting is created in install.cfg and is used by the InfoSearch Dimension Index Loader. The default value is:

```
http://<hostname>:80
```

This can be configured through the WebFOCUS Administration Console to provide the proper WebFOCUS protocol, host name, and port.

❏ **mime.wfs.** Entries in this file for Release 8.1.*x* will be combined with the entries in the Release 8206 version of the file.

❏ **Security files:**

  ❏ securitysettings.xml

  ❏ securitysettings-mobile.xml

  ❏ securitysettings-portlet.xml

  ❏ securitysettings-zone.xml

  These security files will get copied from Release 8.1.*x* to Release 8206.

❏ **languages.xml.** Entries in this file for Release 8.1.*x* will be combined with the entries in the Release 8206 version of the file.

❏ **cgivars.wfs.** Settings stored in ..\client\wfc\etc\cgivars.wfs, such as Default Server Node, OLAP, and Parameter Prompting settings are not maintained during the migration process. These settings should be reapplied through the Administration Console. Changes to settings applied through the Administration Console are written to the .. \config\webfocus.cfg file, starting with Release 8.2.

11. Check database collation.

12. If the database is MS SQL Server or MySQL and collation is CI, the installation program changes the database collation to the best matched CS collation.

13. Run the database update.

14. Run the update_repos utility.

15. The upgrade updates the Program group, ReportCaster service, and registry entries.

    If the WebFOCUS ReportCaster service was configured using a domain user account as a service logon account, the service needs to be reconfigured with this option after the upgrade completes.

16. Tomcat cache is cleared.

17. Tomcat is restarted.

18. Installation completes by running the verification page.

    Note: If you are using another application server, redeploy the WebFOCUS web application WAR or EAR file, clear cache manually, and restart the application server.

Note: If any of the database update tasks fail, for example due to connectivity issues or not having database or WebFOCUS account credentials, the database update tasks can be performed post installation.

Post-Installation Review for Upgrading In Place

1. Ensure all required services are running (application server, ReportCaster service).

2. Ensure the connection to the database is working.

3. Connect to WebFOCUS to ensure the product is working and content is accessible.

   WebFOCUS uses the web application context that was configured in the earlier Release 8.1.*x* version.

4. If the web application fails to load:

   a. Check the application logs and WebFOCUS event.log.

   b. Ensure the product uses a valid license supported by Release 8206.

5. Ensure configuration file migration was successful by checking the existence of the following folder:

   ```
   ..\ibi\WebFOCUS81\merge_files\
   ```

6. Verify the contents of the install.cfg and webfocus.cfg files in the following folder:

   ```
   ..\ibi\WebFOCUS81\config\
   ```

7. Ensure the jdbc driver set in the following folder is correct, based on the database used as the WebFOCUS repository.

   ```
   ..\ibi\WebFOCUS81\utilities\setenv\utiluservars.bat
   ```

8. If collation check or change failed during the installation, the following needs to be performed post installation:

   a. Stop the application server.

   b. Ensure connection to the database is accessible and you have credentials that allow database changes (create/edit tables).

   c. Change database collation manually or using the tools available with the updated installation in the following folder:

   ```
   ..\ibi\WebFOCUS81\utilities\dbupdate\collation\
   ```

   d. Run the database update by opening a Command Window (or a UNIX shell) and navigating to the following folder:

   ```
   ..\ibi\WebFOCUS81\utilities\dbupdate\
   ```

   e. From this location, run:

   ```
   db_inplace_update.bat USERNAME=username PASSWORD=password
   SOURCE_CLASS_PATH=source_class_path
   ```

where:

`username`

Is a database user account with db_owner rights to the repository database.

`password`

Is the password of the database user account.

`source_class_path`

Points to the location of the IBFSCommands.jar file from the original installation that was upgraded. Do not include the file name.

This file is backed up in the following folder:

```
C:\ibi\WebFOCUS81\backup_files\utilities\lib\
```

For example:

```
C:\ibi\WebFOCUS81\utilities\dbupdate\db_inplace_update.bat
USERNAME=sa PASSWORD=pswd
SOURCE_CLASS_PATH=C:\ibi\WebFOCUS81\backup_files\utilities\lib\
```

f. Run the following to import the required Change Management packages.

```
..\ibi\WebFOCUS81\utilities\WFReposUtil\update_repos.bat
```

g. Clear the application server cache.

h. Restart the application server.

Performing a New Release 8206 Installation Using an Existing 8.2.x WebFOCUS Repository

The following procedure describes how to perform a new Release 8206 installation while using a WebFOCUS repository from an earlier 8.2.*x* installation.

Procedure: **How to Perform a New Release 8206 Installation Using an Existing 8.2.x WebFOCUS Repository**

1. Make a copy of your 8.2.*x* database to be used by the new Release 8206 installation.

2. Ensure the collation of the database, including all tables and columns, is case sensitive.

3. Ensure the database is running.

4. Perform a new full installation of Release 8206.

    Note: During the installation, you will point to the copy of the 8.2.*x* database that you made in Step 1.

5. During the installation of Release 8206, specify the type of database repository, as well as the database repository information for the earlier database repository that you are using. Specifically, in the Select Components to install dialog box, under Configure pre-existing Database, select the type of database repository that you are using, such as Microsoft SQL Server or Oracle. In addition, ensure the *Create WebFOCUS Repository* option is not selected.

6. Next, type the database repository name, connection, and configuration information.

   Note: The credentials you provide need privileges to create and edit database tables.

   Once completed, the new installation of Release 8206 is available in the *drive*:\ibi\WebFOCUS82 directory.

7. Stop your application server, for example, Apache Tomcat.

8. Ensure that your database repository, for example Microsoft SQL Server, where your WebFOCUS 8.2.*x* database repository is stored, is running.

9. Run the *drive*:\ibi\WebFOCUS82\utilities\dbupdate\db_inplace_update utility.

   Note:

   ❏ You will be prompted for database credentials. Ensure the user name provided is allowed to create and edit database tables.

   ❏ After the script completes, you should receive an Update process SUCCEEDED message.

10. After a successful database update, clear the application server cache and then start the application server.

11. Confirm that the connection to WebFOCUS is functional and that the content is correct.

12. Run the following utility to load new roles and BI Portal page templates into the WebFOCUS repository:

    drive:\ibi\WebFOCUS82\utilities\WFReposUtil\update_repos.bat

    You will be prompted to provide WebFOCUS administrator credentials.

    This utility imports the following Change Management packages:

    ❏ *drive*:\ibi\WebFOCUS82\features\bip\managers_group_and_rules.zip

    ❏ *drive*:\ibi\WebFOCUS82\features\bip\bip_page_templates_V*nn*.zip, where *nn* is the version of the package.

    ❏ *drive*:\ibi\WebFOCUS82\features\bip\pgx_page_templates_V*nn*.zip, where *nn* is the version of the package.
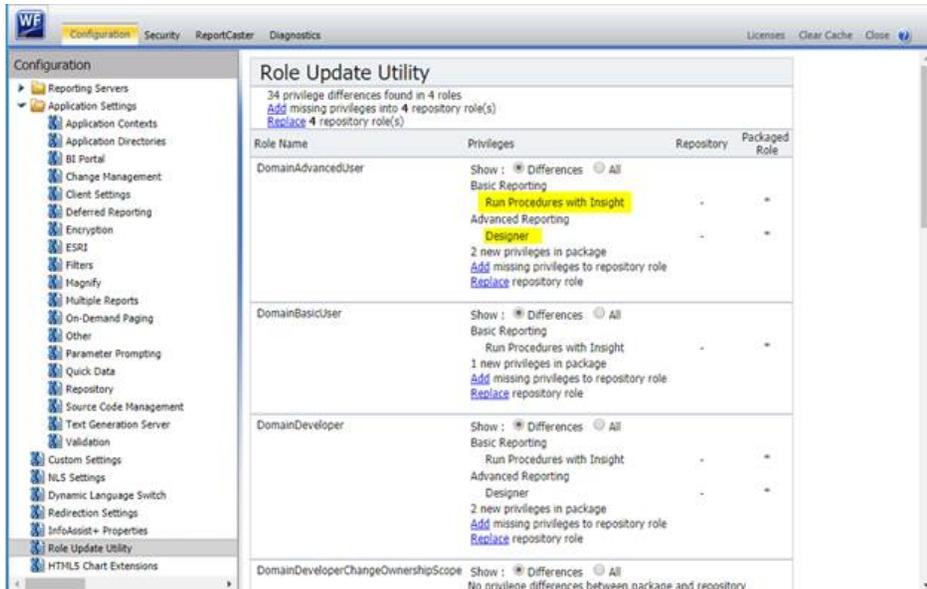
❑ *drive*:\ibi\WebFOCUS82\features\bip\themes_V*nn*.zip, where *nn* is the version of the package.

❑ *drive*:\ibi\WebFOCUS82\features\roles\roles.zip.

Logs are created in the *drive*:\ibi\WebFOCUS82\application_logs folder under the following names:

❑ cm_import_bip_page_templates_<*date_time*>.log

❑ cm_import_managers_group_and_rules_<*date_time*>.log

❑ cm_import_themes_V*nn*<*date_time*>.log

❑ cm_import_pgx_page_templates_V*nn*<*date_time*>.log

❑ cm_import_roles_<*date_time*>.log

❑ cm_import_managers_group_and_rules_<*date_time*>.log

13. Use the Role Update Utility available in the WebFOCUS Administration Console to update repository roles and privileges. The utility enables you to identify differences between roles and privileges available in your existing repository and the new roles and privileges provided with the new installation.

It is recommended that you replace your repository with new roles and privileges to use new functionality and features.

The following is an example using a WebFOCUS Release 8.2 Version 01M repository and upgrading to Release 8206. The *Run Procedures with Insight* and *Designer* privileges are required to use new functionality, run Insight content, and access WebFOCUS Designer.

a. Sign in to WebFOCUS as an administrator.

b. Click the User menu, point to *Administration*, and then click *Administration Console*.

c. In the Configuration panel, click *Role Update Utility*.

At the top of the table, you will see a message that identifies new roles and high-level differences between your existing roles.

d. Examine the differences between the Repository and Packaged roles and privileges and apply the new roles and privileges to enable new functionality and features.

WebFOCUS Client and ReportCaster Directory Structures

After installation, the WebFOCUS Client and ReportCaster directory structures are created.

WebFOCUS Client Directories

The following directory is installed in the ibi directory by default:

`apps`

Contains applications and data files. By default, this is the APPROOT directory where WebFOCUS looks for application files.

The default location for other directories is in the WebFOCUS82 directory. For example:

`drive:\ibi\WebFOCUS82`

The WebFOCUS82 directory contains the following subdirectories:

`application_logs`

>Contains log files generated from application utilities, such as change management imports or database updates.

`backup_files`

>Upgrades backup the entire existing installation in the following folder:

>`..\WebFOCUS82\backup_files\`

>If multiple upgrades are performed, the latest existing backup is renamed, with the current date/time stamp appended to the folder name, for example:

>`/WebFOCUS82/backup_files_05.22.2019.13.46/`

>The restore of configuration files and changes to configuration files are performed at the end of the installation upgrade process and information is written to the following log file:

>`WebFOCUS82_<date_time>.log`

`client`

>Contains configuration files.

`cm`

>Default location for Change Management import and export packages.

`config`

>Contains additional configuration files and files for optional security configurations.

`features`

>Contains templates for new portals and resources related to security configuration.

`ibi_html`

>Contains Java tools, templates, and other files used by WebFOCUS.

`jre`

>Contains Java bundled with WebFOCUS.

`licenses`

>Contains licenses for WebFOCUS and third-party software components.

logs

>Contains space for log files of system events.

magnify

>Contains Magnify product files.

maptiles

>Legacy folder that contains local map tiles, which were used when rendering maps using OpenStreetMap® data.

migration_import

>Location for migration packages created from an earlier release.

ReportCaster

>Contains the ReportCaster Distribution Server directories and files.

samples

>Contains sample WebFOCUS API applications and demos.

temp

>Contains space used during internal processing.

Uninstall_WebFOCUS82

>Contains files used by the uninstall program.

utilities

>Contains tools for configuration, migration, and other tasks.

webapps

>Contains the WebFOCUS and ReportCaster web applications.

ReportCaster Distribution Server Directories

The default directory for the Distribution Server is:

drive:\ibi\WebFOCUS82\ReportCaster

The directory contains the following subdirectories:

bin

>Contains application and other executable files.

cfg

>Contains configuration and NLS resource files.

lib

>   Contains ReportCaster libraries.

log

>   Contains configuration and error messages.

resources

>   Contains resources.

samples

>   Contains sample API files.

temp

>   Contains space for internal processing.

trc

>   Contains the trace files.

Note: ReportCaster web components are installed with WebFOCUS Client.

File Permissions for WebFOCUS Client Directories

Since the WebFOCUS Client runs as part of your web and application servers, the user IDs that run web and application server processes require access to the WebFOCUS Client directories. For Windows, default NTFS permissions are usually sufficient. However, the necessary steps depend on your web and application server.

❏ **For Tomcat,** there is normally no need to set NTFS permissions. When Tomcat runs as a service, it runs as the Local System account which has sufficient permissions, by default.

>   You can optionally enhance security by changing the user ID under which Tomcat runs to an ID with less authority on the machine, and then setting NTFS permissions for this user ID. For more information, see *Additional WebFOCUS Configuration Options* on page 213.

❏ **For other web and applications servers,** consult your web and application server documentation to determine the user IDs under which your servers run. If your servers do not run as Windows services, the default file system permissions are probably sufficient.

For additional information about permissions and security, see the *WebFOCUS Security and Administration* manual.

Uninstalling the WebFOCUS Client

Prior to uninstalling the WebFOCUS Client software, ensure that the application server and HTTP server used by WebFOCUS are stopped, and that the WebFOCUS ReportCaster WF82 service is also stopped. You can use the following options to uninstall the WebFOCUS Client:

❑ The Information Builders app from the Start menu. You can uninstall the software by selecting the *WebFOCUS 82* folder, and then double-clicking the *Uninstall WebFOCUS 82* shortcut.

❑ The command line by executing the uninstall program *Uninstall_WebFOCUS82.exe* (for example, C:\ibi\WebFOCUS82\Uninstall_WebFOCUS82\Uninstall_WebFOCUS82.exe).

❑ A silent uninstall, using the command line, by adding the option *-i silent* after the uninstall executable file. For example:

```
C:\ibi\WebFOCUS82\Uninstall_WebFOCUS82\Uninstall_WebFOCUS82.exe -i silent
```

Chapter 4

Configuring Web and Application Servers

This chapter explains how to configure web and application servers to run WebFOCUS and ReportCaster. If the WebFOCUS installation configured them for you and the verification tool ran successfully, then this chapter is optional. However, you should review it if you need to troubleshoot. In addition, if you are new to Apache Tomcat or WebFOCUS, it is a good idea to review this chapter to understand what was configured.

The term application server is used in this section to refer to a servlet container, J2EE Engine, or application server.

The following abbreviation is used for the drive letter of the ibi directory where you install WebFOCUS components on your system:

drive:\

Substitute the actual letter on your system when reviewing procedures and examples in this document. Procedures and examples assume default locations and directory names. If you change defaults, substitute accordingly.

In this chapter:

❏ Configuration Overview and Options

❏ Configuring Apache Tomcat

❏ Configuring Microsoft IIS Version 7.x

❏ Configuring IBM WebSphere

❏ Configuring Oracle WebLogic

Configuration Overview and Options

WebFOCUS Client and ReportCaster web components run as part of web servers and application servers. Configuration steps vary depending on which web servers or application servers you use. When using file and folder names that use NLS characters, the application server and the operating system must be configured with the same language encoding.

❑ **Apache Tomcat Stand-alone**

Tomcat can be used as both the web server and application server. If you choose this option, be aware that the default HTTP port for Tomcat is 8080, not 80. Therefore, when calling web server pages in a browser, you must use:

```
http://hostname:8080
```

instead of

```
http://hostname
```

Manual configuration is described in *Configuring Apache Tomcat* on page 99.

❑ **Microsoft IIS and Apache Tomcat**

Tomcat can be used as the application server while Microsoft IIS is used as the web server. This requires two servers and the configuration of their communications.

Manual configuration is described in *Configuring Apache Tomcat* on page 99.

❑ **IBM WebSphere Application Server**

For details, see *Configuring IBM WebSphere* on page 120.

❑ **Other**

Other web servers or application servers can be manually configured. Review your server documentation and perform steps that correspond to the information that follows.

If no web server is available, an application server can be used to handle all processing if the application server has robust HTTP capabilities.

Configuration Steps Overview

The following is an overview of the steps needed to configure web or application servers for WebFOCUS and ReportCaster. For Apache Tomcat, you can review this overview or proceed directly to *Configuring Apache Tomcat* on page 99.

Important: If you want to install WebFOCUS in a clustered or split-tier environment, see *Configuring WebFOCUS in a Split Web-Tier and Application Server-Only Environment* on page 134.

The steps vary depending on the type of configuration you use:

❏ **Web Server and Application Server Configuration** (aliases and web applications). In a standard configuration, you can create aliases to traditional static web content in a WebFOCUS directory (ibi\apps) and you deploy two web applications on your application server (webfocus.war and ibi_help.war). This is supported when both a web server and an application server are used for WebFOCUS processing. It is also supported when using an application server like Apache Tomcat that can behave like a web server and serve content outside of web applications.

You can also use the web server to only pass requests to Tomcat through a firewall. In that case, you must deploy all three web applications on your application server.

If your web server and application server are located on different machines, see *Configuring WebFOCUS in a Split Web-Tier and Application Server-Only Environment* on page 134.

❏ **Application Server Only Configuration** (all web applications). For application servers like IBM WebSphere, Oracle WebLogic, Oracle Application Server, SAP NetWeaver, and Oracle Java System Application Server, you can deploy all WebFOCUS content through web applications (WAR files). In this configuration, you deploy approot.war in addition to webfocus.war and ibi_help.war and you do not create web server aliases.

For important information on configuring approot.war, see *Configuring WebFOCUS in a Split Web-Tier and Application Server-Only Environment* on page 134.

Procedure: **How to Configure a Web Server and an Application Server for WebFOCUS**

1. Ensure application server and web server components are installed and properly functioning. Refer to third-party documentation, if necessary.

   If you do not have an application server, the WebFOCUS Client installation can install and configure Apache Tomcat for you.

2. Add the WebFOCUS repository JDBC driver to your application server CLASSPATH.

   For information on JDBC drivers, see *Additional WebFOCUS Repository Topics and Tasks* on page 189.

3. Deploy the WebFOCUS web application on the application server.

   WebFOCUS components are packaged as a J2EE web application. The web application is provided as the following WAR file:

   drive:\ibi\WebFOCUS82\webapps\webfocus.war

   It is also provided as the following expanded directory:

   drive:\ibi\WebFOCUS82\webapps\webfocus

   You can deploy either the WAR files or expanded directories, depending on your preference and the capabilities of your application server. For Tomcat stand-alone, using the expanded directories is recommended. Be aware that when applying a service pack, any changes made to the web applications must be in the expanded directories to be maintained.

   The default deployment parameters for WebFOCUS are:

Context Root/ Path	Doc base or location
/ibi_apps	*drive*:\ibi\WebFOCUS82\webapps\webfocus.war
/ibi_help	*drive*:\ibi\WebFOCUS82\webapps\ibi_help.war

Context Root/ Path	Doc base or location
/approot	*drive*:\ibi\WebFOCUS82\webapps\approot.war

If you are using a web server, you can create aliases for the static content. This maps directories containing WebFOCUS data to directories the web server can reference. The default settings are:

Default Alias	Path	Access
approot	*drive*:\ibi\apps	Read Only

On some Windows Servers, you may need to grant Scripts only executable permissions as well.

4. Ensure your web server routes requests for the /ibi_apps, /ibi_help, and /approot web application context roots to the application server.

5. Verify the configuration using the tools in the WebFOCUS Administration Console, as explained in *WebFOCUS Client Post-Installation Tasks* on page 133.

   Note: If you are installing multiple instances, completely install and configure a single instance, and then refer to *Additional WebFOCUS Repository Topics and Tasks* on page 189 for instructions on configuring the second instance.

Configuring Apache Tomcat

This section explains how to manually configure Apache Tomcat for use with WebFOCUS and ReportCaster. The WebFOCUS installation provided the option to install and configure Apache Tomcat for you. If you chose this option and the verification tool ran successfully, you do not need to manually configure Tomcat. However, if you are new to Tomcat or receive errors, you should review this section to understand the configuration process.

There are two configurations available when using Apache Tomcat:

❏ Tomcat can be used as both a web server and application server. This is referred to as a Tomcat stand-alone configuration and all WebFOCUS processing is done by Tomcat.

❏ Microsoft IIS can be used as the web server and Tomcat can be used as the application server. This requires configuring two servers and their communications. Processing is then split between Tomcat and IIS.

> **Note:** To use IIS to only forward requests to Tomcat through a firewall, configure a Tomcat stand-alone configuration, as explained in this section, and then manually configure the Tomcat Connector.

Java Memory Requirement

You may need to adjust the Java VM memory options if you run into performance issues.

Open the Tomcat Configuration Utility and select the *Java* tab, as shown in the following image.
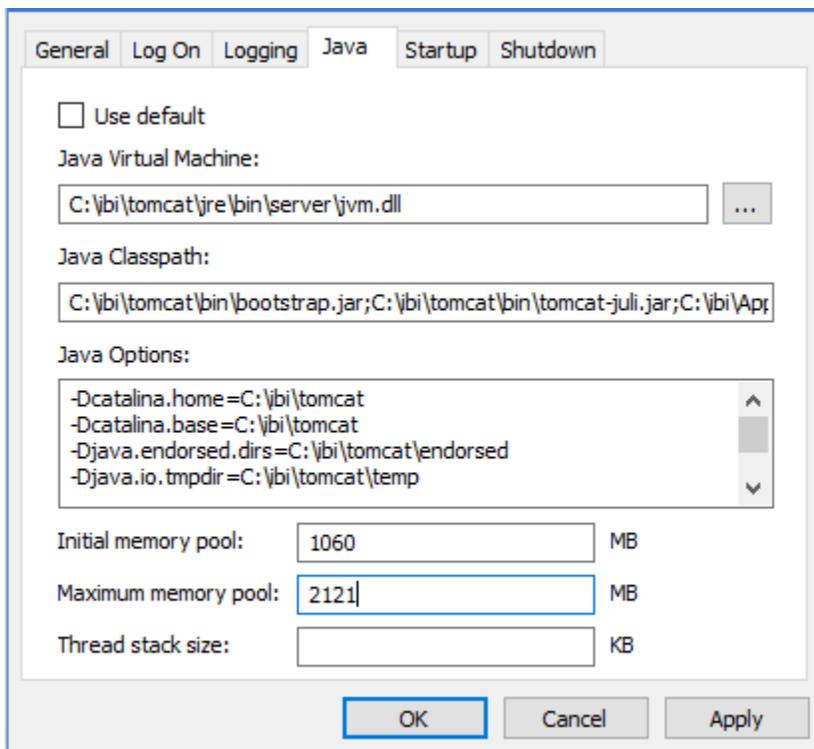
Ensure that the Initial memory pool size is at least 1024MB and that the Maximum memory pool size is at least 2048MB.

Preparing Tomcat for WebFOCUS

It is assumed that Tomcat is installed at this time. If Tomcat is not installed, you can install it from the WebFOCUS Client installation CD or by downloading the installation utility from:

http://tomcat.apache.org/

      Information Builders

If you chose to have WebFOCUS configure Tomcat for you, the following steps were performed:

❏ The default Java memory options were increased. Manually increasing the memory options is explained in *Java Memory Issues* on page 164.

❏ If you use ReportCaster, CLASSPATH was set. Manually setting CLASSPATH is explained in *How to Set CLASSPATH for the Repository Tables* on page 101.

❏ Contexts were created to deploy or set up aliases for WebFOCUS content. Manually creating contexts is explained in *Creating WebFOCUS Contexts for Tomcat* on page 103.

The following steps can be performed to further configure Tomcat:

❏ You can secure the web administration tools installed with Tomcat.

❏ You can change the default ports that Tomcat uses. This is not normally required, but can be changed, as explained in *Tomcat Ports* on page 102.

❏ When Apache Tomcat is configured to use Secure Sockets Layer (SSL), it is recommended for security reasons to allow communication only over the Transport Layer Security (TLS) 1.2 protocol.

To enable TLS 1.2 only, perform the following:

1. Edit the $CATALINA_BASE/conf/server.xml file.

2. In the Connector port section add the following attribute:

   ```
   sslEnabledProtocols="TLSv1.2"
   ```

3. Save and close the file.

4. Restart Apache Tomcat.

Procedure: How to Set CLASSPATH for the Repository Tables

The JDBC driver location must be in the Tomcat CLASSPATH. Tomcat runs as a Windows service, so CLASSPATH is set in the registry. If you chose to configure Tomcat when you installed WebFOCUS, the install should have set this for you.

To manually set Java Classpath or troubleshoot, check your CLASSPATH field and be sure to include the JDBC driver.

Note: If the driver does not appear, add a semicolon (;) to the end of the *Java Classpath* field. Then, add the absolute path to the JDBC driver for your repository. If more than one file is needed, separate each path with a semicolon (;). Spaces can occur in directory names, but not between the paths and the semicolons (;). Be sure to include the file name and not just the directory containing the file. For example:

`C:\ibi\tomcat\bin\bootstrap.jar;C:\drivers\sqljdbc.jar`

For information on JDBC drivers, see *Additional WebFOCUS Repository Topics and Tasks* on page 189.

Reference: ## Tomcat Ports

By default, Tomcat uses the three TCP ports listed below.

Default Port	Name	Use
8080	HTTP Listener Port	You access Tomcat in a web browser using this port. For example: `http://hostname:8080`
8009	Connector Port	Web servers route requests to Tomcat on this port. The Tomcat connector (plug-in) for IIS uses this port. If you change this port and use the connector, change the port in the workers.properties file of the connector.
8005	Shutdown Port	Tomcat uses this port for internal operations and for stopping.

You normally do not need to change these ports. However, if these ports are not available or you want to change them, do the following:

1. Open the following file in a text editor:

   `C:\ibi\tomcat\conf\server.xml`

2. Search for the port numbers you want to replace (8080, 8009, 8005) and replace them with the ports you want to use.

3. Save and exit the file.

If you change defaults, substitute accordingly in procedures and examples.

Creating WebFOCUS Contexts for Tomcat

Configuring Tomcat mainly requires telling Tomcat where WebFOCUS files are located and the context roots in which to use them. For example, you must tell Tomcat to serve files from the WebFOCUS web application:

`drive:\ibi\WebFOCUS82\webapps\webfocus`

when it receives a request for the WebFOCUS context root:

`http://hostname:8080/ibi_apps/`

By creating this context, you deploy the WebFOCUS web application.

Tomcat can also serve files outside of a web application after it knows their location and context. Therefore, Tomcat can be used as both a web server and application server. On a traditional web server, you create aliases. With Tomcat, an alias is treated like a context root, even when serving files outside of a web application.

❏ When using Tomcat as both web and application server, the following contexts must be created:

Context (path)	Directory (DocumentBase)
/ibi_apps	`drive:\ibi\WebFOCUS82\webapps\webfocus.war`
/ibi_help	`drive:\ibi\WebFOCUS82\webapps\ibi_help.war`
/approot	`drive:\ibi\WebFOCUS82\webapps\approot.war`

❏ When using Tomcat as the application server and IIS as the web server, create only the following contexts on Tomcat:

Context (path)	Directory (DocumentBase)
/ibi_apps	`drive:\ibi\WebFOCUS82\webapps\webfocus.war`
/ibi_help	`drive:\ibi\WebFOCUS82\webapps\ibi_help.war`

The approot context is then created as an alias (Virtual Directories) on IIS. IIS is then configured to send requests for ibi_apps to Tomcat.

Procedure: **How to Configure Apache Tomcat**

1. Stop Tomcat from the Windows Services window by right-clicking *Apache Tomcat* and choosing *Stop*.

2. Navigate to the following directory in File Explorer:

   ```
   <catalina_home>\conf\Catalina\localhost
   ```

   Note: If you have an existing version of Tomcat, not installed by a 8.x version of WebFOCUS, the directory will be under:

   ```
   <catalina_home>\conf\Catalina\localhost
   ```

   This directory can contain XML files that define contexts. If the WebFOCUS installation installed and configured Tomcat for you, the following file should appear to define the ibi_apps context that deploys the WebFOCUS directory:

   ```
   ibi_apps.xml
   ```

   ```
   ibi_help.xml
   ```

   If you are using Tomcat stand-alone, the following should appear as well:

   ```
   approot.xml
   ```

   The XML files are named for the context root you would use to access the web application and should have the following syntax:

   ```
   <?xml version='1.0' encoding='utf-8'?>
   <Context docBase="path_To_WebApplication" path="/contextRoot">
   </Context>
   ```

   where:

   path_To_WebApplication

       Is the absolute path to the WAR file or directory you are deploying.

   contextRoot

       Is the context root.

   Note: They can optionally contain additional information, as explained in the Tomcat documentation.

   You can create or edit the files in a text editor, such as Notepad.

3. If the ibi_apps.xml file does not exist, create it. For example:

```
<?xml version='1.0' encoding='utf-8'?>
<Context docBase="C:\ibi\WebFOCUS82\webapps\webfocus" path="/ibi_apps"
useHttpOnly="true">
</Context>
```

Be sure to specify the correct directory on your machine and change the context root if you are not using the default (ibi_apps).

4. If you are using Tomcat stand-alone, create an approot.xml file if it does not exist. For example:

```
<?xml version='1.0' encoding='utf-8'?>
<Context docBase="C:\ibi\apps" path="/approot">
</Context>
```

Be sure to specify the correct directory on your machine.

5. Restart Tomcat from the Services window.

Reference: **Reloading Web Applications**

This is not a consideration if you just installed WebFOCUS for the first time, but you should be aware of it for when you install a service pack or new release. When you upgrade WebFOCUS or install a service pack, Tomcat must use the new web applications, rather than cached copies of the old version.

❏ If you install a service pack in the same location and you had previously deployed the expanded directories, the new web applications should be used automatically, but you should remove the following work directories and then restart Tomcat:

<catalina_home>\work\Catalina\localhost\ibi_apps

<catalina_home>\work\Catalina\localhost\ibi_help

<catalina_home>\work\Catalina\localhost\approot (if previously deployed)

❏ If you are installing in a different location or you deployed WAR files, you need to completely remove the existing WebFOCUS contexts and then recreate them. To remove contexts, you can use the Tomcat Manager application or remove the corresponding files and directories from the context. For example:

<catalina_home>\conf\Catalina\localhost\ibi_apps.xml

<catalina_home>\work\Catalina\localhost\ibi_apps

<catalina_home>\work\Catalina\localhost\ibi_help

<catalina_home>\webapps\ibi_apps

Note: When you deploy WAR files, Tomcat expands them into its own directory structure and does not always know the original location.

Accessing the Shortcut to the Apache Tomcat Properties Window

You can access the Apache Tomcat Properties window by selecting *Programs*, *Information Builders*, *Tomcat*, and then *Tomcat Configuration Utility*. The following image shows the Apache Tomcat 8.5.51 for WebFOCUS Properties window.
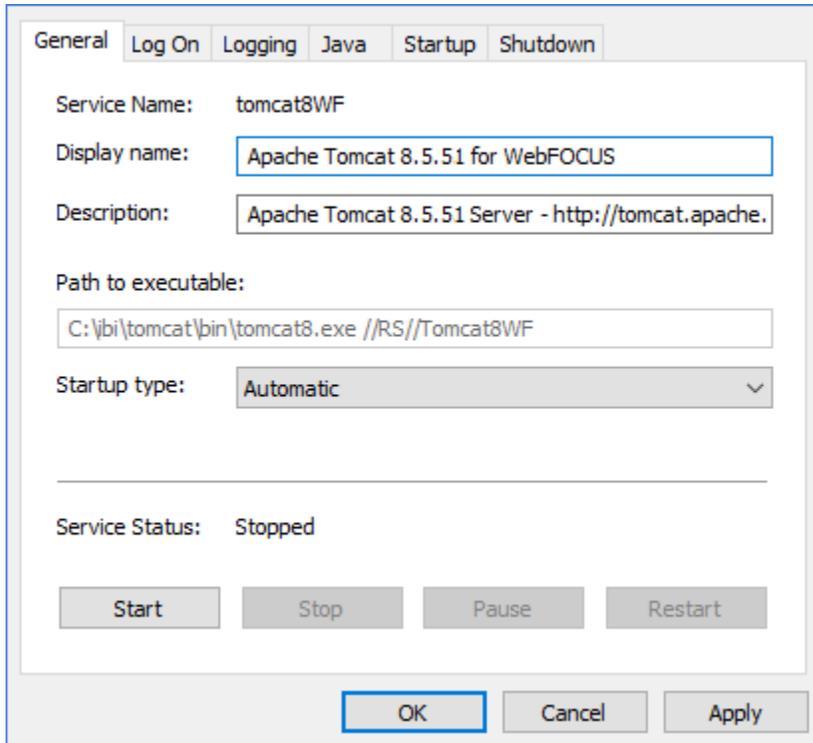
To change Java memory settings, click the *Java* tab, as shown in the following image.
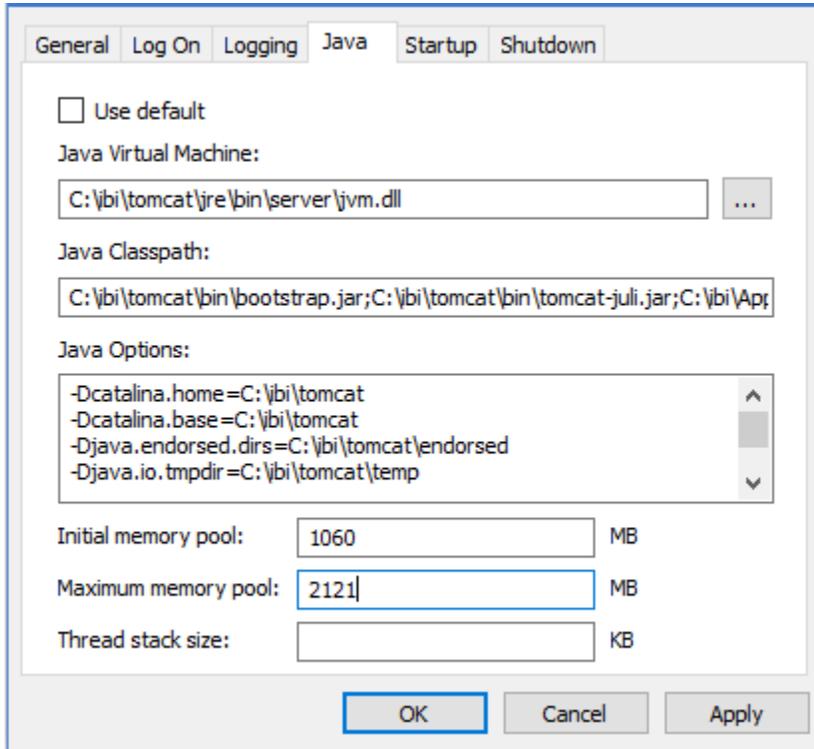
If required, you can use this tab to modify the Java memory settings after installation.

Accessing the Tomcat Manager Application

The Tomcat Manager application is packaged with Apache Tomcat. It provides basic functionality to manage web applications that are deployed to Apache Tomcat. It can be used to troubleshoot issues with the deployment or to manually deploy .war files if required. As of WebFOCUS 8.2, the Tomcat Manager application is not deployed automatically.

Verifying the WebFOCUS Configuration With Apache Tomcat

After finishing the configuration, run test calls to verify operability.

Procedure: **How to Verify the WebFOCUS Configuration**

1. If they are not started, start the following:

   ❏ Apache Tomcat

❏ WebFOCUS Reporting Server

2. Enter the following URL in your browser:

   `http://`*`hostname:port`*`/ibi_apps`

   where:

   `hostname:port`

   Are the host name and port of the web server. However, if you use an application server only configuration, then these are the host name and HTTP port of the application server. For Tomcat stand-alone configurations, the default port is 8080. If you require SSL, use https instead of http.
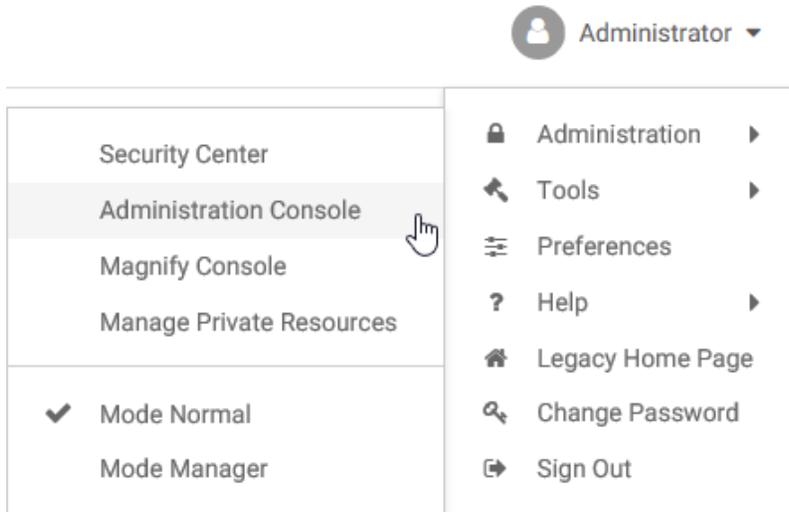
   The WebFOCUS Sign In page opens, as shown in the following image.
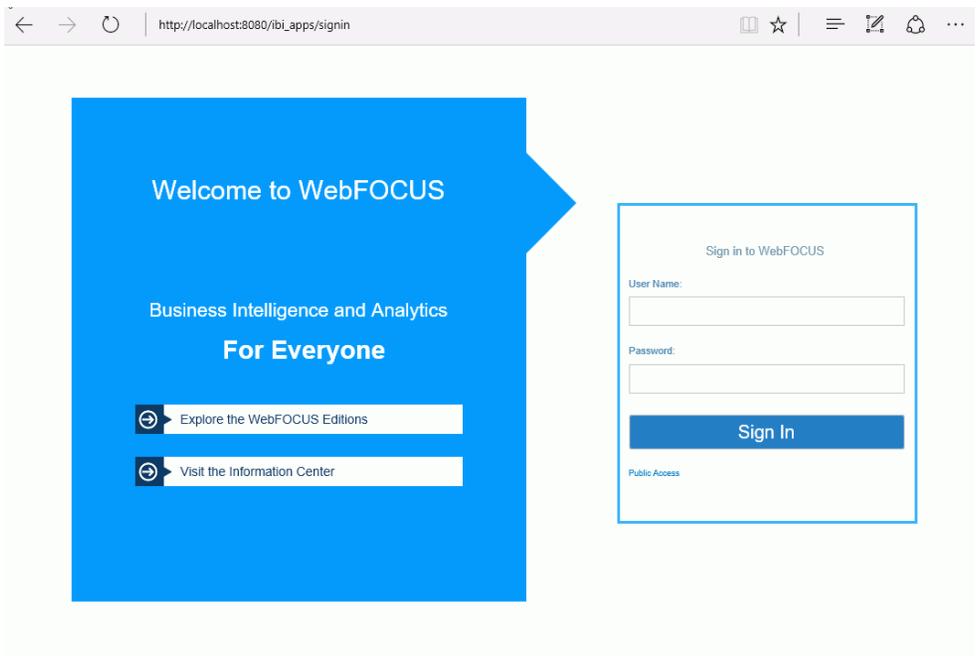
3. Sign in as an administrator. The default user name and password is *admin* and *admin*.

The WebFOCUS Home Page opens in your web browser, as shown in the following image.
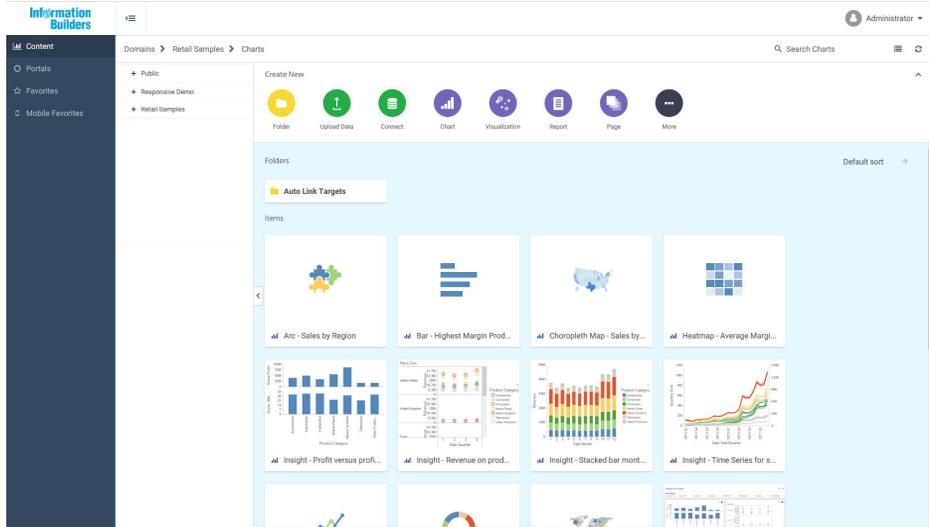
4. Click the User menu, point to *Administration*, and then click *Administration Console*, as shown in the following image.

The WebFOCUS Administration Console opens.

5. Select the *Configuration* tab, expand *Reporting Servers*, and then expand *Server Connections*.

6. Right-click a node, select *Test*, and then select *TABLE Request*, *GRAPH Request*, or *Stored Procedure*, as shown in the following image.
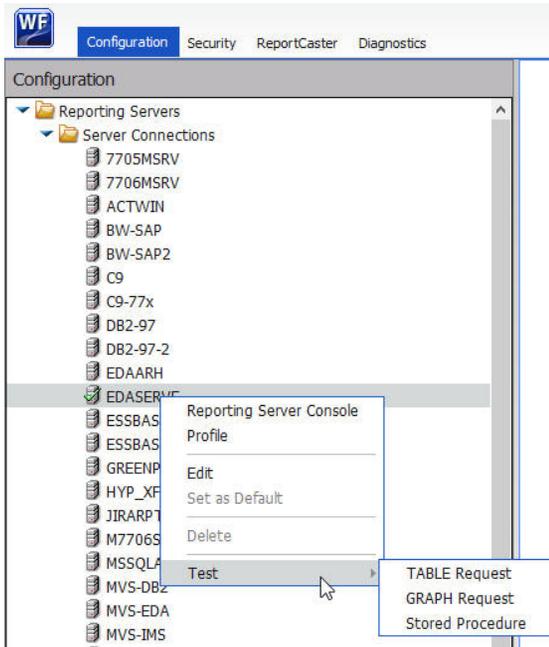
7. Click *Run* to run the test procedure.

   A procedure is normally launched using the WebFOCUS Servlet and a sample report should display. You can manually use a servlet to run a procedure, such as carinst.fex, using:

   ```
   http://host:[port]/ibi_apps/WFServlet?IBIF_ex=carinst
   ```

8. If you are using Tomcat stand-alone, proceed to *WebFOCUS Client Post-Installation Tasks* on page 133.

Configuring Microsoft IIS Version 7.x

This section describes how to configure WebFOCUS 8.2 on a Windows server that is using Microsoft IIS version 7.x. As a prerequisite, ensure that Microsoft IIS version 7.x is already installed.

During the WebFOCUS installation, the Select Components to install screen opens, as shown in the following image.
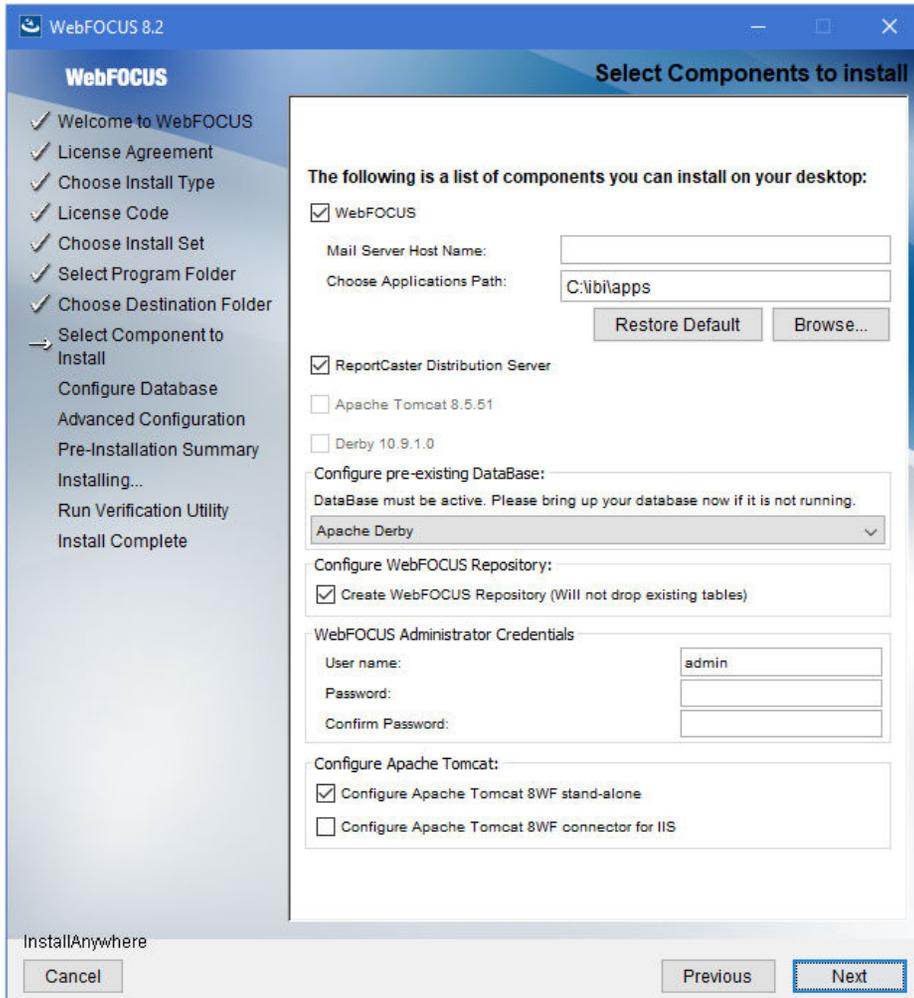
Select *Configure Apache Tomcat 8.5.51 connector for IIS* and click *Next* to continue with the installation.

Before configuring Microsoft IIS version 7.x, test your configuration by accessing the following application server port:

```
http://localhost:8080/ibi_apps/
```

The installation will now configure Microsoft IIS version 7.x.

## Manually Configuring Microsoft IIS Version 7.x

When installing the WebFOCUS client, if you have *Configure Apache Tomcat 8.5.51 connector for IIS* selected, and you receive a message that you must configure the IIS Tomcat plug-in, finish the installation, and then run the following procedure.

Procedure: How to Manually Configure Microsoft IIS Version 7.x

Note: The following procedure describes how to manually configure Microsoft IIS version 7.x on a Windows 2008 server. Depending on the version of Windows you use, the steps and images may vary.
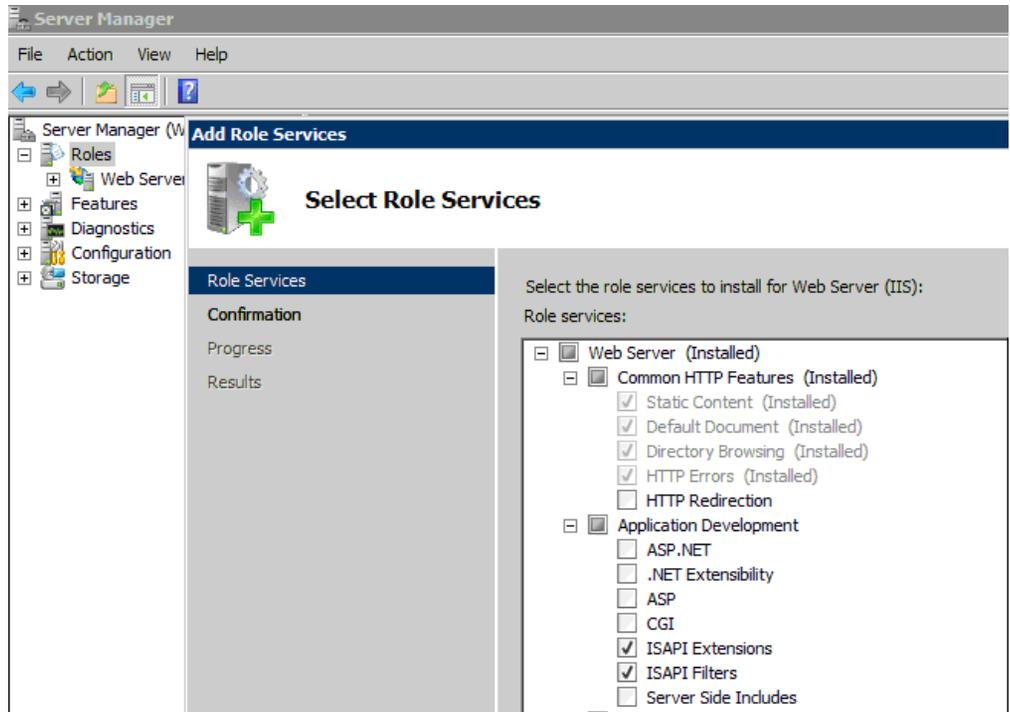
To manually configure Microsoft IIS version 7.x on a Windows server:

1. Open the Windows Server Manager on your system.

2. Select the *Roles* node in the left pane, as shown in the following image.
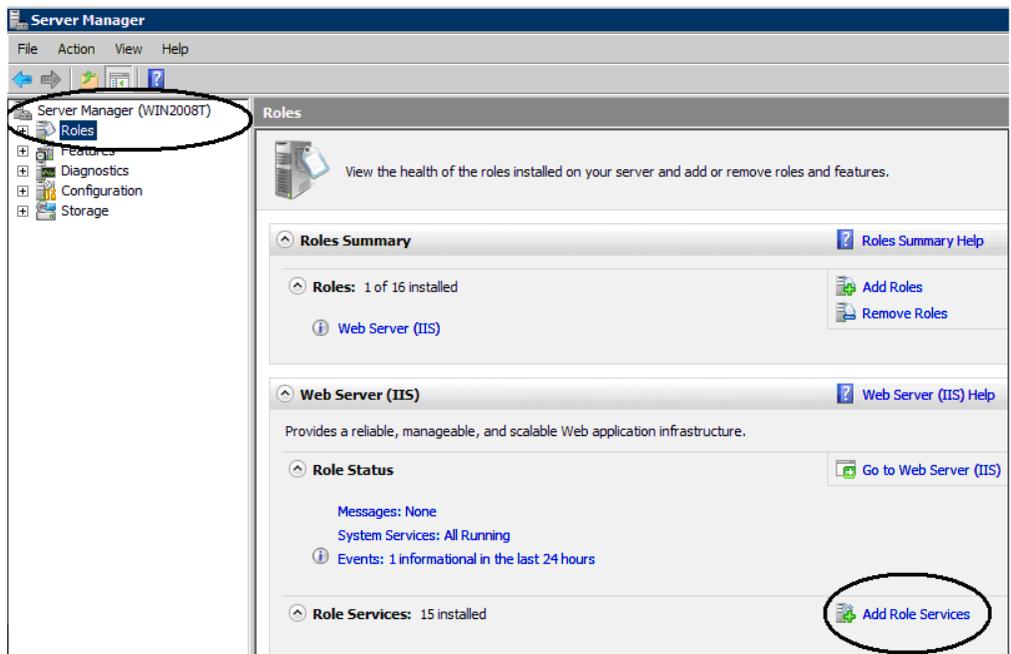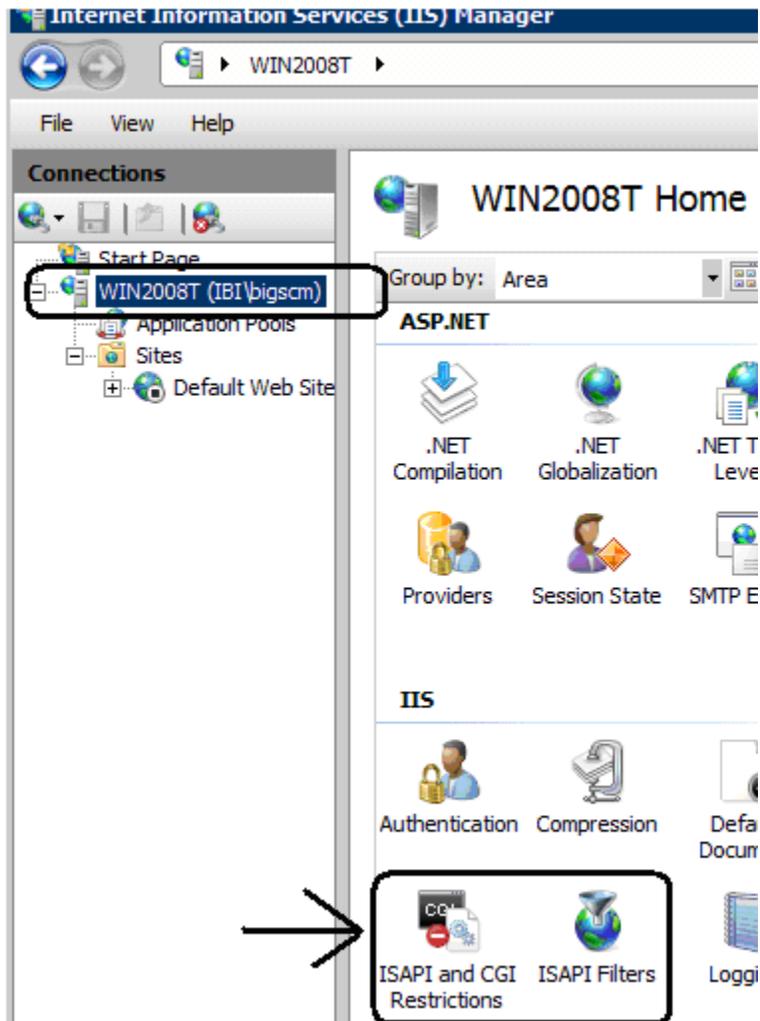

3. Click *Add Role Services* at the bottom of the Roles pane.

The Add Role Services dialog box opens, as shown in the following image.

4. Accept all of the required services that are automatically selected (ISAPI Extensions and ISAPI Filters).
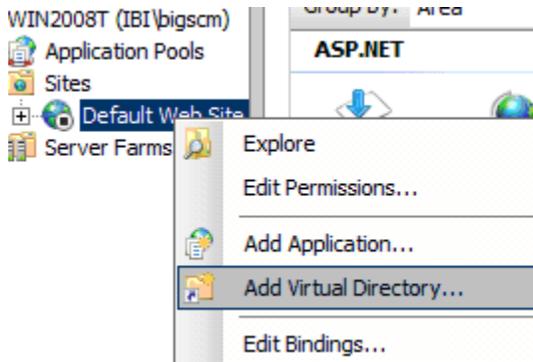
5. After the selected services are installed, open the Internet Information Services (IIS) Manager.
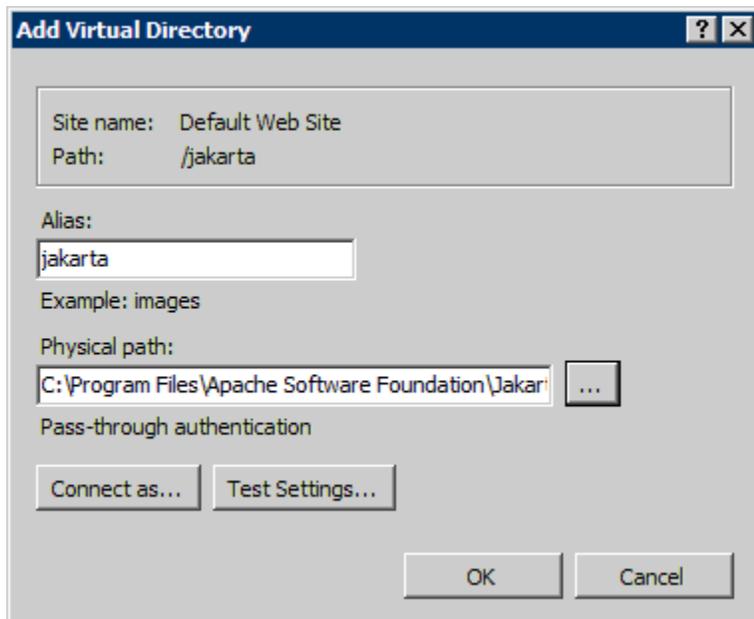

6. Ensure that the following services are available:

❑ ISAPI and CGI Restrictions

❑ ISAPI Filters

7. In the left pane, expand the *Sites* node, as shown in the following image.
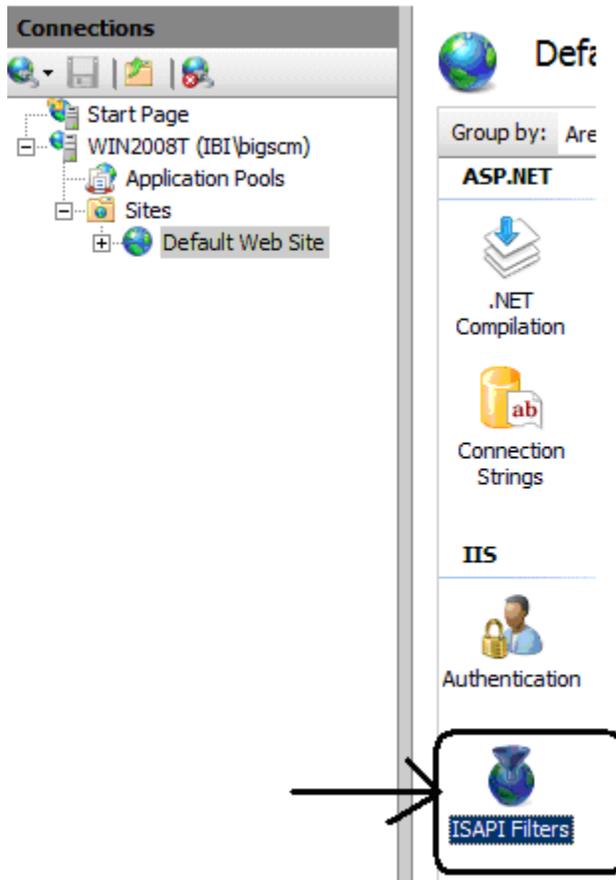

8. Right-click *Default Web Site* and select *Add Virtual Directory* from the context menu.

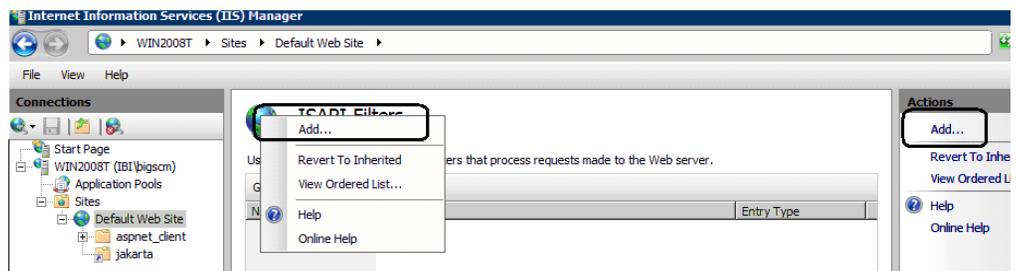   The Add Virtual Directory dialog box opens, as shown in the following image.

9. In the Alias field, type *jakarta*.

10. In the Physical path field, navigate to the location of the isapi_redirect.dll file, which is located in the bin directory.

11. Click *OK*.

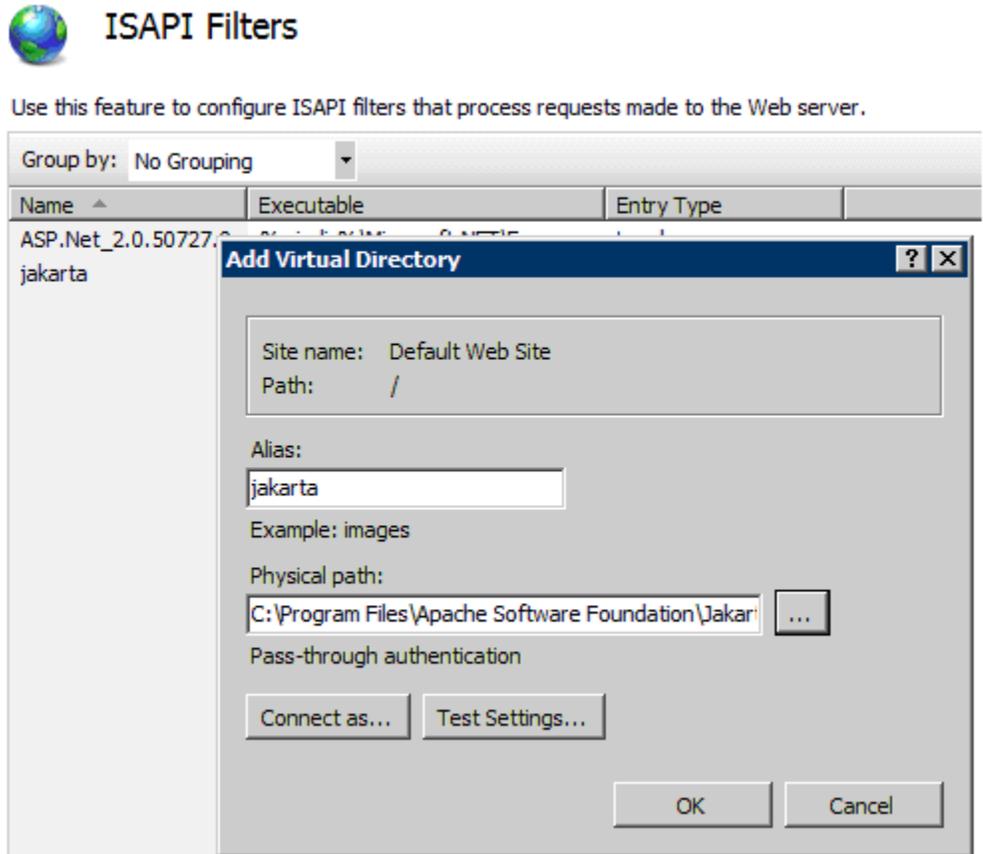12. In the left pane, select the *Default Web Site* node, as shown in the following image.

13. Double-click *ISAPI Filters*.

    The ISAPI Filters pane opens, as shown in the following image.

Information Builders

4. Configuring Web and Application Servers

14. Click *Add* in the right pane. You can also right-click the ISAPI Filters pane and select *Add* from the context menu.

    The Add Virtual Directory dialog box opens, as shown in the following image.

15. In the Alias field, type *jakarta*.

16. In the Physical path field, navigate to the location of the isapi_redirect.dll file, which is located in the bin directory.

17. Click *OK*.

18. In the left pane, expand the *Default Web Site* node and select the *jakarta* node, as shown in the following image.
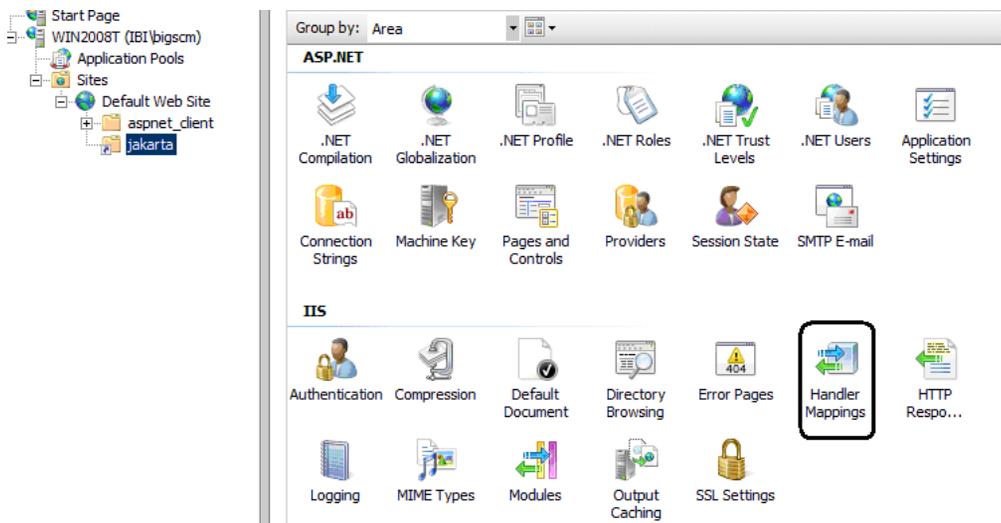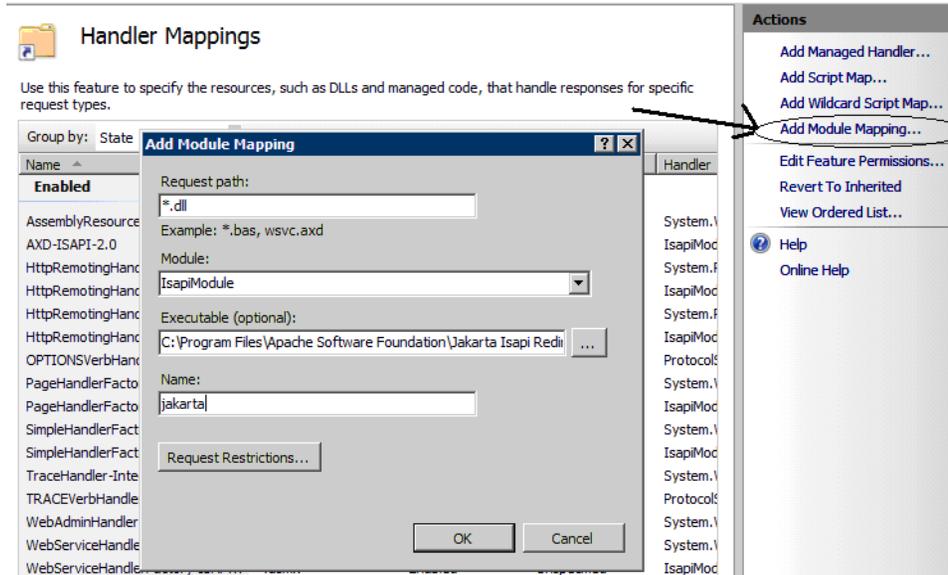

19. Double-click *Handler Mappings*.

The Handler Mappings pane opens.

If the ISAPI module is not already available, then perform steps 20 through 28.

20. Click *Add Module Mapping* in the right pane.

Information Builders

The Add Module Mapping dialog box opens, as shown in the following image.

21. In the Request path field, enter *.dll.

22. From the Module drop-down list, select *IsapiModule*.

23. In the Executable (optional) field, navigate to the location of the isapi_redirect.dll file, which is located in the bin directory.

24. In the Name field, type *jakarta*.

25. Click *OK*.

26. Click *Edit Feature Permissions* in the right pane, as shown in the following image.
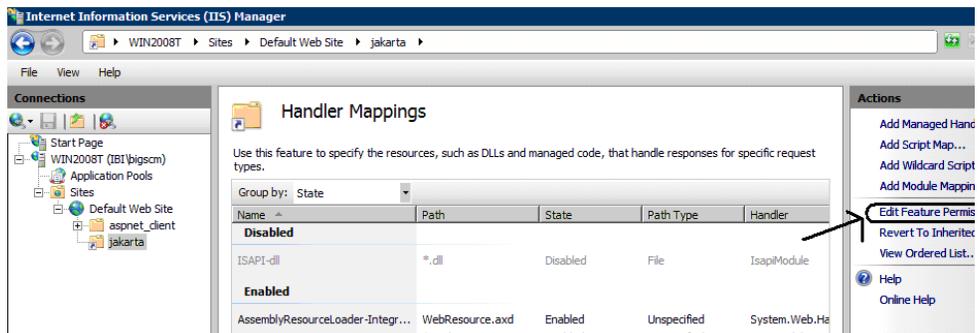
The Edit Feature Permissions dialog box opens.

27. Enable the Read, Script, and Execute permissions.

28. Click *OK*.

29. In the left pane, select the main host name node.

30. Double-click *ISAPI and CGI Restrictions* and click *Add*, as shown in the following image.
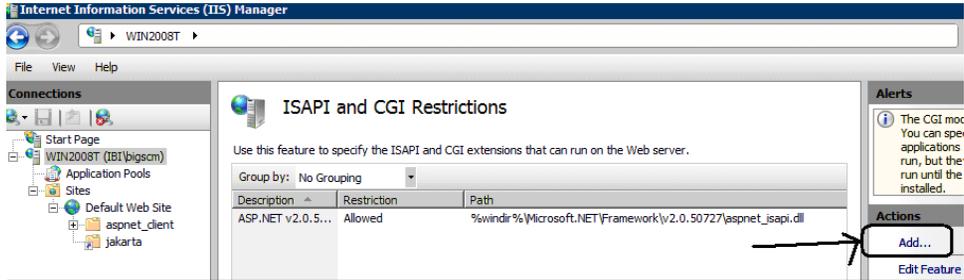
31. Add the location of the isapi_redirect.dll file (located in the bin directory) and select *Allow extension path to execute*, as shown in the following image.
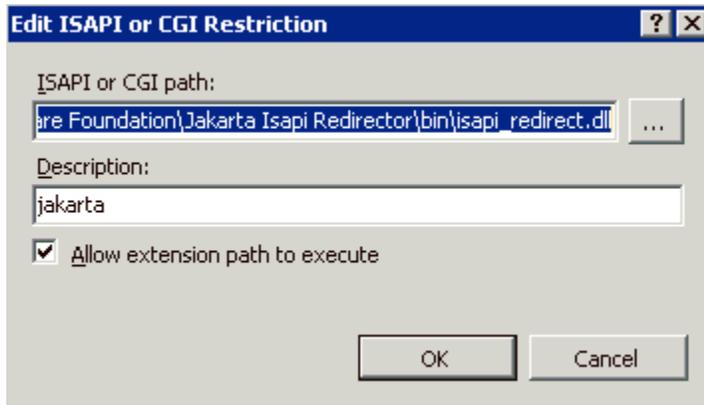
32. Click *OK*.

33. Recycle Apache Tomcat and Microsoft IIS version 7.x.

34. Start Apache Tomcat and Microsoft IIS version 7.x.

35. Open the WebFOCUS Home Page in a web browser by entering the following URL:

    `http://hostname:port/ibi_apps/`

Configuring IBM WebSphere

This topic explains how to modify the IBM WebSphere Application Server for use with WebFOCUS.

It is assumed that WebSphere components are installed and configured and that a WebSphere Application Server has been created for use with WebFOCUS.

The WebFOCUS web application (webfocus.war) requires a shared library in order to override certain libraries provided by WebSphere.

Procedure: **How to Create the WebSphere Application Server Shared Library**

1. Create a new directory to use for the shared library. This directory must be accessible by the WebSphere Application Server user. For example:

   mkdir *drive*:\ibi\shared

2. Copy the following files from the *drive*:\ibi\WebFOCUS82\webapps\webfocus\WEB-INF\lib \ directory to the directory created in step 1.

   ❏ jackson*.jar

   ❏ http*.jar

   ❏ javax.persistence*.jar

   ❏ eclipselink-*.jar

   ❏ commons-*.jar

   For example:

   Copy *drive*:\ibi\WebFOCUS82\webapps\webfocus\WEB-INF\lib\jackson*.jar *drive*:\ibi \shared\

3. Sign in to the WebSphere Console.

4. Expand *Environment* and then expand *Shared Libraries*, as shown in the following image.
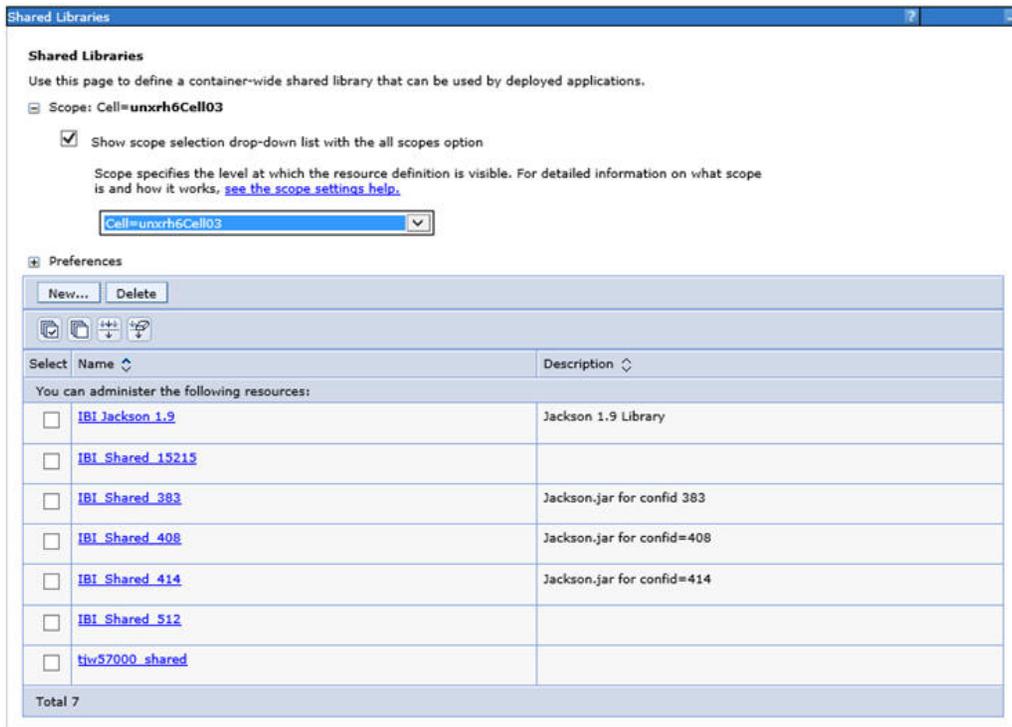
5. From the Scope drop-down list, select the scope for your environment and then click *New*.

The Shared Libraries dialog box opens, as shown in the following image.
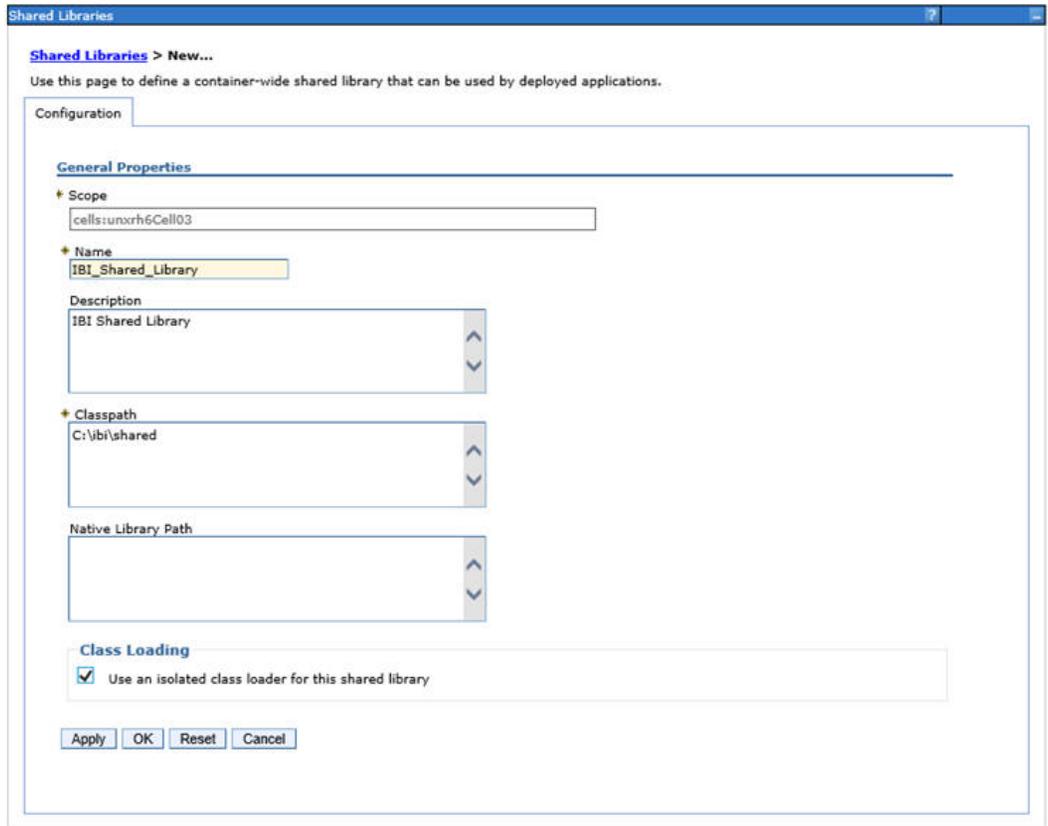
6. Provide the following values:

    ❏ Name: IBI_Shared_Library

    ❏ Classpath: *drive*:\ibi\shared

    ❏ Select *Use an isolated class loader for this shared library.*

7. Click *OK* and then click *Save*.

Procedure: **How to Update the WebSphere Application Server Java Settings**

The following additional settings are required by WebFOCUS.

1. Sign in to the WebSphere Console.

2. Expand *Servers*, *Server Types*, *WebSphere application servers*, *your server*, *Server Infrastructure*, *Java and Process Management*, *Process definition*, *Additional Properties*, and *Java Virtual Machine*.

The Application servers Java Virtual Machine dialog box opens, as shown in the following image.
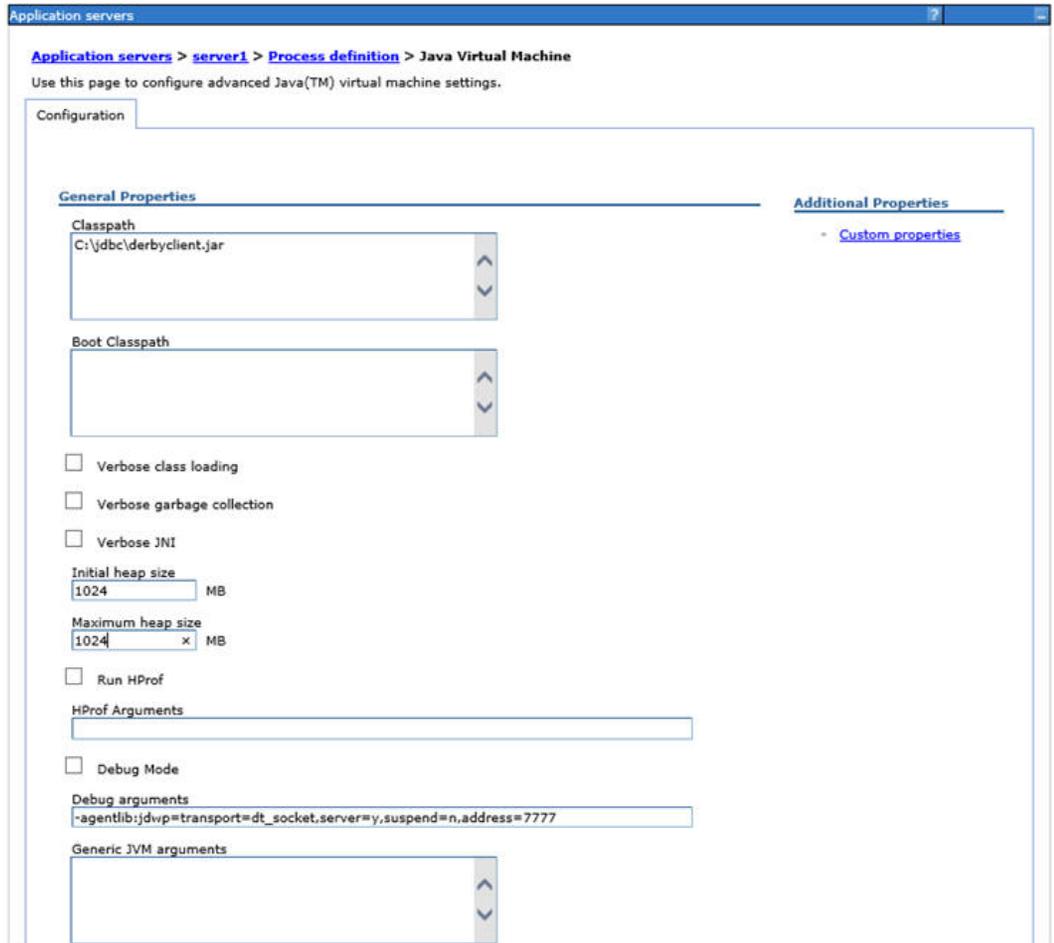
3. Update the following settings:

❏ In the Classpath field, add the full path and name of the JDBC driver jar files required to access the WebFOCUS Repository database. If there is more than one, type one per line.

❏ Change Initial Heap Size to at least 1024 (minimum, setting is in MB).

❑ Change Maximum Heap Size to at least 1024 (minimum, setting is in MB).

4. Click *OK*.

5. Expand *Servers*, *Server Types*, *WebSphere application servers*, *your server*, *Java and Process Management*, *Process definition*, *Java Virtual Machine*, *Custom properties*, and *New*.

   The Application servers General Properties dialog box opens, as shown in the following image.
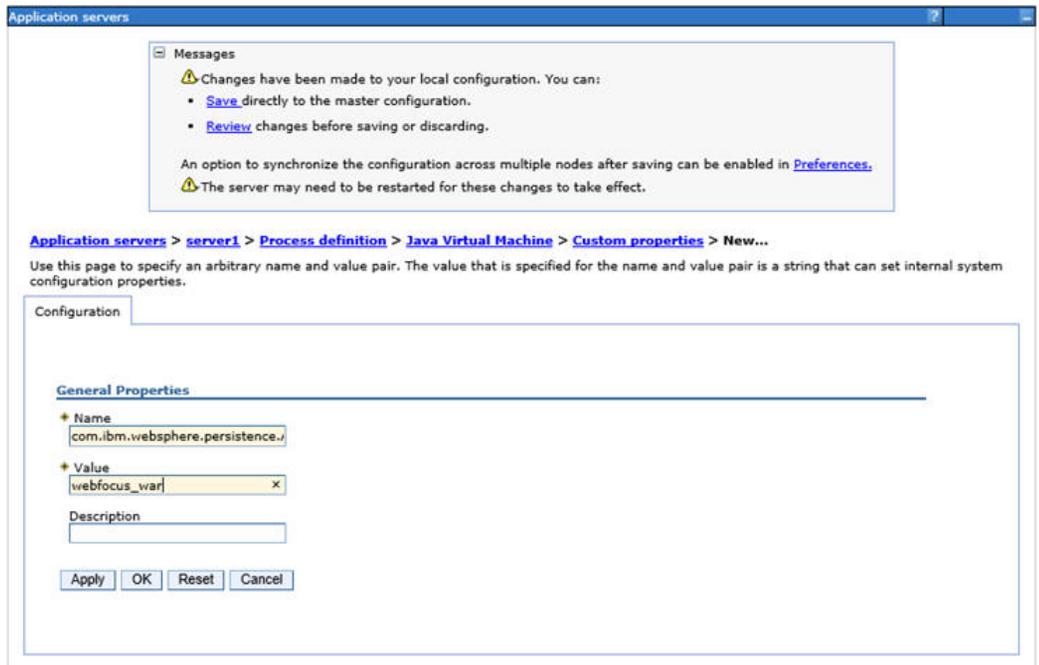
6. Update the following settings:

   ❑ Name: com.ibm.websphere.persistence.ApplicationsExcludedFromJpaProcessing

   ❑ Value: webfocus_war. This needs to match the name of the application when deployed. Modify this value to match the value you plan to use when deploying the webfocus.war web application.

7. Click *OK*.

8. Expand *Servers*, *Server Types*, *WebSphere application servers*, *your server*, *Container Settings*, *Web Container Settings*, *Web container*, *Custom properties*, and *New*.

The Application servers General Properties dialog box opens, as shown in the following image.
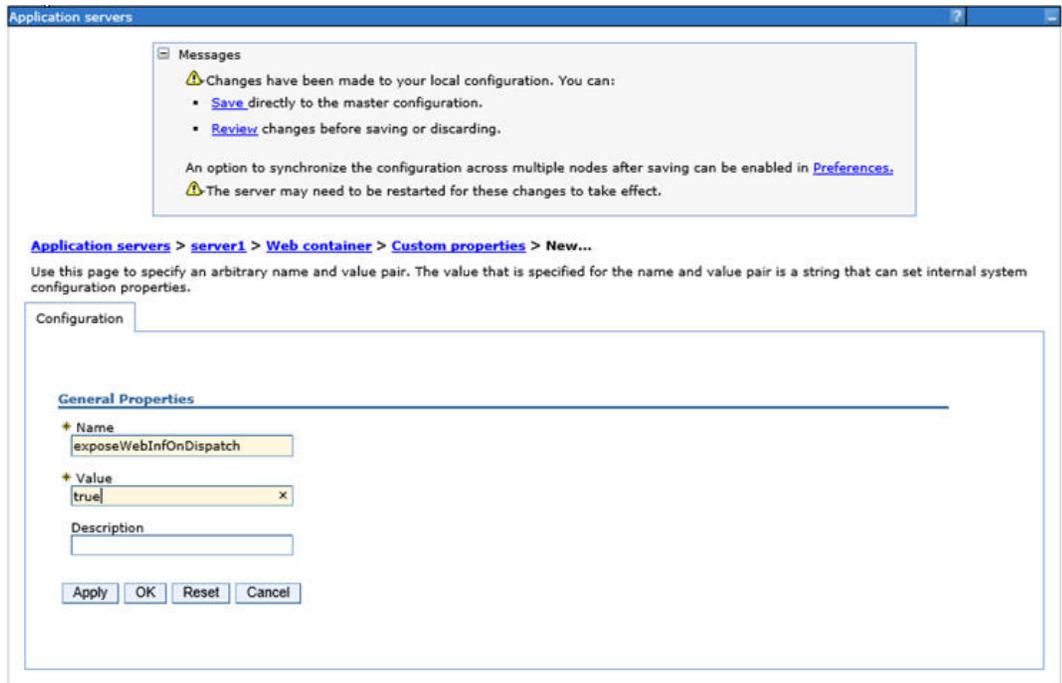
9. Update the following settings:

   ❏ Name: exposeWebInfOnDispatch

   ❏ Value: true

10. Click *OK*.

11. Expand *Servers*, *Server Types*, *WebSphere application servers*, *your server*, *Container Settings*, *Web Container Settings*, *Web container transport chains*, *WCInboundDefault*, *HTTP inbound channel*, *Custom properties*, and *New*.

The Application servers General Properties dialog box opens, as shown in the following image.
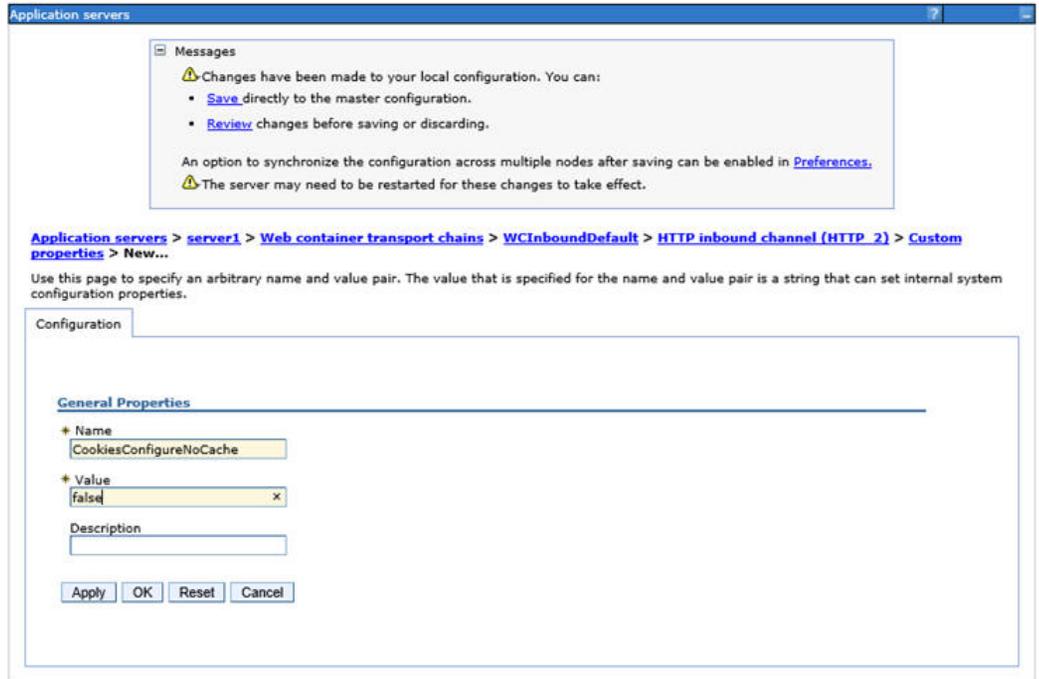
12. Update the following settings:

❏ Name: CookiesConfigureNoCache

❏ Value: false

13. Click *OK* and then click *Save*.

Procedure: **How to Verify the WebSphere Application Server is Configured to Run Java 1.8**

1. Sign in to the WebSphere Console.

2. Expand *Servers*, *Server Types*, *WebSphere application servers*, *your server*, *Server Infrastructure*, and *Java SDKs*.

The Application servers Java SDKs dialog box opens, as shown in the following image.
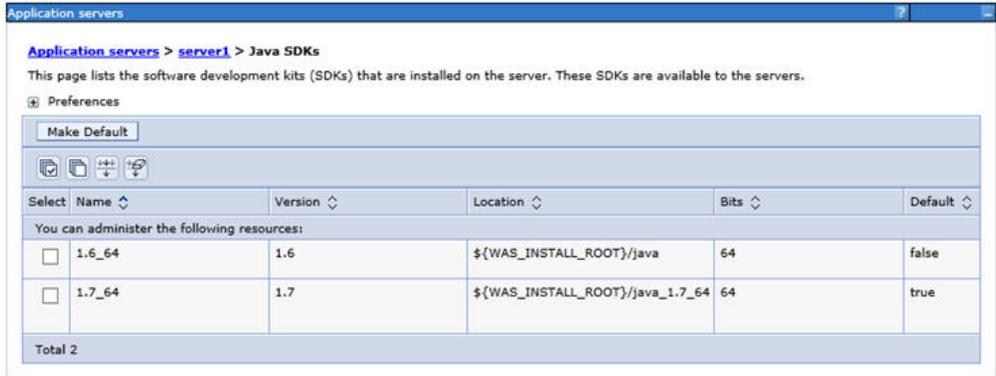
3. Verify that the Java 1.8 SDK, if present, is set to true. If not, contact your WebSphere Administrator and request your server be updated to 1.8.

Procedure: How to Assign the IBI_Shared_Library to the WebFOCUS Web Application (webfocus.war)

The following procedure assumes that the webfocus.war file has been deployed.

1. Sign in to the WebSphere Console.

2. Select *Applications*, *Application Types*, *WebSphere enterprise applications*, and your WebFOCUS web application, as shown in the following image.
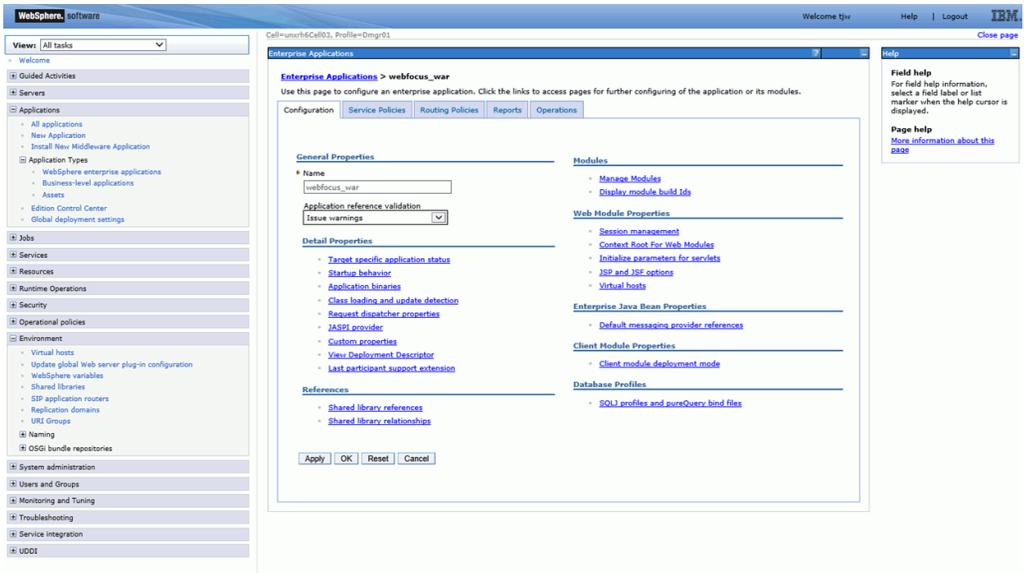
3. Select *Shared library references*.

   The Shared library references panel displays, as shown in the following image.
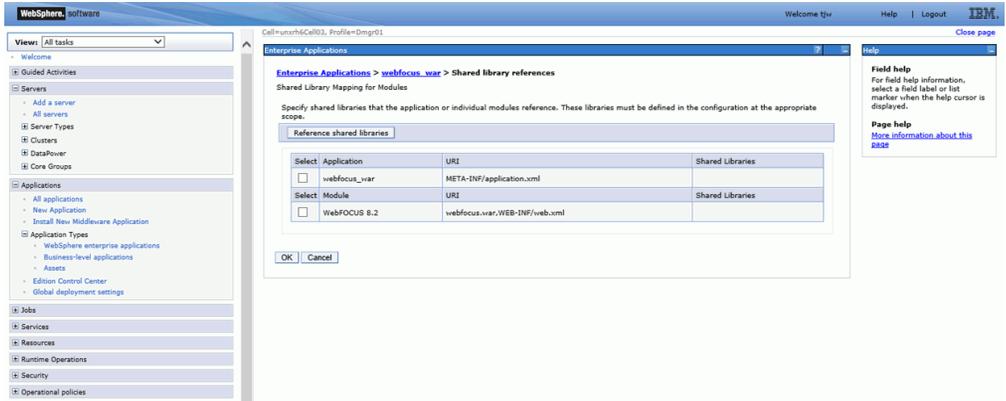
4. Select one of the entries in the table and click *Reference shared libraries*.

   Values populate in the Shared Libraries column, as shown in the following image.
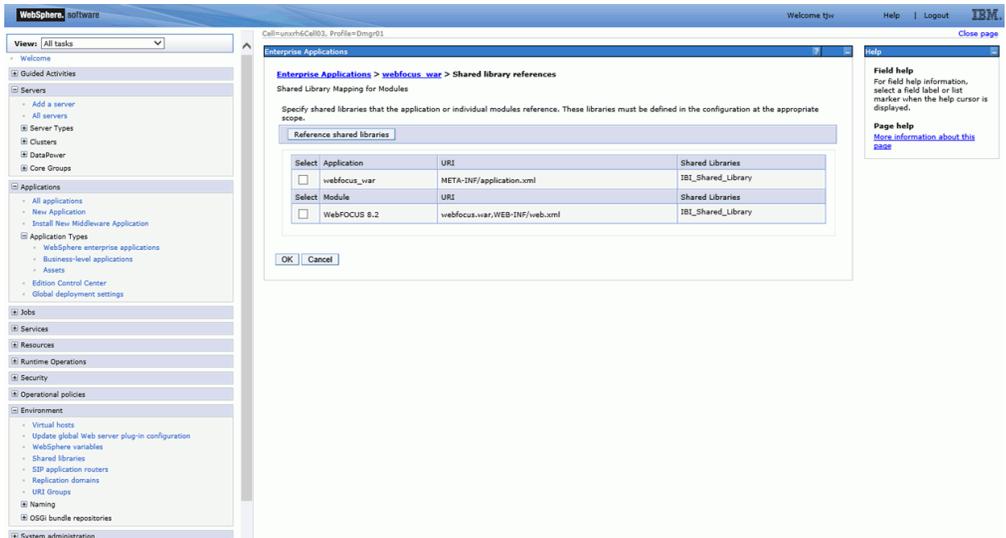
5. From the Available list, select *IBI_Shared_Library*, click the right arrow, and then click *OK*. Repeat for the second entry.

6. Click *OK*, and then click *Save*.

7. Restart the WebSphere Application Server.

> **Note:** It is not sufficient to only restart the WebFOCUS web application.

Configuring Oracle WebLogic

This section describes the pre-requisites and post-requisites for configuring the Oracle WebLogic® Application Server for use with WebFOCUS and ReportCaster. It is assumed that WebLogic components are installed and configured. For additional information, see the WebLogic documentation.

Java Version Requirement

In Release 8206, Java Version 8 is supported. The WebLogic server used to run the WebFOCUS client must be configured to use a release of Java Version 8 that is supported by the WebLogic version being used. Consult the WebLogic server documentation for supported Java releases and how to modify your Java version, if required.

Update Java Settings

Consult the WebLogic server documentation for instructions on where to place the updated settings in your environment.

❑ Java minimum memory settings: –Xms1024m –Xmx1024m

❑ Classpath: Add the full path and name of the JDBC driver jar files required to access the WebFOCUS Repository database.

❑ Temp directory: To avoid potential conflicts, your Java temporary directory should point to a unique location. Create an empty directory on a local filesystem that is writeable to the user that the WebLogic Server is running as, and then set the following Java variable:

–Djava.io.tmpdir=*fullpath**yourprivatetmpdir*

For example, if you are on a Windows system using a standalone WebLogic domain and the startWebLogic.cmd script to start it, you could insert the following into the *domain-directory*\bin\setDomainEnv.cmd script beginning on the second line:

```
set USER_MEM_ARGS="–Xms1024m –Xmx1024m"
set PRE_CLASSPATH="C:\ibi\derby\lib\derbyclient.jar"
set JAVA_OPTIONS="-Djava.io.tmpdir=C:\yourprivatetmpdir"
```

WebLogic Post-Installation Step

Prior to deploying the webfocus.war web archive to WebLogic, you must perform the following steps.

1. Create a file called weblogic.xml in the ..\ibi\WebFOCUS82\webapps\webfocus\WEB-INF directory with the following:

```
<?xml version="1.0" encoding="UTF-8"?>
<wls:weblogic-web-app
xmlns:wls="http://xmlns.oracle.com/weblogic/weblogic-web-app"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/ejb-jar_3_0.xsd
http://xmlns.oracle.com/weblogic/weblogic-web-app
http://xmlns.oracle.com/weblogic/weblogic-web-app/1.4/weblogic-web-
app.xsd">

<wls:container-descriptor>
  <wls:prefer-application-packages>
    <wls:package-name>org.bouncycastle.util</wls:package-name>
    <wls:package-name>org.apache.commons</wls:package-name>
    <wls:package-name>org.opensaml</wls:package-name>
    <wls:package-name>org.eclipse.persistence</wls:package-name>
  </wls:prefer-application-packages>
 </wls:container-descriptor>
</wls:weblogic-web-app>
```

2. Recreate the webfocus.war web archive and call the new archive ibi_apps.war, the following assumes the jar command is in your path and that you want to use /ibi_apps as your WebFOCUS context root:

   a. cd …\ibi\WebFOCUS82\webapps\webfocus

   b. jar cf ..\ibi_apps.war .

3. Deploy the ibi_apps.war archive in place of the webfocus.war.

Chapter **5** Post-Installation Verification and Configuration

This chapter explains how to verify that WebFOCUS and ReportCaster are installed properly. It also includes basic configuration procedures.

In this chapter:

❏ WebFOCUS Client Post-Installation Tasks

❏ WebFOCUS Repository Post-Installation Tasks

WebFOCUS Client Post-Installation Tasks

This chapter explains verification and common configuration procedures for the WebFOCUS Client.

Adding WebFOCUS Licenses

Licenses for WebFOCUS components (for example, ReportCaster) are managed through the WebFOCUS Administration Console. When additional WebFOCUS components are purchased, you must add the new license code using the License Management facility.

Procedure: **How to Add WebFOCUS Licenses**

To add WebFOCUS licenses:

1. Sign in to the WebFOCUS Administration Console.

2. From the Administration Console menu bar, select *Licenses* and then *WebFOCUS Client*.

   The License Information dialog box opens.

3. Click *New License Key*.

4. Enter your license and site code, and then click *Validate*.

5. Restart the Application Server and ReportCaster Distribution Server for the changes to take effect.

Configuring WebFOCUS in a Split Web-Tier and Application Server-Only Environment

In a split web-tier environment, all WebFOCUS web components run through the application server, and you should not create the ibi_html and approot aliases on a web server. Instead, you can configure your application server to serve the content in the *drive*:\ibi\apps directory.

WebFOCUS In a Split Web-tier Configuration
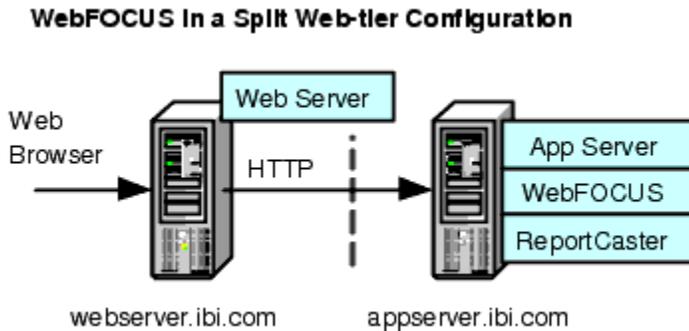
The steps for configuring WebFOCUS to run only in an application server configuration is similar to split web-tier, in that you configure the application server to serve static content from the ibi_html and apps directories.

The one difference is where the ReportCaster Default Library URL is pointing. With split web-tier, this setting points to the web server. In an application server-only configuration, it points to the application server.

Using the Static Content Server Option

WebFOCUS installs a pair of web applications into the *drive*:\ibi\WebFOCUS82\webapps directory, which are designed to serve static content from the file system to the browser:

❏ approot.war. Serves content from the *drive*:\ibi\apps directory.

❏ ibi_html.war. Serves content from the *drive*:\ibi\WebFOCUS82\ibi_html directory.

Deploy one or both of these applications to address the following split web-tier and stand-alone application server configurations:

❏ The web server is unable to access the static content because it is located on the application server machine.

❏ There is no web server and you wish to use an application server by itself.

   Note: Tomcat can be used by itself without these applications because it can map a directory on the file system to a context path. This configuration is referred to as the Tomcat Stand-alone option and can be configured during installation on Windows.

Information Builders

Each application includes a deployment descriptor (webconfig.xml) that is used to locate the directory containing its configuration file. The context parameter *IBI_Configuration_Directory* in webconfig.xml is updated during installation to point to *drive*:/ibi/WebFOCUS82/config, which contains the configuration file approotConfig.xml. The configuration file is shared by both content server applications even though its name suggests it would be used by only one. The configuration file is used to maintain MIME mappings, the physical path of the directories being served, and the logging level.

The applications also include a Log4J property file (log4j.xml), which contains the path to the log file used by each application. The installation updates each log4j.xml file with the path to its own log file, *drive*:/ibi/WebFOCUS82/logs/wfapproot.log and *drive*:/ibi/WebFOCUS82/logs/wfibihtml.log, respectively.

The content server applications roll the log files over daily by appending the date to the log file and creating a new one (for example, wfibihtml.log.2017-01-01). You can increase the log level by editing *drive*:/ibi/WebFOCUS82/config/approotConfig.xml and changing the log level setting to *DEBUG*, *INFO*, *WARN*, *ERROR*, or *FATAL*, where DEBUG is the most verbose.

There are special considerations for using the content server option in a clustered web-tier environment.

Reference: **Using the IBIARCFG and IBIARLOG –D Options With the Content Server Web Applications**

Generally speaking, the approach of specifying a fully qualified path to the configuration file (approotConfig.xml) in webconfig.xml and of specifying a fully qualified path to the log files in log4j.xml is sufficient for most installations. These paths are properly set during installation.

However, there is an option to pass the content servers these paths from the Java VM command line. To do this, complete the following steps:

1. Edit the WebFOCUS webconfig.xml file found inside both the approot.war and ibi_html.war files. Replace the fully qualified path defined in the IBI_Configuration_Directory parameter with the notation shown below.

```
<context-param>
    <param-name>IBI_Configuration_Directory</param-name>
    <param-value>${IBIARCFG}</param-value>
</context-param>
```

2. Edit the WebFOCUS log4j.xml file located in the approot.war file and replace the fully qualified path specified by the File parameter, as follows:

```
<param name="File" value="${IBIARLOG}/wfapproot.log"/>
```

Use a forward slash, even on Windows systems.

3. Edit the WebFOCUS log4j.xml file located inside the ibi_html.war file and replace the fully qualified path specified by the File parameter, as follows:

```
<param name="File" value="${IBIARLOG}/wfibihtml.log"/>
```

Use a forward slash even on Windows systems.

4. Add the following –D options in the manner appropriate for the Java VM for your application server.

The settings below are slightly different in a clustered web-tier environment.

```
–DIBIARCFG=install_directory/ibi/WebFOCUS82/config
–DIBIARLOG=install_directory/ibi/WebFOCUS82/logs
```

WebFOCUS Client Verification and Configuration

To configure the WebFOCUS Client, edit files either through a text editor or the WebFOCUS Administration Console. The WebFOCUS Administration Console also provides tools to verify the installation.

For NLS configuration information, see the *WebFOCUS Security and Administration* manual.

Accessing the WebFOCUS Home Page

WebFOCUS 8.2 contains a Home Page from which you can access WebFOCUS interfaces, such as the WebFOCUS Administration Console.

Procedure: **How to Access the WebFOCUS Home Page**

1. Ensure that the web or application servers are started and configured.

2. Using a browser, navigate to the following page:

```
http://hostname:port/ibi_apps/
```

where:

```
hostname:port
```

Are the host name and HTTP port of the web server or application server. For Tomcat stand-alone configurations, the default is *hostname*:8080. If you require SSL, use *https* instead of *http*.

Information Builders

The WebFOCUS Sign In page opens, as shown in the following image.

Note: If you receive a *page not found* error, ensure that your application server is started and that you have deployed the WebFOCUS application. For more information on configuring your application server, see *Installing the WebFOCUS Client* on page 49.

3. Enter the following default credentials:

   ❏ User Name: *admin*

   ❏ Password: *admin*

   Note: If you receive an *invalid user name or password* error, ensure that the WebFOCUS repository has been created and contains initial table data.

4. Click *Sign In*.

The WebFOCUS Home Page displays, as shown in the following image.
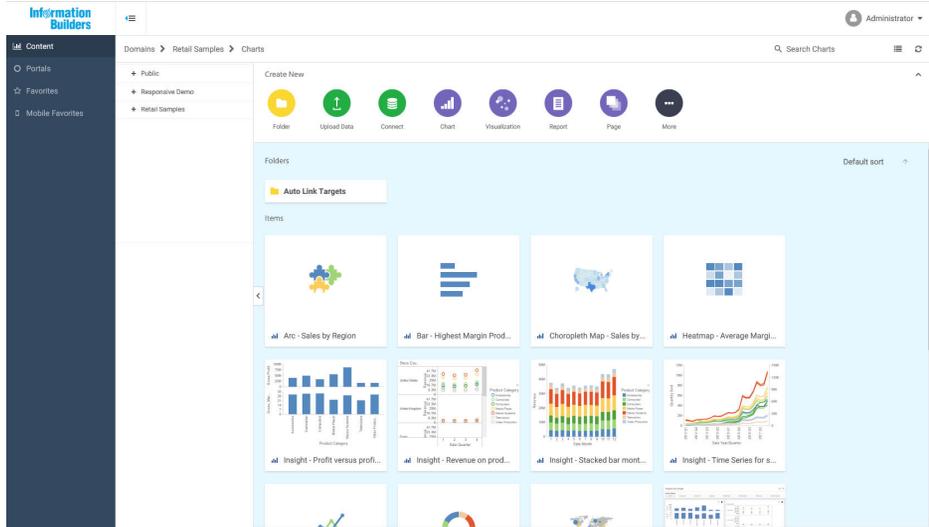
You can change the default credentials using the Security Center facility. Click *Administration* from the top menu, and then select *Security Center*. For more information, see the *WebFOCUS Security and Administration* manual.

Accessing the WebFOCUS Administration Console

You can access the WebFOCUS Administration Console from the WebFOCUS Home Page, or you can access the WebFOCUS Administration Console directly from the browser by supplying its URL.

Procedure: **How to Access the WebFOCUS Administration Console**

1. Ensure that the web server and application server are started and configured.

2. Sign in to the WebFOCUS Home Page, click *Administration* from the top menu, and select *Administration Console*, as shown in the following image.
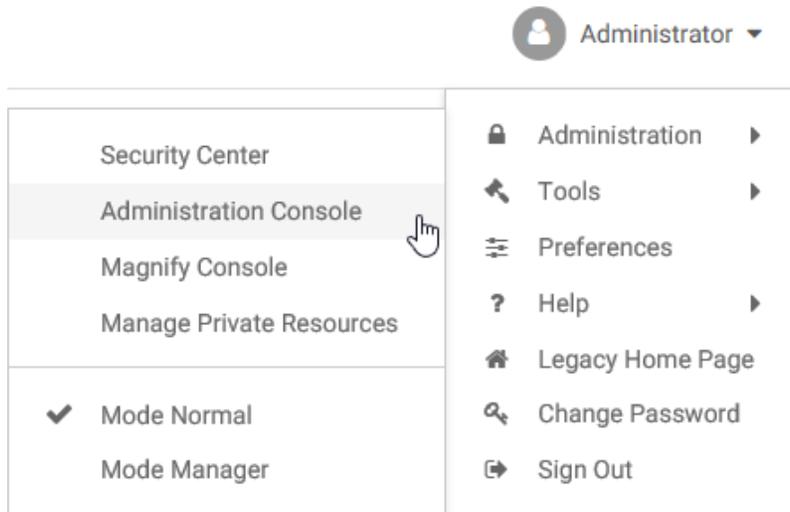
If you are using Windows, you can also select *WebFOCUS Administration Console* from the WebFOCUS 82 folder, under the Information Builders app.

You can also manually enter the following URL in your browser:

`http(s)://machine:port/context/admin`

where:

`machine`

> Is the network ID of your computer.

`port`

> Is the number of the port that connects your computer to the server hosting WebFOCUS.

`context`

> Is the local address for WebFOCUS. For example, *ibi_apps*.

The WebFOCUS Sign In page opens, as shown in the following image.
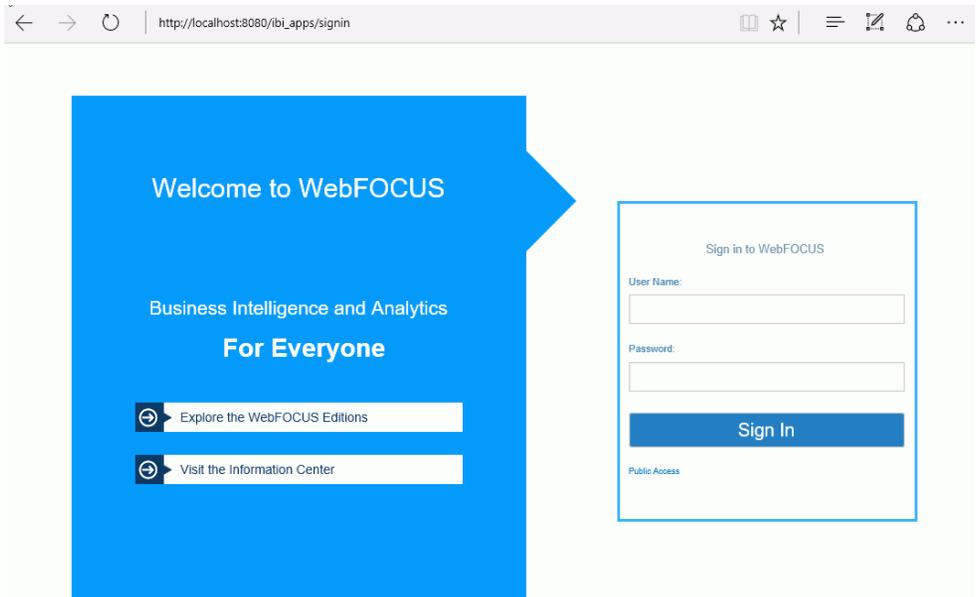
If a sign-in page does not appear, ensure that your web server and application server are started and configured.

3. Sign in using an administrator user ID. By default, *admin* is a valid administrator ID, and the password is *admin*.

    Note: After you have verified the WebFOCUS Client configuration, change the password of the default administrator user ID, which is *admin*. For more information on WebFOCUS Client security, see the *WebFOCUS Security and Administration* manual.

The WebFOCUS Administration Console opens, as shown in the following image.
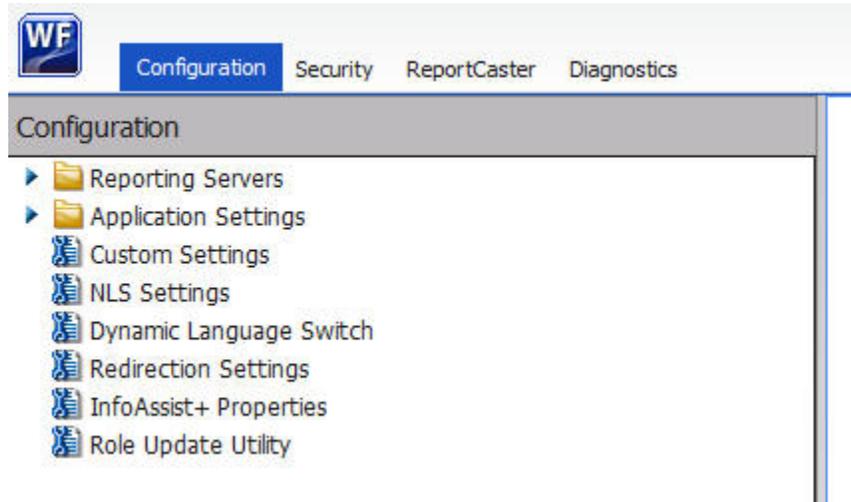
Using this console, you can edit the WebFOCUS Client communication and security settings. This console is documented in the *WebFOCUS Security and Administration* manual and relevant sections are available by clicking *Help*.

Running the Verification Tool

The WebFOCUS Administration Console contains a verification tool to further test the configuration. You may have already run the verification tool if you chose the option to configure Tomcat during the WebFOCUS Client installation.

Procedure: ## How to Run the Verification Tool

1. Select the *Diagnostics* tab.

2. Click *Client Verification.*

3. Review the test results and troubleshoot accordingly.

   For troubleshooting assistance, see *Troubleshooting WebFOCUS and ReportCaster* on page 161.

Setting WebFOCUS Administration Console Authentication

It is a good idea to set authentication for the WebFOCUS Administration Console. The WebFOCUS Administration Console does not have its own authentication mechanism and by default, none is used.

If you wish to set authentication for the console, you can choose to do this through the WebFOCUS Reporting Server or the web server. For more information, see the *WebFOCUS Security and Administration* manual.

Defining Communications to WebFOCUS Reporting Servers

WebFOCUS Client communication settings are stored in the following file:

drive`:\ibi\WebFOCUS82\client\wfc\etc\odin.cfg`

This file contains node blocks defining WebFOCUS Reporting Servers that the client accesses. A node block is a set of parameters that define a server, listener, or other communication component.

When you installed the WebFOCUS Client, you specified a default WebFOCUS Reporting Server that the client accesses.

To change connection information for the default server or define additional servers, use the procedures that follow.

Procedure: ## How to Define WebFOCUS Reporting Servers

1. On the left pane of the WebFOCUS Administration Console, expand *Reporting Servers*.

2. Expand *Server Connections*.

   The left pane displays all defined WebFOCUS Reporting Servers. To edit parameters of a defined WebFOCUS Reporting Server, right-click the node and select *Edit*.

3. To define an additional node, right-click *Server Connections* and select *New*.

4. Enter a unique name for the new node. Use this name when you wish to access the server.

   This page lets you choose to define a single server (*Client*), *CLM Processing*, or a *Cluster* node. A cluster node is a node that consists of multiple servers. When the client accesses the cluster, it chooses one of the servers in that cluster. This is used for load balancing and failover. The best way to use clusters is through the Cluster Manager component that you can optionally add to your WebFOCUS environment.

5. Click *Next*.

6. Complete the HOST and PORT fields.

   The remaining fields are optional in most environments.

   Note: Setting the User ID and Password here is not recommended and may not have the desired result.

7. Click *Save*.

8. On the top of the page, click *Clear Cache* so your changes take effect.

Procedure: **How to Set the Default WebFOCUS Reporting Server**

When you make a connection from client to server without specifying a server, the default server is used. The default server and many other settings are set in the following file:

drive`:\ibi\WebFOCUS82\client\wfc\etc\cgivars.wfs`

1. From the Administration Console, select the *Configuration* tab, expand *Reporting Servers*, and then expand *Server Connections*.

2. Right-click the node name and select *Set as Default*.

3. On the Administration Console menu bar, click *Clear Cache*.

Enabling Active Technologies

Although most WebFOCUS Client features are configured through the WebFOCUS Administration Console, some features are enabled and configured through the WebFOCUS Reporting Server. If you license Active Technologies, you must provide the Active Technologies license code in the WebFOCUS Reporting Server Web Console.

Procedure: **How to Enable Active Technologies**

1. Sign in to the WebFOCUS Reporting Server Web Console.

2. Click the *Workspace* tab.

3. Click *License* on the ribbon.

4. Type your Active Technologies license in the *license_active_report* field, and click *Save and Restart Server*.

Active Technologies for Adobe Flex Consideration

The Flex Software Development Kit (SDK) is no longer shipped with the WebFOCUS Reporting Server.

If you use the FLEX or APDF output formats, you must download your own version of the Flex SDK from *http://flex.apache.org* and include *FlexSDK_download_location/lib/flex-compileroem.jar* file in your CLASSPATH setting in edaenv.cfg. In addition, you must copy the arFlexLib.swc from $EDAHOME/etc to the FlexSDK_download_location/frameworks/libs directory prior to server startup. For more information, contact your system administrator.

Setting Tomcat HTTP POST Maximum Size

As a default, Apache Tomcat sets the maximum size limit to 2097152 (2MB) limit for accepting HTTP POST requests. Since EXL07 MIME files can easily reach this limit, ExcelServlet will fail with a HTTP 400 error or produce a corrupted .XLSX file. To fix this problem, Tomcat needs to be configured by setting an attribute in the server.xml file.

In the */tomcat_home/*conf/server.xml file, add the maxPostSize attribute and set it to -1 to disable the limit check. The following example demonstrates this with the <Connector port> element block:

```
<Connector port="8080" protocol="HTTP/1.1"
connectionTimeout="20000"
redirectPort="8443" maxPostSize="-1" />
```

WebFOCUS Repository Post-Installation Tasks

This section explains how to create the WebFOCUS Repository and verify the WebFOCUS Client configuration.

For NLS configuration information, review this section and consult the *WebFOCUS Security and Administration* manual.

WebFOCUS Repository Table Creation

The table creation utility creates or drops and creates all Repository tables. To drop and re-create only specific table groups, you can use utilities available with your database software. This is useful if you wish to remove all library data, but keep your schedules and address books.

Since the WebFOCUS Repository has been restructured as of WebFOCUS 8.2 and is different from previous WebFOCUS releases, you must create a new Repository when migrating from earlier WebFOCUS 7.7.x versions. For more information on migrating existing ReportCaster data, see the *Migration* manual.

Procedure: How to Create the Repository Tables

To create the Repository tables:

1. Navigate to the following directory:

    drive:\ibi\WebFOCUS82\utilities\WFReposUtil

Note: During installation, if the Create WebFOCUS Repository check box is selected, then the installer will run the WFReposUtilCMDLine.bat file in CREATE_INSERT mode. If any errors occur during this process, you can view the WFReposUtilCMDLine.log file for details. If the Create WebFOCUS Repository check box is not selected during installation (in the case of an existing Repository), then you must manually run the WFReposUtilGUI.bat file in DROP_CREATE_INSERT mode. Alternatively, you can run the WFReposUtilCMDLine.bat file in DROP_CREATE_INSERT mode.

2. Run the *WFReposUtilCMDLine.bat* file by right-clicking the file and selecting the *Run as Administrator* option.

   This utility creates a .log file with the same name in the same location after running it.

   A Command Window opens, which allows you to create tables or to drop and re-create tables.

3. Enter a selection from the list of available options:

   ❏ create

   ❏ create_or_extend

   ❏ insert

   ❏ create_insert

   ❏ update

   ❏ drop

   ❏ extract

   ❏ create_ddl

   ❏ quit

4. Press Enter to continue.

   A prompt for credentials displays. These are credentials for the database connection.

   Note:

   ❏ If updates are performed, the User ID needs to have permissions to create and alter tables.

   ❏ Depending on the option selected, you may be prompted for WebFOCUS Administrator credentials.

A message appears if any errors occur during the Repository creation or re-creation process.

Chapter

6

WebFOCUS ReportCaster Post-Installation Tasks

This section explains ReportCaster post-installation tasks.

In this chapter:

❏ ReportCaster Verification

❏ Importing and Exporting the ReportCaster Configuration File

❏ ReportCaster Configuration

ReportCaster Verification

After the repository is created, you should test the WebFOCUS Client and the ReportCaster configuration.

If you have problems with the verification, see *Troubleshooting WebFOCUS and ReportCaster* on page 161.

Make sure you have carried out the procedures in the preceding chapters before starting the Distribution Server.

Before starting or testing the Distribution Server, components it communicates with must be started. These include the following:

❏ Web server

❏ Application server where the WebFOCUS web application is deployed

❏ WebFOCUS Reporting Server

❏ Database Server containing WebFOCUS Repository tables

❏ Mail Server

❏ FTP Server (if using FTP)

Testing the WebFOCUS Client

This section describes how to test the WebFOCUS Client.

Procedure: **How to Test the WebFOCUS Client**

1. Ensure the web and application servers are started and configured.

2. Go to the following page using a browser:

   `http://`*`hostname:port`*`/ibi_apps/`

   where:

   `hostname:port`

   > Are the host name and HTTP port of the web server or application server. For Tomcat stand-alone configurations, the default is *hostname*:8080. If you require SSL, use *https* instead of *http*.

   The WebFOCUS Sign In page opens.

   Note: If you receive a *page not found* error, ensure that your application server is started and that you have deployed the WebFOCUS application. For more information on configuring your application server, see *Installing the WebFOCUS Client* on page 49.

3. Enter the following default credentials:

   ❏ User Name: *admin*

   ❏ Password: *admin*

   Note: If you receive an *invalid user name or password* error, ensure that the WebFOCUS repository has been created and contains initial table data.

4. Click *Sign In*.

   The WebFOCUS Home page opens.

   You can change the default credentials using the Security Center facility. To do this, click *Administration* from the top menu and then click *Security Center*. For more information, see the *WebFOCUS Security and Administration* manual.

Starting and Stopping the ReportCaster Distribution Server

This section describes how to start and stop the ReportCaster Distribution Server.

Procedure: **How to Test the WebFOCUS Repository Connectivity Settings**

To verify, change, or test the Repository connectivity settings:

1. Sign in to the WebFOCUS Administration Console.

Information Builders

2. On the Configuration tab, confirm that the Repository configuration settings are correct, as follows:

   a. Under the Configuration tab, expand *Application Settings*, and then click *Repository*.

      The right pane displays the Repository database parameters.

   b. Review the settings and make changes, if needed.

   c. Click *Save*.

3. Restart ReportCaster and the Distribution Server, as follows:

   a. On the ReportCaster tab, click *Restart*.

      A confirmation window opens.

   b. Click *Yes*.

4. On the Server Status pane, verify that ReportCaster is running in full function mode.

Verifying ReportCaster

After the ReportCaster Distribution Server is started, test the ReportCaster configuration by accessing ReportCaster interfaces.

Procedure: How to Verify ReportCaster Distribution Server Startup

1. Start the ReportCaster Distribution Server and all related components, if they are not started.

2. Sign in to the WebFOCUS Business Intelligence (BI) Portal, then select *ReportCaster Status* from the Tools menu.

   The ReportCaster Console opens, as shown in the following image.

3. Verify that the Distribution Server is started on the host and port specified in your configuration.

Importing and Exporting the ReportCaster Configuration File

It is important to note that if you are installing a later version of WebFOCUS, but intend to use an existing repository from any earlier version of WebFOCUS 8.2, you may need to run the following utilities in order to update the dserver.xml, rc_preference.xml, and sendmodes.xml files:

❑ exportcfg and importcfg

❑ exportrcpref and importrcpref

❑ exportsndmode and importsndmode

Note: Each utility will create a *utility_name*.log file in the ...ibi\WebFOCUS82\ReportCaster\log directory, where *utility_name* is the name of the utility.

dserver.xml

The ReportCaster configuration file (dserver.xml) is placed in a WebFOCUS repository table during installation. Changes to this file can be made using the ReportCaster Configuration tool and the WebFOCUS Administration Console. You can export the dserver.xml file from the WebFOCUS repository to your file system or import the dserver.xml file from your file system to the WebFOCUS repository.

To export the dserver.xml file to your file system, run the *exportcfg* utility, which is located in the following directory:

ibi\WebFOCUS82\ReportCaster\bin

The dserver.xml file will be exported to the following directory:

ibi\WebFOCUS82\ReportCaster\cfg

To import the dserver.xml file from your file system, copy the dserver.xml file to the following directory:

ibi\WebFOCUS82\ReportCaster\cfg

Run the *importcfg* utility, which is located in the following directory:

ibi\WebFOCUS82\ReportCaster\bin

rc_preference.xml

The ReportCaster user interface control file (rc_preference.xml) is placed in a WebFOCUS repository table during installation. You can export the rc_preference.xml file from the WebFOCUS repository to your file system or import the rc_preference.xml file from your file system to the WebFOCUS repository.

To export the rc_preference.xml file to your file system, run the *exportrcpref* utility, which is located in the following directory:

```
ibi\WebFOCUS82\ReportCaster\bin
```

The rc_preference.xml file will be exported to the following directory:

```
ibi\WebFOCUS82\ReportCaster\cfg
```

To import the rc_preference.xml file from your file system, copy the rc_preference.xml file to the following directory:

```
ibi\WebFOCUS82\ReportCaster\cfg
```

Run the *importrcpref* utility, which is located in the following directory:

```
ibi\WebFOCUS82\ReportCaster\bin
```

sendmodes.xml

The file that contains the list of ReportCaster formats and mime types (sendmodes.xml) is placed in a WebFOCUS repository table during installation. You can export the sendmodes.xml file from the WebFOCUS repository to your file system or import the sendmodes.xml file from your file system to the WebFOCUS repository.

To export the sendmodes.xml file to your file system, run the *exportsendmode* utility, which is located in the following directory:

```
ibi\WebFOCUS82\ReportCaster\bin
```

The sendmodes.xml file will be exported to the following directory:

```
ibi\WebFOCUS82\ReportCaster\cfg
```

To import the sendmodes.xml file from your file system, copy the sendmodes.xml file to the following directory:

```
ibi\WebFOCUS82\ReportCaster\cfg
```

Run the *importsendmode* utility, which is located in the following directory:

`ibi\WebFOCUS82\ReportCaster\bin`

ReportCaster Configuration

ReportCaster configuration parameters are managed within the ReportCaster Console Configuration tab. For additional ReportCaster configuration information, see the *ReportCaster* manual.

Configuring the Memory Available for the ReportCaster Log Report

The size of the ReportCaster log report is limited by the amount of memory available to the Java VM. When the memory of the Java VM is exceeded, a Java OutOfMemoryException error occurs.

To control the size of the log report, you can set the following ReportCaster Server Configuration tool parameters:

❏ In the Distribution Servers folder, Max Messages per Task from Data Server limits the number of messages written to the log file. The default value is 1000.

❏ In the Log Settings folder, Log Purge Period designates the number of days in which the logs will be purged. The default value is every 30 days.

Configuring the Heap Size for the ReportCaster Distribution Server

If the ReportCaster Distribution Server experiences a Java out of memory error, you must increase the amount of memory (heap size) available to Java on the Distribution Server. This is done by passing parameters on the Java command line, as follows:

`java -Xms<initial heap size> -Xmx<maximum heap size>`

For example,

`java -Xms1024m -Xmx2048m`

In addition:

❏ If the Distribution Server is running on Windows from the command line, then edit the schbkr file located in the ReportCaster bin directory.

❏ If the Distribution Server is running as a Windows service, then use the Registry Editor to change the value of the JvmMs and JvmMx registry keys.

You must restart the Distribution Server to enable this change.

Configuring ReportCaster Failover and Workload Distribution

The Distribution Server Failover feature allows you to configure a backup Distribution Server that can resume ReportCaster operations when there is an interruption (planned or unplanned) in the primary Distribution Server service. The primary Distribution Server is monitored to verify that it is operational. If there is an interruption in service, the failover Distribution Server is triggered to take over the role of the primary server.

The Workload Distribution feature allows ReportCaster to distribute scheduled jobs across multiple Distribution Servers, providing an efficient and fast way to process large numbers of ReportCaster schedules. Multiple Distribution Servers can be installed on one or more hosts. One instance is designated as the Workload Manager, while the others are designated as Workers. The WebFOCUS Repository will be shared by the Workload Manager and the Workers. Workload Distribution is set up through the ReportCaster Configuration tool. All servers will share one set of configuration information, and the Workload Manager will push any configuration changes to the Workers.

For your application of ReportCaster, you can configure either Failover or Workload Distribution, or both at the same time. The following procedure includes instructions to configure both, but notes when to skip to the appropriate steps if you are only configuring one or the other.

Procedure: **How to Configure Distribution Server Failover**

To configure distribution server failover:

1. Open the ReportCaster Console and click *Configuration* in the top pane.

2. Click the *Distribution Servers* folder in the left pane.

3. Click the button to the right of the Secondary Distribution Server field.

   The Secondary Distribution Server dialog box opens.

4. Select the *Enabled* check box.

5. Enter the host name and port number of the Secondary server.

6. Click *OK*.

7. Click *Save* and then *OK* when you are prompted to save.

8. Install the Distribution Server on the specified host with the specified port number for that host.

Procedure: **How to Configure Workload Distribution**

To configure workload distribution:

1. Open the ReportCaster Console and click *Configuration* in the top pane.

2. Click the *Distribution Servers* folder in the left pane.

3. Click the button to the right of the Workload Distribution field.

    The Workload Distribution dialog box opens.

4. Select the *Enabled* check box.

5. Click *Add*.

6. Double-click the *Worker Name*, *Worker Distribution Server Host*, and *Worker Distribution Server Port* fields to add the new Worker Distribution Server.

    Repeat this step for each Worker Distribution Server instance that you want to add.

7. Click *OK*.

8. Click *Save* and then *OK* when you are prompted to save.

9. Install the Distribution Server on each of the specified hosts with the specified port number for that host.

Adding Support for UTF-8 to the Distribution Server

Support for UTF-8 can be added to the Distribution Server by adding -Dfile.encoding=UTF8 to the Distribution Server Java command. If the Distribution Server is being run from the command line, modify the schbkr bat or script file and add -Dfile.encoding=UTF8 to the Java command. If the Distribution Server is being run as a Windows Service, modify the Windows registry by accessing

```
HKEY_LOCAL_MACHINE\SOFTWARE\InformationBuilders\ReportCaster\WFXXXX
\Parameters\Java
```

and adding the following to the Options string:

```
-Dfile.encoding=UTF8
```

where:

WFXXXX

Is the release number in which you are working.

Important Configuration Considerations When the Distribution Server is Installed Separately From the WebFOCUS Client

When the ReportCaster Distribution Server is installed as a stand-alone server, on a machine that is separate from the WebFOCUS Client, you must perform additional manual steps to ensure that configuration changes made through the WebFOCUS Administration Console are available to ReportCaster. This is because the stand-alone Distribution Server does not have access to the WebFOCUS configuration files being updated by the console. This is especially important when configuring external security for WebFOCUS, since your ReportCaster jobs may not run properly if the Distribution Server is not using the same security settings as the WebFOCUS Client.

The recommended procedure is to make changes to WebFOCUS, as per the documentation, and then test them with a web browser. When the settings are verified, perform the following steps to ensure that the configuration is available to ReportCaster:

1. Copy the webfocus.cfg file and the install.cfg file from the …\ibi\WebFOCUS82\config directory to the …\ibi\WebFOCUS82\config directory on the stand-alone Distribution Server machine.
2. Copy the odin.cfg file from the …\ibi\WebFOCUS82\client\wfc\etc directory to the …\ibi\WebFOCUS82\client\wfc\etc directory on the stand-alone Distribution Server machine.
3. Copy the cgivars1.wfs file from the …\ibi\WebFOCUS82\client\wfc\etc directory to the …\ibi\WebFOCUS82\client\wfc\etc directory on the stand-alone Distribution Server machine.
4. Restart the Distribution Server and test the scheduled job behavior.

Configuring Secure Communications to the ReportCaster Distribution Server

ReportCaster encryption can be enabled to secure communications between the ReportCaster application and the ReportCaster Distribution Server. For more information, see *Distribution Server Settings* in the *ReportCaster* manual.

Configuring ReportCaster Web Services in an SSL Environment

By default, the Axis Servlet only accepts HTTP requests. If you use ReportCaster Web Services in an SSL environment, you will need to manually configure the Axis Servlet to accept HTTPS requests. To do so, add a second AxisServletListener with the name https to axis2.xml and specify the port parameter for both listeners. The axis2.xml file is located in the *drive*:\ibi\WebFOCUS82\webapps\webfocus\WEB-INF\conf folder.

The following code is an example of a second AxisServletListener.

```
<transportReceiver name="https"
class="org.apache_1_6_2.axis2.transport.http.AxisServletListener">
<parameter name="port">8443</parameter>
</transportReceiver>
```

For more information, see

http://axis.apache.org/axis2/java/core/docs/servlet-transport.html

Using the ReportCaster SFTP Key Generation Utility

ReportCaster includes a configuration utility for SFTP public and private keys.

Procedure: **How to Use the ReportCaster SFTP Key Generation Utility**

1. Navigate to the *drive:*\ibi\WebFOCUS82\ReportCaster\bin directory and double-click sshkeygen.bat.

   The ssh-keygen dialog box opens.

2. Set the output file to ibi\WebFOCUS82\ReportCaster\cfg\sftp_private_key.txt.

3. Enter a passphrase in the New Passphrase field.

   The Passphrase strength field indicates the strength of the password entered.

4. Select the type of key.

   The following image displays an example of a dialog box with all necessary changes made.
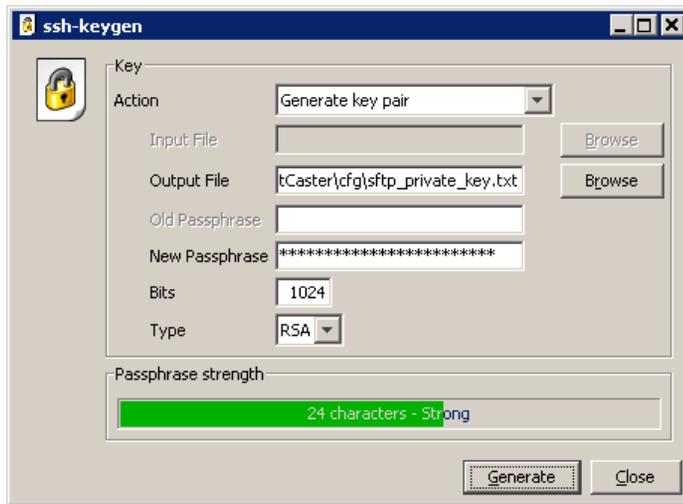
5. Click *Generate.*

   WebFOCUS writes two files to the *drive*:\ibi\WebFOCUS82\ReportCaster\cfg directory. These are sftp_private_key.txt and sftp_private_key.txt.pub. The file sftp_private_key.txt.pub contains the public key.

6. Install the public key (sftp_private_key.txt.pub) on your SFTP server.

Chapter **7**

Business Intelligence Portal and Home Page Verification and Security

This chapter explains how to verify and secure WebFOCUS Business Intelligence Portal.

If you do not use WebFOCUS Business Intelligence Portal, proceed to *Troubleshooting WebFOCUS and ReportCaster* on page 161.

In this chapter:

❑ Verifying and Configuring WebFOCUS Business Intelligence Portal

Verifying and Configuring WebFOCUS Business Intelligence Portal

WebFOCUS Business Intelligence Portal provides user interfaces that allow administrators, developers, and end users to access WebFOCUS through a web browser.

BI Portal enables you to build complete, modern websites with multi-levels of navigation. You can have as many levels as you like.

Content is dynamic and end users experience the click-and-drag behavior that they are familiar with in popular online portals. This is a key feature, as end users do not need to learn anything new.

While at work, people should have the same satisfying experiences that they have every day when reading news, reading email, and performing other activities. With BI Portal, the result is zero product training and a high usage rate.

With this product, a portal is easy to build. BI Portal uses the same familiar ribbon interface as the WebFOCUS InfoAssist report development tool. Building a portal is just a matter of a few clicks and click-and-drag actions. With BI Portal, anyone who can build a report using WebFOCUS InfoAssist can develop an impressive portal without any knowledge of web design. For more information on BI Portal, see the *Business Intelligence Portal* manual. For questions regarding licensing, contact your Information Builders branch representative.

If you installed the BI Portal with the WebFOCUS Client, you should verify that the interfaces are accessible, as explained below.

Caution: If you installed a pop-up blocker for your browser, you must disable it when accessing the BI Portal.

WebFOCUS Home Page Verification

It is recommended to access the WebFOCUS Home Page to confirm the installation and set the administrator password.

Procedure: How to Access the WebFOCUS Home Page

1. Confirm that the following are started:

   ❏ WebFOCUS Reporting Server

   ❏ Web Servers and Application Servers

   ❏ ReportCaster Distribution Server (when the WebFOCUS Client license includes ReportCaster)

2. Go to the following URL:

   `http://hostname:port/ibi_apps`

   where:

   hostname:port

   Are the host name and port of the web server. However, if you use an application server only configuration, then these are the host name and HTTP port of the application server. For Tomcat stand-alone configurations, the default port is 8080. If you require SSL, use https instead of http.

   The WebFOCUS Sign In page opens.

3. Sign in as an administrator. The default user name and password are *admin* and *admin*, respectively.

   By default, BI Portal accounts are created and administered from within the Security Center interface and are not related to the accounts used for the WebFOCUS Reporting Server. This default sign-in behavior can be customized using the procedures and steps detailed in the *WebFOCUS Security and Administration* manual.

   The WebFOCUS Home Page opens in your web browser.

   Note: If the WebFOCUS Home Page does not appear, verify that your web server is running and that the proper aliases have been defined.

4. Set a new password and email address for the admin account as follows. If you use both Report Library and Managed Reporting, this is required.

   a. Select *Security Center* from the Administration menu.

      The Security Center opens.

   b. Right-click a user name and select *Edit* from the context menu.

      The Edit User dialog box opens, as shown in the following image.

   c. Enter an email address to use for the administrator in the EMail Address field.

   d. Click *Set Password*.

      The Set Password dialog box opens.

   e. Set and confirm the password. If you use ReportCaster, this should match the password you set for the ReportCaster Administrator in *Verifying ReportCaster* on page 149.

   f. Click *OK*.

      You are returned to the Edit User dialog box.

   g. Click *OK*.

      You are returned to the Security Center dialog box.

   h. Click *Close*.

5. Return to the WebFOCUS Home Page and optionally create a report using InfoAssist.

    If you receive errors while using InfoAssist, your application server may not be properly compiling JSP files.
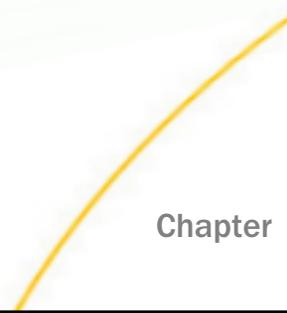
Chapter **8**

Troubleshooting WebFOCUS and ReportCaster

This chapter contains information for tracking errors and debugging problems.

Since much WebFOCUS Client processing is done through your web and application servers, their configuration is a common cause of problems. If you run into any problems, carefully review the configuration information in *Configuring Web and Application Servers* on page 95. You should also be aware of the trace files generated by the installation.

If you encounter any problems with ReportCaster, review *ReportCaster Troubleshooting Tips* on page 170 to determine if your system is configured properly.

For additional assistance, call Information Builders Customer Support Services at (800) 736-6130 or (212) 736-6130, or contact your local Information Builders representative.

In this chapter:

❏ WebFOCUS Troubleshooting Tips

❏ ReportCaster Troubleshooting Tips

WebFOCUS Troubleshooting Tips

Troubleshooting WebFOCUS considers all the places where a problem can occur. These include the following:

❏ Web Browser and its Java Plug-In

❏ Web Server

❏ Application Server and its Java VM

❏ WebFOCUS Client Configuration Files

❏ WebFOCUS Reporting Server

General Tips

Try some of these solutions when troubleshooting WebFOCUS problems:

1. Clear your web browser cache and close all browser instances. Often, even after you have taken steps to correct a problem, the page or pages that contained the original problem still reside in cache.

2. Ensure that all components are started and are listening on their expected ports. The WebFOCUS web application may take some time to load.

3. Ensure that you typed in the correct URL. WebFOCUS URLs are case-sensitive.

4. If your web server is not listening on port 80, make sure you are calling with the correct port in the URL.

5. Ensure that the correct application names are listed in your WebFOCUS Reporting Server APP PATH. This is defined in:

   drive`:\ibi\srv82\wfs\etc\edasprof.prf`

   If you receive a *Resource not found* message, then this may be the problem.

6. During testing, be sure to call pages using HTTP or HTTPS requests and not by selecting *Open* from the File menu in the web browser.

7. Turn on tracing through the WebFOCUS Administration Console.

8. Clear the cache in your application server after completing the upgrade installation. For example, if you are using Apache Tomcat, the cache can be cleared by manually deleting any subdirectories that correspond to the context roots that you deployed (for example, /ibi_apps and /ibi_help), which are located in the following directory:

   `<`*catalina_home*`>\work\Catalina\localhost`

   Note: If installed by WebFOCUS Client, Tomcat will be installed in the root directory of the WebFOCUS installation which, by default, is c:\ibi\tomcat.

9. In the WebFOCUS Administration Console, select the *Diagnostics* tab and use the available options to troubleshoot.

10. Restart all components, especially your web or application servers.

HTTP 500 Internal Server Message

If you receive an HTTP 500 server message on the Configuration Verification Utility page after installation, clear your browser cache and access the Diagnostics page again from either the Program Menu option or by copying the URL into another browser window. This may occur on a full installation or on an upgrade.

Web Browser Issues

If you are planning to use WebFOCUS products, note that browsers released after the production date of a WebFOCUS version are subject to certification. Certification is done with the current release level of WebFOCUS and App Studio. For additional information, see *the WebFOCUS Release Guide*, which can be accessed by clicking on the following URL:

https://techsupport.informationbuilders.com/tech/wbf/8206_relguide.pdf

Note: Some browsers may function differently depending on the operating system. See the *WebFOCUS Release Notes* for detailed information on known issues related to browser version or configuration.

JVM Support Issue with IBM WebSphere Application Server

In Release 8206, Java VM Version 8 is supported on the system that is hosting the application server where the WebFOCUS Client web application is displayed and the ReportCaster Distribution Server is installed.

Procedure: **How to Verify JVM Version**

There are two methods for verifying the Java VM version installed on the machine where the WebFOCUS client is deployed.

❏ From the WebFOCUS Administration Console:

  1. Sign in to WebFOCUS and select *Administration Console* from the Administration menu.

  2. Select the *Diagnostics* tab.

  3. Select *JVM Property Info*.

  The version is listed under java.runtime.version.

❏ From a browser, type the following URL:

  `http://hostname:port/ibi_apps/diagnostics/properties.jsp`

  The version is listed under java.vm.version.

Web and Application Server Debugging

Ensure that your web and application servers are configured, as explained in *Configuring Web and Application Servers* on page 95.

WebFOCUS relies on processing by the Java VM, web server, and application server. Their debugging tools and log files can help troubleshoot common WebFOCUS issues. Review the documentation for your web and application servers for information on their tracing and log files.

For Apache Tomcat, review the log information generated in the following directory:

`C:\ibi\tomcat\logs`

Note: You can safely ignore the following error:

```
org.apache.catalina.core.AprLifecycleListener lifecycleEvent - INFO:
The Apache Tomcat Native library which allows optimal performance in
production environments was not found on the java.library.path.
```

Java Memory Issues

Depending on your application server default settings, you may need to adjust the Java VM memory options if you run into performance issues. If the WebFOCUS installation configured Tomcat for you, this is done automatically.

The most common Java VM options you need to set involve the size of the Java heap and stack, which determine memory availability for Java programs and the Java VM. Errors can occur if not enough memory is available, and the heap size impacts performance, since it determines how often garbage collection occurs.

The following are the most common Java VM options related to memory settings. Replace the #### with the size you wish to set:

```
-Xmx####M
```

Sets the maximum Java heap size. It is common to make this 1/4 of the system RAM, but it must be at least 1536 MB (1.5 GB).

```
-Xms####M
```

Sets the initial Java heap size. It is common to make this 1/8 of the system RAM, but it must be at least 1536 MB (1.5 GB).

```
-Xss####M
```

Sets the Java thread stack size. You do not need to set this unless you are fine tuning your environment.

The size is normally set in Megabytes. For example:

```
-Xms1536M
-Xmx2048M
```

To view your current Java VM memory settings, access the WebFOCUS Administration Console. Select the *Diagnostics* tab and select *JVM Property Info*.

The Java VM memory settings for your environment are displayed in the right pane, as shown in the following image.

Memory Information (K)

Type	Pool Name	Current Used	Peak Used	Initial	Committed	Maximum	Threshold Count
Heap	*	937,518	~	1,099,776	1,781,760	1,955,328	~
	PS Eden Space	323,478	642,048	275,456	329,728	334,848	n/a
	PS Survivor Space	140,853	197,827	45,568	194,560	194,560	n/a
	PS Old Gen	473,186	554,848	733,184	1,257,472	1,466,368	0
Non-Heap	*	309,002	~	2,496	320,640	0	~
	Code Cache	134,197	134,305	2,496	135,360	245,760	0
	Metaspace	158,589	158,589	0	167,744	0	0
	Compressed Class Space	16,214	16,214	0	17,536	1,048,576	0

Note:To set Initial Heap and Maximum Heap size, use the following JVM startup parameters:

-Xms256m	will set the Initial Heap size to 256Mb
-Xmx256m	will set the maximum Heap size to 256Mb
-XX:MaxPermSize=128m	will set the maximum Perm Gen Size to 128Mb

Optimum sizes vary depending on your total memory, the needs of your application, how many other processes require memory, the type of Java VM, and other considerations. A good starting place is to set the minimum to 1/8 of the total RAM and set the maximum to 1/4 of total RAM.

Where to set these and other Java VM options depend on your application server.

❏ For Tomcat, these are set automatically if the WebFOCUS installation configured Tomcat.

❏ For other application servers, refer to your application server documentation.

Graphics Issues

You can test basic graph functionality by running the sample cargraph.fex procedure installed with the WebFOCUS Reporting Server:

```
http://hostname:port/ibi_apps/WFServlet?IBIF_ex=cargraph&FORMAT=PNG
```

If you cannot generate graphics or want to improve performance, try adding the following Java option to your application server Java VM settings:

```
-Dsun.java2d.noddraw
```

For Tomcat, this is in the Apache Tomcat Properties windows on the Java tab, in the Java Options field.

If you cannot run a graph request, you may also need to set NTFS permission to allow your application server full permissions to the temporary directory used by the Java VM. This directory is the java.io.tmpdir parameter that appears in the WebFOCUS Administration Console when you select the *Diagnostics* tab and select *JVM Property Info*.

WebFOCUS Web Server Host Name and Port Settings

During the WebFOCUS Client installation, you are asked for the host name and HTTP port of your web server. This should be the host name and port that your end users use to access WebFOCUS and ReportCaster. These values are used for communications between ReportCaster and Report Library. If you use Report Library, ensure this is set to the end user accessible web server host name and port, even if it is not on the same machine as WebFOCUS and only forwards requests through a firewall.

If you need to change the web server host name and port that you entered during the installation:

1. If you use ReportCaster, correct the host name and port number stored in the ReportCaster configuration for the Report Library. To do this, access the ReportCaster Console, which can be accessed from the WebFOCUS Home Page. After you sign in to the WebFOCUS Home Page, click *Tools* from the top menu and select *ReportCaster Status*.

   The ReportCaster Console opens in a new browser window.

2. Click the *Configuration* tab.

3. Click *Report Library* in the left pane and change the host name and port in the *Default Library URL for Email Notification* field.

4. Click the *Save* icon, followed by *Restart* to restart all WebFOCUS components.

5. Optionally, update the shortcuts that appear in the Start menu for accessing WebFOCUS pages. To do this, right-click each of the following, select *Properties*, and adjust the host name and port that appear in the URL:

   drive:\ibi\WebFOCUS82\utilities\showconsole

   drive:\ibi\WebFOCUS82\utilities\ReportCasterMain

   drive:\ibi\WebFOCUS82\utilities\ReportCasterConsole

   For example:

   http://*hostname.domain.com*:**8080**/ibi_html/wfconsole.htm

   If you are not using ReportCaster, the ReportCaster links do not appear.

Using the jar Utility

A jar.exe utility is installed with the Java JDK. It lets you create, extract, and edit the contents of JAR, WAR, EAR, ZIP, RAR, and other archive files. If you deploy the WebFOCUS web application as a WAR file, the jar utility lets you change the webfocus file contents.

Information Builders

Note: The default WebFOCUS Apache Tomcat configuration does not use the WAR file, so this utility is normally not needed with Tomcat.

Procedure: **How to Ensure You Can Use the jar Utility**

To use the jar command, ensure that the *JAVA_HOME*\bin directory is in your search PATH. For example:

```
C:\Program Files\Java\jdk1.8.0_242\bin
```

To add this to your search PATH:

1. Go to the Windows Control Panel and open the *System* folder.

2. Click *Advanced system settings* and then click the *Environment Variables* button.

3. In the bottom System variables frame, select *Path*.

4. Click *Edit*.

5. At the end of the line, add a semicolon (;) and the path to the *JAVA_HOME*\bin directory. For example:

    ```
    C:\Program Files\Java\jdk1.8.0_242\bin
    ```

6. Click *OK* to close out.

Procedure: **How to Edit the WebFOCUS Web Application**

The WebFOCUS web application is provided as both an expanded directory and a WAR file:

```
drive:\ibi\WebFOCUS82\webapps\webfocus
```

```
drive:\ibi\WebFOCUS82\webapps\webfocus.war
```

The easiest way to edit the web application is the following:

1. Undeploy the webfocus.war file from your application server.

2. Rename the webfocus.war file to webfocus-old.war. This ensures you have a backup and can keep track of where the latest version resides.

3. Edit or add files to the expanded webfocus directory and subdirectories. You should do this even if you deploy the WAR file instead of the expanded directories. This ensures that service packs maintain your changes. When you apply a service pack, any changes must be in the expanded directories to be maintained.

4. Open a Command Prompt.

5. Navigate to the webfocus directory. For example:

    ```
    drive:\ibi\WebFOCUS82\webapps\webfocus
    ```

6. Use the jar command to create a new webfocus.war file that contains the contents of the webfocus directory and subdirectories. For example:

```
jar cvf ../webfocus.war *
```

This creates a webfocus.war file containing all files and subdirectories in your current directory. The webfocus.war file will be located one directory above your current location because you prefaced it with "../".

7. Redeploy the WebFOCUS web application to your application server.

Procedure: **How to Execute the jar Utility**

The options for using the jar commands are useful to know. You execute the jar utility from the Command Prompt.

❏ To create a new jar file:

```
jar cvf FileToCreate.war FileToAdd1 FileToAdd2
```

You can add all files and subdirectories using an asterisk (*).

```
jar cvf FileToCreate.war *
```

❏ To extract the contents of an existing jar file:

```
jar xvf ExistingFile.war FileToExtract1 FileToExtract2
```

Files are extracted to your current location.

You can extract all files and subdirectories by not specifying any files to extract.

```
jar xvf ExistingFile.war
```

❏ To add or replace a file in an existing jar file:

```
jar uvf ExistingFile.war FileToAdd1
```

WebFOCUS File Extensions

WebFOCUS files have several non-standard file extensions on Windows, such as .mas, .prf, .acx, .wfs, .cfg, and .xmls files. Depending on the software installed on your machine, these file extensions may already be in use for other applications. Normally, this causes no conflicts when using either WebFOCUS or the other applications. However, should you attempt to open a WebFOCUS file that is mapped for another application by double-clicking it in File Explorer, problems can arise.

Information Builders

Note: By default, you might not see file extensions in File Explorer. To see extensions, open File Explorer. On the View tab, enable *View file name extensions*.

Specific instances where WebFOCUS extensions may conflict are the following:

❏ PRF files, such as *drive*:\ibi\srv82\wfs\etc\edasprof.prf

   PRF files are normally mapped to Microsoft Outlook Profile settings. On some Windows releases, opening edasprof.prf by double-clicking it in File Explorer, can cause damage to your Microsoft Outlook settings. Therefore, if you need to edit this file, open it from within a text editor.

❏ MAS files, such as *drive*:\ibi\apps\ibisamp\car.mas

   MAS files may be mapped as Microsoft Access files if you have Microsoft Access installed.

Missing Tomcat Context Definition Files

Symptom: The context definition files for Tomcat are being deleted periodically.

The following files will be deleted randomly:

<catalina_home>\conf\Catalina\localhost\ibi_apps.xml

<catalina_home>\conf\Catalina\localhost\ibi_html.xml

<catalina_home>\conf\Catalina\localhost\approot.xml

Problem: This is a problem with Tomcat in certain environments. The exact cause of the issue is unknown.

For more details, see:

http://alwold.blogspot.com/2008/05/getting-tomcat-to-stop-deleting-your.html

Solution: Within the Tomcat configuration (server.xml), turn off autoDeploy.

1. Edit your Tomcat server.xml.

   On Windows, this is typically found at:

   <catalina_home>\conf\server.xml

   or, if the WebFOCUS Client installation installed Tomcat, it is located under

   <catalina_home>\conf\server.xml

2. Find the following section within your server.xml:

```
<Host name="localhost" appBase="webapps"
unpackWARs="true" autoDeploy="true"
xmlValidation="false" xmlNamespaceAware="false">
```

and change autoDeploy to false:

```
<Host name="localhost" appBase="webapps/localhost"
unpackWARs="true" autoDeploy="false"
xmlValidation="false" xmlNamespaceAware="false">
```

3. Restart Tomcat.

ReportCaster Troubleshooting Tips

ReportCaster relies on communications between the following components:

❏ Web browser (for user interfaces)

❏ Application server

❏ Java VM

❏ ReportCaster web components

❏ ReportCaster Distribution Server

❏ Database server where WebFOCUS Repository tables are located

❏ WebFOCUS Reporting Server

❏ Mail server

❏ FTP server (for FTP distribution)

If ReportCaster fails to perform properly, confirm that all components are installed, started, and listening on their expected ports. The ReportCaster Distribution Server will not start if it cannot connect to the repository. All components are related, so what appears to be a problem in one component may be caused by a different component. If possible, restart components and reboot, especially after making changes.

All components can run on one machine, or they can be distributed across different machines running different operating systems. If components are distributed, ensure all machines are running and can communicate using the expected protocols.

Information Builders

Note:

❏ All WebFOCUS and ReportCaster components must be the same release number.

❏ If the Distribution Server is not started, you can edit the ReportCaster Server Configuration interface from the WebFOCUS BI Portal. After you sign in to the WF BI Portal, click *Tools* from the top menu bar and select *ReportCaster Status*. The ReportCaster Console opens in a new browser window. Click the *Configuration* tab, which contains the ReportCaster configuration settings.

Troubleshooting Web and Application Server Errors

Review the installation and configuration instructions in *Installing the WebFOCUS Client* on page 49 and *Configuring Web and Application Servers* on page 95.

❏ Ensure the web server and application server are running.

❏ If your repository requires JDBC drivers, ensure they are in your application server CLASSPATH. The path up to and including any file names must be specified. Specifying a directory containing a driver file is not sufficient. Be sure to restart your application server after changing CLASSPATH.

For Tomcat, you can set CLASSPATH from the Start menu by selecting *Tomcat Configuration Utility*, under the Information Builders app.

Troubleshooting Java Errors

If the Distribution Server fails to start, or starts as a non-Windows service but fails to start as a Windows service, check your Java configuration.

❏ Confirm that Java executes by checking the version at a command prompt. Open a Command Window and type:

```
java -version
```

Something similar to the following should appear:

```
java version "1.8.0_242"
```

If you receive an error, ensure the Java JDK is properly installed.

Troubleshooting ReportCaster Distribution Server Errors

Review the installation and configuration instructions in *Installing the WebFOCUS Client* on page 49 and *WebFOCUS ReportCaster Post-Installation Tasks* on page 147.

❏ Ensure the ReportCaster Distribution Server is running.

❏ Ensure that the ReportCaster web application knows where the Distribution Server is. Edit the dserver.xml file, which is located in the following directory:

```
drive:\ibi\WebFOCUS82\utilities\WFReposUtil\xml
```

Locate the <host_name> and <port> elements in the dserver.xml file. For example:

```
<host_name>hostname1</host_name>
<port>8200</port>
```

If the values within these elements are incorrect, correct them. Specify the host name and TCP port for the Distribution Server according to your configuration.

After you save the dserver.xml file, you must reload the repository tables and restart Tomcat or the application server where WebFOCUS is deployed.

❏ Check the Java configuration, as explained in *Troubleshooting Java Errors* on page 171. If ReportCaster starts as a non-Windows service but does not start as a Windows service, the Java installation is a likely cause.

❏ Check settings using the ReportCaster Console, which can be accessed from the WebFOCUS Home Page. After you sign in to the WebFOCUS Home Page, click *Tools* from the top menu and select *ReportCaster Status*. The ReportCaster Console opens in a new browser window. Click the *Configuration* tab, which contains the ReportCaster configuration settings.

Troubleshooting Repository Errors

Review the installation and configuration instructions in *Installing the WebFOCUS Client* on page 49, *WebFOCUS Repository Post-Installation Tasks* on page 144, and *Additional WebFOCUS Repository Topics and Tasks* on page 189.

❏ Ensure the database server is running.

❏ Ensure the repository tables exist.

❏ Ensure that the Distribution Server machine contains the correct information to connect to the database. For more information on these parameters, see *Repository Connection Information* on page 192.

❏ Ensure the correct JDBC driver is installed on the web server and ReportCaster Distribution Server machines.

❏ Ensure that your application server or servlet container has the correct CLASSPATH to the JDBC driver. You can also add the driver files to the WEB-INF/lib directory for the ReportCaster web application. To do this, copy the files into:

drive:\ibi\WebFOCUS82\webapps\webfocus\WEB-INF\lib

If you deployed the expanded directory, redeploy it. If you deployed the webfocus.war file, use the jar utility to insert the driver files or create a new web application, as explained in *Using the jar Utility* on page 166. Then redeploy the WAR file.

❏ Ensure the Distribution Server has the correct CLASSPATH to the JDBC driver. This is set in a file:

drive:\ibi\WebFOCUS82\ReportCaster\bin\classpath.bat

and in the registry:

HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Information Builders\ReportCaster
\WF82\Parameters\Java\Classpath

❏ For SQL Server, ensure SQL Server authentication is supported, as explained in *SQL Server Pre-Installation Steps* on page 204.

Troubleshooting Reporting or Delivery Errors

Review the WebFOCUS and ReportCaster documentation and review the documentation for your Mail or FTP server.

❏ Ensure the WebFOCUS Reporting Server is running.

❏ Ensure the report, file, or URL is valid.

❏ Ensure the Mail or FTP server is running.

❏ Check the settings in the ReportCaster Server Configuration interface.

❏ Check the files in the logs directory:

drive:\ibi\WebFOCUS82\ReportCaster\log

Turning Distribution Server Traces ON/OFF

Normally, you should turn the Distribution Server traces on and off using the ReportCaster Console, which can be accessed from the WebFOCUS Home Page. After you sign in to the WebFOCUS Home Page, click *Tools* from the top menu and select *ReportCaster Status*. The ReportCaster Console opens in a new browser window. Click the *Configuration* tab. The Distribution Server trace and log settings can be accessed in the left pane.

The trace files appear in *drive*:\ibi\WebFOCUS82\ReportCaster\trc. In addition, check the log files in *drive*:\ibi\WebFOCUS82\ReportCaster\log for more information.

Chapter 9

Solr Installation and Configuration

Solr is an open-source, high-performance, full-featured enterprise-search platform. Solr uses the Apache Lucene™ Java search library as its core for searching and indexing.

The following Information Builders features make use of the Solr platform:

❑ InfoSearch

❑ WebFOCUS Home Page

❑ Home Widget

❑ Navigation Widget

In this chapter:

❑ Installing and Configuring Solr

Installing and Configuring Solr

Note:

❑ The WebFOCUS Integrated Installation Package was tested with Solr Version 8.0.0.

❑ The WebFOCUS Integrated Installation creates a *drive*:\ibi\solr directory with the following zip files:

  ❑ **ibi-protected.zip.** Contains Solr indexes for the WebFOCUS retail samples data.

  ❑ **solr-8.0.0.zip.** Contains the Solr Version 8.0.0 distribution archive.

Procedure: How to Install and Configure Solr

1. Navigate to the *drive*:\ibi\solr directory and extract *solr-8.0.0.zip* to the same directory.

2. Navigate to the *drive*:\ibi\solr directory and extract *ibi-protected.zip* to the *drive*:\ibi\solr \solr-8.0.0\server\solr\ directory.

    Note: This will create the following subfolder with data indexed for the WebFOCUS retail data sources.

    drive:\ibi\solr\solr-8.0.0\server\solr**ibi-protected**\

3. Optionally, change the default 8983 startup port.

   a. Edit the script file.

      `drive:\ibi\solr\solr-8.0.0\bin\solr.in.cmd`

   b. Uncomment the following line:

      `REM set SOLR_PORT=8983`

   c. Specify the port, for example:

      `set SOLR_PORT=28983`

   Note:

   ❏ To start or stop Solr with the default port set in the script file (solr.in.cmd), navigate to the *drive*:\ibi\solr\solr-8.0.0\bin\ directory and issue the following commands:

   ```
   Solr start
   Solr stop
   ```

   Use a CMD window from the *drive*:\ibi\solr\solr-8.0.0\bin\ directory.

   ❏ To specify a custom port (for example, 28983) from the CMD window, issue the following commands:

   ```
   Solr start -p 28983
   Solr stop -p 28983
   ```

4. Update Tomcat to include the required -D settings.

   a. From the Information Builders Program Group, open the *Tomcat Configuration Utility*.

   b. Click the *Java* tab.

   c. Add the following required -D settings to the Tomcat Java Options section, as shown in the following image.

      ```
      -DIBI_InfoSearch_Engine=Solr
      -DIBI_InfoSearch_Solr_Url=http://{solr_host_name}:{port}
      ```

For example:
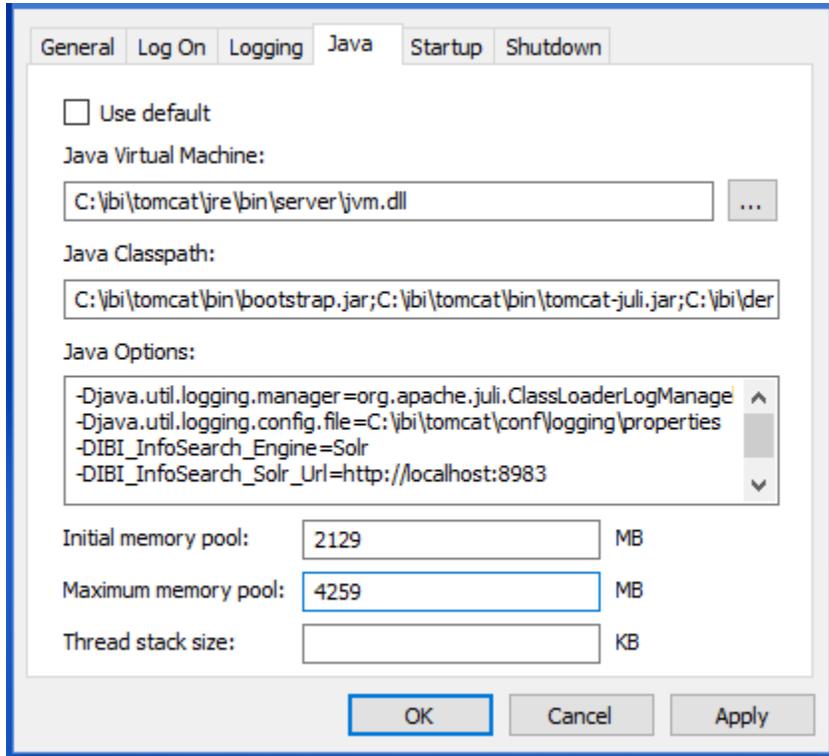
5. To use Solr with WebFOCUS, start Solr first, and then start Tomcat.

Procedure: **How to Index Existing Content**

To index existing content in a WebFOCUS repository, such as Titles, Tags, and Summaries:

1. Sign in to your WebFOCUS instance.

2. Open a new browser tab for the web services page, for example:

   `http://localhost:8080/ibi_apps/rs?IBIRS_action=TEST`

3. Click the *utils* button, and in the indexRepository/IBIRS_path field, type */WFC/Repository*, as shown in the following image.

4. Click *indexRepository* to complete the process.

   A new window session opens with the execution results, as shown in the following code.

```
<?xml version="1.0" encoding="UTF-8"?>
<ibfsrpc language="en_US" type="simple" subreturncode="0"
returndesc="SUCCESS" returncode="10000"
name="indexRepository" _jt="IBFSResponseObject">
  <ibfsparams size="1">
     <entry value="/WFC/Repository" key="IBIRS_path"/>
  </ibfsparams>
  <rootObject _jt="string" value="Indexer Count of paths indexed:520"/>
</ibfsrpc>
```

5. Click the *utils* button, and in the describeRepository/IBIRS_path field, type */WFC/Repository*, as shown in the following image.
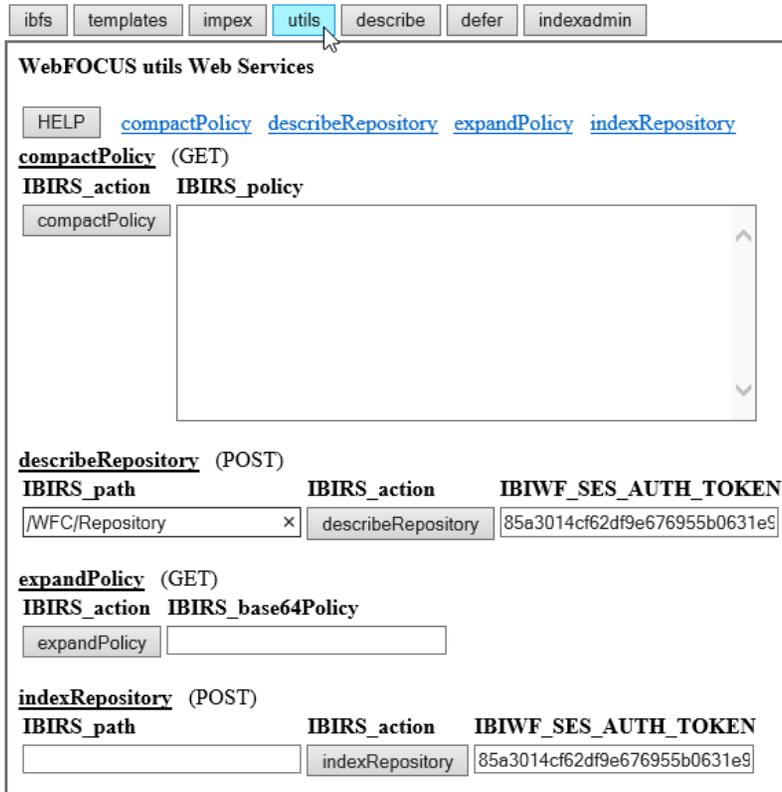
6. Click *describeRepository* to complete the process.

   A new window session opens with execution results, as shown in the following code.

```
<?xml version="1.0" encoding="UTF-8"?>
<ibfsrpc _jt="IBFSResponseObject" language="en_US"
name="describeRepository"
returncode="10000" returndesc="SUCCESS" subreturncode="0" type="simple">
    <ibfsparams size="1">
        <entry key="IBIRS_path" value="/WFC/Repository"/>
    </ibfsparams>
<rootObject _jt="string" value="Processed count: 345. Described count:
310.
Have parameters count: 86. Non writable files skipped: 0"/>
</ibfsrpc>
```

7. From the WebFOCUS Administration Console menu bar, click *Clear Cache* and, when you receive a confirmation message, click *OK*.

8. Sign out of WebFOCUS and then sign back in to WebFOCUS.

9. Depending on the widget you want to use, navigate to *webfocus_instance*/ibi_apps/ home_widget or *webfocus_instance*/ibi_apps/navigation_widget.

Magnify Configuration

This section describes how to configure Magnify.

In this appendix:

❑   Prerequisites

❑   Optimizing the Magnify Environment

❑   Security

Prerequisites

Magnify requires an application server (for example, Tomcat or WebSphere) in order to read and write to index libraries. It can be installed on a Windows (64-bit preferred) or UNIX\Linux-based server, using the same language as the WebFOCUS Client.

Processing should be at least a dual-core machine. However, four CPUs are generally recommended. Moreover, a minimum of 8GB in memory is required, while 16GB is usually recommended. Depending on the size of the data, storage space should be anywhere between 250GB to 1TB or higher (it is usually estimated as three times the size of the expected data set).

Note: This all varies depending on the type of search-based application being proposed. Indexing frequency, volume of data, and concurrent usage affect how storage space and memory are allocated. Therefore, the use of a split-tier environment is recommended for a Magnify platform where the Reporting Server, Magnify, and each data source are each provided with their own dedicated resources. Magnify does scale in order to accommodate any environment.

The following are the prerequisites to configuring and using Magnify:

❑   WebFOCUS 8.2 Client (with a Magnify license)

❑   Application Server (for example, Tomcat or WebSphere)

   Note: For more information, see the *WebFOCUS Security and Administration* manual.

❑   Java Development Kit (JDK) Version 8 or Version 11

Optimizing the Magnify Environment

When indexing large documents, we recommend that you change the application server limits for files that it accepts through an HTTP POST operation.

For example, in the Tomcat application server, the maxPostSize parameter can be updated in /path/tomcat/conf/server.xml to remove the limit, as follows:

```
<Connector port="8080"
protocol="HTTP/1.1"connectionTimeout="20000"
redirectPort="8443" maxPostSize="-1"
```

The default value for maxPostSize is 2097152 (2 megabytes). If this limit is exceeded, the following error is written in the Tomcat log:

```
java.lang.IllegalStateException: Post too large
at org.apache.catalina.connector.Request.parseParameters(Request.java:2368)
at org.apache.catalina.connector.Request.getParameter(Request.java:1005)
```

Security

Magnify integrates with most enterprise security frameworks to control accessibility to sensitive information. Security can be configured in many ways to address varied security strategies. Security plug-ins extend the ability of Magnify to authenticate users and authorize the data to which they can have access.

Magnify security is maintained through the WebFOCUS Client Security architecture. Accessing a secure report requires login credentials. When Magnify uses Lucene, security rules added to the indexed data trigger an external security program (security exit) that determines user authentication and data authorization.

Appendix

B

Additional Graph Configuration Options

This appendix explains how to configure WebFOCUS graph options. For ReportCaster to distribute graphics in a PDF, you must review the HOLD options.

In this appendix:

❏ Graph Options

❏ Graph Invocation and Generation Options

❏ PCHOLD (Server Side) Graphics Overview

❏ Configurations for HOLD Graphics

Graph Options

Server-side WebFOCUS graphs are generated by a Java-based graph engine installed with WebFOCUS components. GRAPH53 is the server-side WebFOCUS graph engine. It contains support for many different graph types and advanced 3D graph options. HTML5 graphs are also available. HTML5 graphs are created as Java code that runs directly in the browser,

Graph Invocation and Generation Options

There are several ways to create WebFOCUS graphs.

❏ Using FORMAT JSCHART to generate HTML5 graphs. HTML5 graphs are delivered to the browser as java code and run in the browser.

❏ On the web or application server (Server Side Graphics/PCHOLD), as explained in *PCHOLD (Server Side) Graphics Overview* on page 184.

❑ On the WebFOCUS Reporting Server (HOLD), as explained in *HOLD Graphs Overview* on page 184.
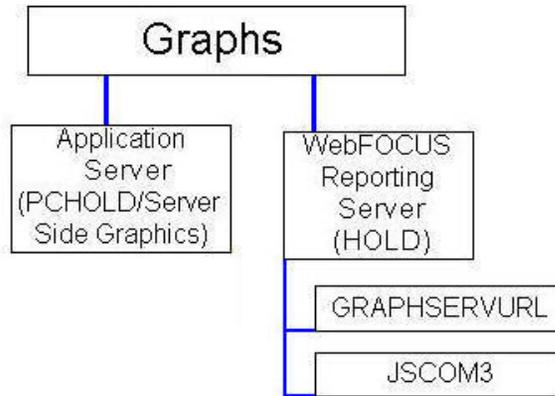
PCHOLD (Server Side) Graphics Overview

With Server Side Graphics, a servlet generates graphs on the web or application server and delivers them to the browser as bitmap images (such as .png, .gif, or .jpg) or in a vector format embedded in a PDF document.

HOLD Graphs Overview

With HOLD graphs, the WebFOCUS Reporting Server uses the graph engine to create the graphs either locally or through an HTTP call to the application server. Graphs are then stored on the WebFOCUS Reporting Server. This is required when ReportCaster must distribute graphs in a PDF, but you may find other reasons to use it. The following options are available for HOLD graphs.

❑ **GRAPHSERVURL**

The WebFOCUS Reporting Server makes an HTTP call to the application server in order to generate the graphs. When the graph is created, it is stored in a directory on the WebFOCUS Reporting Server machine.

GRAPHSERVURL is enabled by default and normally requires no configuration.

❑ **JSCOM3** (thread-based)

The WebFOCUS Reporting Server uses its JSCOM3 service to generate graphs. JSCOM3 is a listener installed with the WebFOCUS Reporting Server and it handles the Java code needed to generate server-side graphs. Procedures run as threads of the JSCOM3 process.

JSCOM3 is used if GRAPHSERVURL is not set in cgivars.wfs or a procedure. It can also be used if GRAPHSERVURL is overridden in a procedure. It is not used if you set an IBIJAVAPATH environment variable.

Configurations for HOLD Graphics

When using PCHOLD, a procedure is invoked on the WebFOCUS Reporting Server and the server accesses data sources to determine values. These values are usually passed back to the WebFOCUS Client on the web or application server and the client uses the graph engine to create graphics.

When using HOLD, after a procedure is invoked and the values determined, the WebFOCUS Reporting Server uses the graph engine to create the graphics itself or makes an HTTP call to the web server.

Using a HOLD can be specified in a procedure, as shown in the following example.

Example: **Creating a Sample Procedure for HOLD**

To test whether HOLD works in your environment, create a procedure like the following:

```
APP HOLD BASEAPP
GRAPH FILE CAR
SUM SALES
BY COUNTRY
ON GRAPH HOLD AS HOLDTEST FORMAT PNG
END
```

Save this procedure in the ibisamp directory on the WebFOCUS Reporting Server machine. For example:

```
drive:\ibi\apps\ibisamp\cargrsrv.fex
```

This procedure creates a file called holdtest.png in baseapp. You can use the procedure to test the HOLD configurations that follow. If GRAPHSERVURL is set in cgivars.wfs, you can override it and use JSCOM3 or IBIJAVAPATH, by adding the following as the second line of the sample procedure.

```
SET GRAPHSERVURL=""
```

Configuring GRAPHSERVURL

No special configuration is needed to use GRAPHSERVURL, provided you have deployed the WebFOCUS web application to your application server. GRAPHSERVURL is set as the IBIF_graphservurl value in cgivars.wfs. The value in cgivars.wfs is passed to the WebFOCUS Reporting Server when you launch a procedure through a servlet call. The value can also be set or overridden in a procedure using:

```
SET GRAPHSERVURL=http://hostname:port/ibi_apps/IBIGraphServlet
```

where:

hostname:port

　Are the host name and port of the web server or application server.

GRAPHSERVURL is not supported when used against a secured web server (SSL, Basic Authentication, or other third-party security), because there is no mechanism for supplying credentials.

If you are using a secured web server in front of your application server, you can reset this value to directly call the application server host and port instead of the web server. You can do this in cgivars.wfs through the WebFOCUS Administration Console.

For ReportCaster, this must be set in a procedure, since it is not inherited from cgivars.wfs. Otherwise, a procedure launched by ReportCaster makes use of JSCOM3 or IBIJAVAPATH.

You can disable GRAPHSERVURL and use JSCOM3 or IBIJAVAPATH for a specific procedure by setting GRAPHSERVURL to nothing:

```
SET GRAPHSERVURL=""
```

Configuring for JSCOM3 HOLD

JSCOM3 is a listener installed with the WebFOCUS Reporting Server. It normally uses the fourth port used by the server. By default, this is port 8123. It is only used for HOLD graphics if GRAPHSERVURL and IBIJAVAPATH is not set.

Be aware that if you create graphs that use templates, JSCOM3 uses a different copy of the templates than the WebFOCUS Client. If you modify templates, be sure to modify both. One is installed with the server for JSCOM3 and one is installed with the WebFOCUS Client:

```
drive:\ibi\WebFOCUS82\ibi_html\javaassist\images\tdg
```

Provided the JSCOM3 listener is started, no steps are needed to configure it in WebFOCUS 8.2. In order for JSCOM3 to start on Windows, your search PATH must contain the jvm.dll file for your Java release. The jvm.dll file is installed with the Java JDK in the jre\bin\client directory. For example:

```
C:\ibi\WebFOCUS82\jre\bin\client
```

The exact JDK directory depends on your Java release. For a different JDK release, substitute accordingly. If you need assistance, see the *Server Installation* manual.

Note: If the server is not on Windows, see the documentation for your server for information on starting the JSCOM3 listener. On most UNIX platforms, this requires that you set and export a JDK_HOME variable to the location of the Java JDK.

Additional WebFOCUS Repository Topics and Tasks

This appendix optionally applies to WebFOCUS Managed Reporting and ReportCaster users. It contains:

❏ Reference information about repositories (*Repository JDBC Concepts* on page 189 and *Repository Connection Information* on page 192).

❏ Sizing information for creating tablespaces (*Sizing Guidelines* on page 197).

❏ Lesser used tasks and configuration information (*Other WebFOCUS Repository Utilities and Tasks* on page 199).

❏ SQL Server configuration information for those less familiar with SQL Server (*SQL Server Pre-Installation Steps* on page 204).

❏ MySQL database installation and configuration information (*MySQL Repository Set Up* on page 207).

In this appendix:

Repository JDBC Concepts

This section provides a brief overview of repository concepts related to the WebFOCUS Client and ReportCaster.

Repositories should be stored in a certified relational database management system (RDBMS), such as Derby, SQL Server, Oracle, MySQL, or Db2. WebFOCUS and ReportCaster communicates with an RDBMS using Java Database Connectivity (JDBC).

JDBC Overview

JDBC provides a way for Java programs to access databases and other data sources. Using JDBC, WebFOCUS and ReportCaster connects to your repository. It then creates and executes SQL statements to access and write repository information. In theory, JDBC provides a level of abstraction so that most SQL statements work on most databases. However, in practice, differences occur and you should ensure you choose a database and driver that are supported by WebFOCUS.

In order for the WebFOCUS Client to connect to a repository using JDBC, the following are required:

❏ User ID and Password

❏ JDBC Driver

❏ JDBC Path

User ID and Password

The credentials you provide to the database are critical, as they determine how you access the repository. Depending on the type of database, if you wish to maintain separate repositories for separate instances of WebFOCUS Client, you may need separate user IDs.

During the WebFOCUS Client installation, the credentials are set in the WebFOCUS configuration file, install.cfg. If you need to change these values, you can edit this file. The WebFOCUS Administration Console allows you to change the password.

JDBC Driver

The JDBC driver is a class name used to access the driver. This varies depending on the driver.

During the Distribution Server installation, this is determined and set.

❏ For Derby, Oracle, SQL Server, MySQL, and Db2, the installation automatically writes the JDBC driver class name for the standard driver.

❏ For other databases and drivers, you are prompted to provide the JDBC driver class name. This value is stored in the WebFOCUS configuration file, install.cfg. If you need to change this value, you can edit this file.

JDBC Path

A JDBC driver is usually packaged as one or more JAR or ZIP files. Each target data source has its own JDBC driver, so you would use the Oracle JDBC driver to access Oracle and the SQL Server JDBC driver to access SQL Server. Some vendors may also require different drivers for different database releases.

WebFOCUS uses a JDBC type 4 driver to connect to the database.

The JDBC driver must be installed on the machine or machines that run WebFOCUS Client and ReportCaster Distribution Server.

The JDBC driver is used by both the Distribution Server and the application server. For ReportCaster to find the driver, the JDBC driver must be included in their CLASSPATH variables.

❏ For the Distribution Server, you provide the location of the driver during the Distribution Server installation. The installation uses this information to add the location of the driver to the CLASSPATH variable used by ReportCaster scripts and utilities. This is set in the following file:

drive:\ibi\WebFOCUS82\ReportCaster\bin\classpath.bat

and in the registry:

HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\Information Builders\ReportCaster
\WF82\Parameters\Java\Classpath

❏ For the application server, you set your application server CLASSPATH variable to include the driver file or files.

For Apache Tomcat, this is set if you choose to configure Tomcat when you install WebFOCUS Client. To manually set it, use the Start menu to select *Tomcat Configuration Utility*, under the Information Builders app. Then, select the *Java* tab and add a semicolon (;) plus the full path of the file to the end of the *Java Classpath* field.

Note: You can also copy driver files into the WEB-INF/lib directory located inside the webfocus.war file or WebFOCUS82 directory before you deploy the web application.

You must always specify the driver file or files, not just the directory containing the driver. You enter the JDBC driver file name in the JDBC Path field.

During the WebFOCUS and Distribution Server installation, this is created and set.

❏ Depending on the database selected, Oracle, SQL Server, and so on, you are prompted to provide the full path to the JDBC driver.

❑ For the WebFOCUS installation, the value for the JDBC path is set in the ..\utilities\setenv \utiluservars.bat file and is used when running WebFOCUS utilities, such as create database tables, update a database, and so on. If you need to change the value, you can edit this file.

JDBC Class

The JDBC class is a value used to access the JDBC driver. The JDBC class value varies depending on the driver.

During the WebFOCUS Client installation, the JDBC class value is determined and set based on the database selection.

❑ For Oracle, SQL Server, MySQL, and Db2, the installation automatically writes the JDBC CLASS for the standard driver.

❑ For other databases and drivers, you are prompted to provide the JDBC CLASS.

The JDBC class value is stored in the WebFOCUS configuration file, install.cfg. You can edit this file if you need to alter the JDBC driver information and provide a different JDBC class value.

JDBC URL

The JDBC URL is a value used to access the driver and repository. This varies depending on the driver and other connection information.

During the WebFOCUS Client installation, the JDBC URL is set based on the selected database.

❑ For Oracle, SQL Server, MySQL, and Db2, you are prompted for specific information needed to access your repository. This varies depending on the type of database and may include the host name or port where your database resides. The installation uses this information to create the JDBC URL.

❑ For other databases and drivers, you must provide the JDBC URL.

The JDBC URL value is stored in the WebFOCUS configuration file, install.cfg. You can edit this file if you need to alter the JDBC driver information and provide a different JDBC URL value.

Repository Connection Information

The connection information varies depending on the type of driver and database.

❑ For Db2, see *Db2 Connection Information* on page 193.

❏ For Derby, see *Derby Connection Information* on page 194.

❏ For MySQL, see *MySQL Connection Information* on page 195.

❏ For Oracle, see *Oracle Connection Information* on page 195.

❏ For SQL Server, see *SQL Server Connection Information* on page 196.

❏ For other repositories, refer to the documentation for your JDBC driver.

Db2 Connection Information

When using a Db2 repository, the connection information varies depending on the operating systems and the driver. The most common Db2 JDBC driver is the Db2 Universal JDBC driver.

During the WebFOCUS Client installation, you are prompted for:

❏ Database Name.

❏ Database Server Node (host name).

❏ Location Name.

❏ Port (50000 by default).

❏ Credentials for the account that will own the repository.

❏ JDBC Driver (com.ibm.db2.jcc.DB2Driver).

❏ JDBC Path (db2jcc.jar and db2jcc_license_cisuz.jar).

Based on this information, the installation creates the connection information:

❏ CLASS:

```
com.ibm.db2.jcc.DB2Driver
```

❏ URL

   ❏ For Universal Db2 JDBC (UDB) Type 4 Driver:

```
jdbc:db2://hostname:port/DBName
```

where:

DBName

     Is the database name for the repository.

LOCName

Is the Db2 location name.

hostname

Is the host name for the Db2 server.

port

Is the port for the Db2 server. The default is 324.

❏ For Universal Db2 JDBC (UDB) Type 2 Driver:

jdbc:db2:*DBName*

Derby Connection Information

In Derby, you create a database and user ID within a Derby Database Server.

During the WebFOCUS Client installation, you are prompted for:

❏ Database name for the repository (WebFOCUS82, by default).

❏ Database Server Node (*hostname*, by default).

❏ Port (1527, by default).

❏ Account to access the repository (webfocus, by default).

❏ Database password to access the repository (webfocus, by default).

❏ JDBC Driver (org.apache.derby.jdbc.ClientDriver).

❏ JDBC Path (derbyclient.jar).

❏ ClassName: org.apache.derby.jdbc.ClientDriverConnection URL:

jdbc:derby://<host>:<port>/<database>

Based on this information, the installation creates the connection information:

❏ CLASS:

org.apache.derby.jdbc.ClientDriver

❏ URL:

jdbc:derby://*<host>*:*<port>*/*<database>*

If you install multiple instances of the WebFOCUS Client, you need multiple repositories. To maintain multiple repositories in the same Derby Database Server, create a unique database for each instance.

MySQL Connection Information

In MySQL, you create a database and user ID within a MySQL Database Server. These steps are described in *MySQL Repository Set Up* on page 207.

During the WebFOCUS Client installation, you are prompted for:

❏ Database name for the repository.

❏ Database Server Node (host name).

❏ Port (3306, by default).

❏ Account and password to access the repository.

❏ JDBC Driver (com.mysql.jdbc.Driver).

❏ JDBC Path (mysql-connector-java-*nn*-bin.jar where *nn* is the version number).

Based on this information, the installation creates the connection information:

❏ CLASS:

```
com.mysql.jdbc.Driver
```

❏ URL:

```
jdbc:mysql://<server>:<port3306>/<database>
```

If you install multiple instances of the WebFOCUS Client, you need multiple repositories. To maintain multiple repositories in the same MySQL Database Server, create a unique database for each instance.

Oracle Connection Information

In Oracle, the account determines which tables and tablespaces are accessible within an Oracle Instance (ORASID). Your DBA should set up access to Oracle for you.

During the WebFOCUS Client installation, you are prompted for:

❏ Database Server Node (host name).

❏ Port (1521, by default).

❏ Credentials for the account that will own the repository.

❑ Oracle Instance (ORASID) for the repository.

❑ JDBC Driver (oracle.jdbc.OracleDriver).

❑ JDBC Path (ojdbc8.jar).

Based on this information, the installation creates the connection information:

❑ CLASS (Oracle 12c or higher):

    oracle.jdbc.OracleDriver

❑ URL:

    jdbc:oracle:thin:@*hostname:port:orasid*

If you install multiple instances of the WebFOCUS Client, you need multiple repositories. To maintain multiple repositories in the same Oracle Instance (ORASID), each repository must have a unique account (owner).

SQL Server Connection Information

In Microsoft SQL Server, you create a database and user ID within a SQL Server Database Server. These steps are described in *SQL Server Pre-Installation Steps* on page 204.

During the WebFOCUS Client installation, you are prompted for:

❑ Database name for the repository.

❑ Database Server Node (host name).

❑ Port (1433, by default).

❑ Account and password to access the repository. At installation, upgrade, or configuration time, the account used by the WebFOCUS installation process to connect to the repository database must be granted db_datawriter, db_datareader, and db_ddladmin roles on the repository database and schema. Alternatively, the object creation and initial data load may be run as a separate utility by a DBA.

❑ JDBC Driver (com.microsoft.sqlserver.jdbc.SQLServerDriver).

❑ JDBC Path (type the full path to the JDBC driver. Supported versions of JDBC drivers are posted at

https://kb.informationbuilders.com/topic/supported-rdbms-and-drivers

Based on this information, the installation creates the connection information:

❏ CLASS:

`com.microsoft.sqlserver.jdbc.SQLServerDriver`

❏ URL:

`jdbc:sqlserver://`*`hostname:port`*`;databasename=`*`database_name`*

If you install multiple instances of the WebFOCUS Client, you need multiple repositories. To maintain multiple repositories in the same SQL Server Database Server, create a unique database for each instance. You can use the same user ID for each instance or create a new user ID for each instance.

Sizing Guidelines

You can optionally use the following information to set up your repository. The numbers below assume a maximum of 10,000 schedules will be created at this site. In addition, review the logic below to be sure it applies to your environment.

Reference: ReportCaster Guidelines for Sizing the Relational Tablespaces

Table Name	Rows	Max Rows Width (bytes)	Notes
BOTACCES (Report Library only)	2,000	292	One record per access list and 1:m with BOTLIST.
BOTADDR	2,000	101	One record per address list and 1:m with BOTDEST.
BOTCAT (Report Library only)	20,000	751	One record for each schedule in the library. If the schedule is burst, each burst report is a record.
BOTCDATE	20,000	807	Could have multiple records per record in the BOTSCIT file (an average number might be 20). Added for the custom scheduling interval feature.

Table Name	Rows	Max Rows Width (bytes)	Notes
BOTDEST	20,000	210	One record per destination.
BOTDIST			
BOTJOURN			
BOTLDATA (Report Library only)	10,000	NA	One record per report in the library (blob).
BOTLIB (Report Library only)	10,000	713	One record per report in the library (blob).
BOTLIST (Report Library only)	20,000	298	One record per destination.
BOTLOG	10,000	228	One record per job run and a 1:m with BOTLOG2.
BOTLOG2	100,000	361	One record per job message.
BOTPACK	10,000	124	One record per schedule.
BOTPARMS	5,000	369	One record per parameter per task.
BOTSBDS	500	625	One record per designated blackout day per group.
BOTSCHED	10,000	2252	One record per schedule.
BOTSCIT	10,000	590	Could have one record per record in the BOTSCHED file. Added for the custom scheduling interval feature.
BOTSIT			
BOTSTATE	1	256	Contains 1 record. Added for the Failover feature.

Table Name	Rows	Max Rows Width (bytes)	Notes
BOTTASK	15,000	928	One task per schedule (can have multiple tasks per schedule so 1:m relationship with BOTSCHED).
BOTTELL			
BOTTSKEX	15,000	324	One per task.
BOTWATCH	20,000	330	One record per record in the BOTCAT file. Added for the Library Watch List feature.

The following formula for allocating table space sizes is recommended:

```
Storage needed = number of bytes of user data x overhead factor
```

For simple tables (one per table space), an overhead factor of 1.75 is recommended.

Note: The BOTLDATA table uses the BLOB data type, so you should size accordingly.

Other WebFOCUS Repository Utilities and Tasks

This section describes lesser used WebFOCUS Repository related information, utilities, and tasks.

WebFOCUS Repository Table Creation

The table creation utility creates or drops and creates all repository tables. To drop and re-create only specific table groups, you can use utilities available with your database software. This is useful if you wish to remove all library data, but keep your schedules and address books.

Procedure: **How to Create the WebFOCUS Repository Tables**

1. Ensure that the database server is running.

2. Launch the Command Prompt with the Run as administrator option.

   If you receive a message asking if you want to allow this app to make changes to your PC, click *Yes*.

   A Command Prompt window opens, which allows you to create tables or to drop and re-create tables.

3. In the Command Prompt window, navigate to *drive*:\ibi\WebFOCUS 82\utilities \WFReposUtil.

4. Type *WFReposUtilCMDLine.bat*, and then press the Enter key.

   This utility also generates the WFReposUtilCMDLine.log file in the same location.

   The utility uses the connection and sign-in information provided during the installation of WebFOCUS.

5. Type a selection from the following list of available options, and press the Enter key to continue.

   Option 4 create_insert is the default selection.

   ❏ 1) create

   ❏ 2) create_or_extend

   ❏ 3) insert

   ❏ 4) create_insert

   ❏ 5) update

   ❏ 6) drop

   ❏ 7) extract

   ❏ 8) create_ddl

   ❏ Q) quit

6. If you typed option 3, insert, or option 4, create_insert:

   a. When you receive a prompt to enter the Database Repository Username, type the name of a valid user that has permission to create and alter tables in your database Repository, and then press Enter.

   b. When you receive a prompt to enter the Database Repository Password, type the Password associated with the valid Database Repository user that you typed in sub-step a, and then press Enter.

      These values give the utility the authority to open the Database Repository and execute the insert or create insert commands. Values entered must match values stored in the install.cfg file.

   c. When you receive a prompt to enter the WebFOCUS Administrator ID, type a new User ID, and then press Enter.

   d. When you receive a prompt to enter a Password for the ID entered, type a new Password, and then press Enter.

These values become the new WebFOCUS Administrator User ID and Password. Be sure to type a User Name and Password that you can refer to in future operations.

Note: The special characters ^ $ % " are not permitted in the WebFOCUS Administrator User ID or Password during the create process.

7. If you typed any other option:

   a. When you receive a prompt to enter the Database Repository Username, type the name of a valid Database Repository user that has permission to create and alter tables in your database, and then press Enter.

   b. When you receive a prompt to enter the Database Repository Password, type the Password associated with the valid Database Repository user that you typed in sub-step a, and then press Enter.

   These values give the utility the authority to open the Database Repository and execute the command you typed in step 7. Therefore, the User ID you type must have permission to create and alter tables in your database. Values entered must match values stored in the install.cfg file.

8. If you receive a message listing an error and stating that the creation of the WebFOCUS Repository failed, open the WFReposUtilCMDLine.log file and review the log to identify the specific error messages that occurred at the time the utility terminated.

   Error messages can be generated by connection failures, the presentation of invalid database credentials, or failed attempts to connect to an inaccessible database.

9. If you receive a message stating that the creation of the WebFOCUS Repository completed successfully, type Exit to close the Command Prompt window.

   Note: If you can connect to the database, but cannot create tables, ensure that the ID you typed for the database during the WebFOCUS installation has create permissions. You can change this User ID, as explained in *Post-Installation Verification and Configuration* on page 133.

Changing the WebFOCUS Repository

If you wish to change repositories, you must adjust the connection parameters:

❏ CLASSPATH (parameter that specifies the location of the JDBC driver used for the selected WebFOCUS database)

❏ JDBC CLASS. Stored in install.cfg parameter: IBI_REPOS_DB_DRIVER

❏ JDBC URL. Stored in install.cfg parameter: IBI_REPOS_DB_URL

❏ Credentials. Stored in install.cfg parameters: IBI_REPOS_DB_USER and IBI_REPOS_DB_PASSWORD

❏ Update the JDBC path stored in \utilities\sertenv\utiluservars.bat

If you are using the same database server and just wish to change repositories, you normally only need to change the JDBC URL or credentials. If you are moving between database types (going from WebFOCUS to Db2), you must also adjust the JDBC CLASS and change the driver in CLASSPATH.

Procedure: **How to Change Connection Information**

1. Ensure the JDBC driver for the new database server is installed on the WebFOCUS Client and the Distribution Server machines.

   The JDBC driver information is stored in the *drive*:\utilities\setenv\utilsetvars.bat file under the JDBC_PATH parameter.

   Note: The value must be enclosed in double quotation marks (") if the path contains a space.

2. If this is a different driver, add the JDBC driver path to the CLASSPATH of the application server.

   For example, for Apache Tomcat, you can use the Start menu by selecting *Tomcat Configuration Utility*, under the Information Builders app. Then, select the *Java* tab and add a semicolon (;) plus the full path of the file to the end of the *Java Classpath* field.

3. Restart your application server.

4. Modify the install.cfg file and provide updated values for JDBC CLASS, JDBC URL, and Credentials.

   Note: The database password will get encrypted after restarting the application server.

5. Optionally, sign in to the WebFOCUS Administration Console from the Administration menu to review repository configuration information.

6. Click the *Configuration* tab, expand *Application Settings*, and then select *Repository*.

The Repository pane opens, as shown in the following image.

This allows you to see the values entered for the following:

❏ Database Driver

❏ Database URL

❏ Database User ID

❏ Database Password

Only Database Password can be changed through the Administration Console. The password will get encrypted and written to install.cfg.

7. If this is a different driver, update the JDBC driver path to the following ReportCaster configuration file:

drive:\ibi\WebFOCUS82\ReportCaster\bin\classpath.bat

and to the following value in the registry:

HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\Information Builders
\ReportCaster\WF82\PARAMETERS\JAVA\CLASSPATH

8. Restart the WebFOCUS web application and the Distribution Server.

> **Note:** You do not have to restart the entire application server which may have other applications deployed on it.

SQL Server Pre-Installation Steps

The following are general guidelines and information for creating an SQL Server database to be used as the WebFOCUS repository. These steps should be performed by a DBA to apply options and configuration settings that meets your organizations specifications.

❏ Ensure that SQL Server Authentication is enabled. See *How to Configure Security* on page 204.

❏ Create a SQL Server account that you will use to own this database. See *How to Create the Login ID* on page 205.

❏ Create a SQL Server database for the repository. See *How to Create the Repository Database* on page 206.

❏ Set up connectivity between the WebFOCUS Client and the SQL Server. See *How to Install the JDBC Driver for SQL Server* on page 206.

❏ If you are using SQL Server 2016, 2014, 2012, or 2008, you must enable TCP/IP since it is disabled by default. See *How to Enable TCP/IP in SQL Server 2016, 2014, 2012, and 2008* on page 207.

The WebFOCUS repository can reside on the same system as the WebFOCUS Client or on a different system, and can be stored in any JDBC-compliant database for which a driver exists. For more information, see *WebFOCUS Client Post-Installation Tasks* on page 133. When the Distribution Server is installed (as explained in *Installing the WebFOCUS Client* on page 49), you will be required to provide a supported database, JDBC driver, and authentication information (user ID and password).

Procedure: **How to Configure Security**

SQL Server provides the following authentication modes:

❏ **Windows Authentication.** Uses the same IDs as the Windows operating system.

❏ **SQL Server Authentication.** Uses IDs defined within SQL Server.

The JDBC driver that is used by WebFOCUS to connect to the SQL Server database does not support Windows Authentication mode. Perform the following steps to ensure that SQL Server Authentication mode is set:

1. Open the SQL Server Management Studio.

2. Connect to your database server.

3. Right-click your SQL Server and choose *Properties*.

4. On the left, click *Security*.

5. Ensure that *Server authentication* is set to *SQL Server and Windows Authentication mode*. If Authentication is set to *Windows Authentication mode*, change the setting.

6. Click *OK*.

7. If you changed the authentication mode, restart SQL Server.

Procedure: **How to Create the Login ID**

1. In the SQL Server Management Studio, expand your SQL Server and expand the *Security* folder.

2. Right-click *Logins*.

3. Select *New Login*.

4. Enter the user ID you wish to use in the *Login name* field.

5. Select *SQL Server authentication*.

6. Enter and confirm your password.

7. Uncheck the boxes for *Enforce password policy, Enforce password expiration*, and *User must change password at next login*.

8. Click *OK*.

Procedure: **How to Create the Repository Database**

1. In the SQL Server Management Studio, right-click the *Databases* folder.

2. Select *New Database*.

   A form appears for adding a database.

3. Type a name for the repository database in the *Database name* field.

4. In the Owner field, enter the user ID you created in .

   You can leave the remaining defaults. An initial size of 50MB for the database should be adequate for most departmental applications, but you may want to increase the initial size of the database if you anticipate a lot of use.

5. Under the Options panel, ensure you click *Collation* and select a Case-sensitive (CS) collation.

6. Click *OK*, and the database is created.

   It is a good idea to set this database as the default for your user ID. To do this, under Security and Logins, right-click your user ID and choose *Properties*. Then set the *Default database* and click OK.

Procedure: **How to Install the JDBC Driver for SQL Server**

The application server where the WebFOCUS Client and the ReportCaster Distribution Server is deployed on use the SQL Server JDBC driver to access the WebFOCUS Repository. You should download the SQL Server JDBC driver for your SQL Server release.

Supported versions of JDBC drivers are posted on:

https://kb.informationbuilders.com/topic/supported-rdbms-and-drivers

If WebFOCUS Client and ReportCaster Distribution Server are on separate machines, the driver must be on both machines. Running the driver installation program is not necessary, so you can manually copy the driver files between different machines.

During the ReportCaster Distribution Server installation, you are prompted for the file or files, as explained in *Installing the WebFOCUS Client* on page 49. In addition, if you manually configure your application server, you must also provide the file or files, as explained in *Configuring Web and Application Servers* on page 95.

Procedure: **How to Enable TCP/IP in SQL Server 2016, 2014, 2012, and 2008**

SQL Server 2016, 2014, 2012, and 2008 have TCP/IP disabled, by default. Since the WebFOCUS Client and ReportCaster require TCP/IP, you must perform the following steps to enable TCP/IP in SQL Server 2016, 2014, 2012, and 2008.

1. Open the SQL Server Configuration Manager.

2. Under the *SQL Server Network Configuration* select *Protocols for MSSQLSERVER*.

   A list of valid network protocols for the SQL Server engine is displayed in the right pane.

3. Select *TCP/IP* from the list of available protocols.

4. Right-click *TCP/IP* and select *Enable* from the context menu.

   A message is displayed, which indicates that the MSSQLSERVER service must be restarted before the change is applied.

5. Restart the MSSQLSERVER service.

MySQL Repository Set Up

MySQL is a free open source database server that you can use for the WebFOCUS Repository. Official information on MySQL is available at:

http://www.mysql.com/

This section is provided to help those less familiar with MySQL with the installation and configuration of MySQL for use with WebFOCUS.

Installing MySQL

You can install MySQL as follows:

1. Download the MySQL installation program from:

   http://www.mysql.com/

   The following page contains links to download MySQL:

   http://dev.mysql.com/downloads/mysql/5.0.html

   You can download either the regular Windows install or the Windows essential install.

   The following page includes documentation on installing, configuring, administering, and using MySQL:

   http://dev.mysql.com/doc/mysql/en/index.html

2. Execute the MySQL installation program.

   A typical installation is sufficient for WebFOCUS. You can keep all default settings during the installation and configuration.

3. Be sure to provide a password for the root account when prompted.

Increasing the max_allowed_packet Parameter Value

When you configure or migrate a MySQL repository for WebFOCUS 8.2, you must increase the size of the max_allowed_packet parameter. MySQL recommends that the value of the max_allowed_packet parameter for MySQL Client and MySQL Server should be increased for applications that use of binary large objects (BLOBs) and character large objects (CLOBs), such as WebFOCUS.

For more information on this topic and how to change the value of the max_allowed_packet parameter for MySQL Client and MySQL Server, see the following website:

http://dev.mysql.com/doc/refman/5.1/en/packet-too-large.html

Running MySQL

By default, you run MySQL as a Windows service. To start, stop, or restart MySQL:

1. Open the Services Window by selecting *Control Panel*, *Administrative Tools*, and then *Services*.

2. Right-click *MySQL* and choose *Start*, *Stop*, or *Restart*.

After you install MySQL, it may be running by default and may start automatically with Windows.

Administering MySQL

You administer MySQL using a command line tool. You can launch this from the Start menu by selecting *Programs*, *MySQL*, *MySQL Server 5.0*, and then *MySQL Command Line Client*.

Sign in to the command line tool using the password you specified during the MySQL installation.

The following prompt should appear:

```
mysql>
```

From this prompt, you can execute SQL commands and administer the database server.

MySQL documentation is available online at the following website:

http://dev.mysql.com/doc/mysql/en/index.html

Creating the WebFOCUS Reporting Database and User

You can use the MySQL command line tool to create a database and user for ReportCaster.

Procedure: How to Create a MySQL Database and User

1. Open and sign in to the MySQL Command Line Tool.

   You can do this by selecting Start, *Programs*, *MySQL*, *MySQL Server 5.0*, and then *MySQL Command Line Client*.

2. At the mysql> prompt, type the following to create a new empty database for WebFOCUS:

   ```
   CREATE DATABASE webfocus8;
   ```

   where:

   ```
   webfocus8
   ```

   Is the name of the database you will use for WebFOCUS repository. This is case-sensitive.

   You should receive a response like the following:

   ```
   Query OK, 1 row affected (0.03 sec)
   ```

3. Optionally, confirm that the database was created by typing the following command at the mysql> prompt:

   ```
   show databases;
   ```

   You should receive a response that includes your new database. For example:

```
+----------+
| Database |
+----------+
| mysql    |
| webfocus8|
| test     |
+----------+
3 rows in set (0.00 sec)
```

4. At the mysql> prompt, type the following to create a new MySQL user ID and grant it access to the WebFOCUS database:

```
GRANT ALL PRIVILEGES ON
  wf.* TO 'wfuser'@'%'
    IDENTIFIED BY 'wfpass';
```

where:

webfocus8

Is the name of the database you will use for WebFOCUS. This is case-sensitive in some environments.

%

Indicates that the database is accessible from any host. To limit which hosts can access the database, provide the host name or IP address of the machine running the WebFOCUS Client and the ReportCaster Distribution Server in place of %. If the application server is on a different machine, you will need to type the command twice to grant access from both hosts.

webfocus8

Is the user ID you are creating. This is case-sensitive in some environments. The user ID and password are part of MySQL and not the operating system.

rcpass

Is the password for the user ID. This is case-sensitive.

If you need to change your password, you can retype the GRANT command to provide the new password. The new values will overwrite any existing password.

5. Optionally, confirm that the user ID was added to the MySQL user table by typing the following command at the mysql> prompt:

```
use mysql
```

This selects the default mysql database within the MySQL Database Server.

Ensure that the user ID you created exists and is associated with your database by typing the following command at the mysql> prompt:

```
select user,host,db from db;
```

This query returns all user IDs and associated host names with the databases they can access. For example:

```
+--------+------+---------+
| user   | host | db      |
+--------+------+---------+
| wfuser |%     | wf      |
+--------+------+---------+
```

After making user ID changes, you can ensure they are refreshed by typing the following command at the mysql> prompt:

```
FLUSH PRIVILEGES;
```

6. Optionally, specify the database you created for the repository by typing the following command at the mysql> prompt:

```
use wf
```

where:

wf

> Is the name of the database you will use for WebFOCUS. This is case-sensitive in some environments.

7. Optionally, confirm there are no tables in the database by typing the following command at the mysql> prompt:

```
show tables;
```

If you have not yet created tables, you should receive the following:

```
Empty set (0.00 sec)
```

After creating the repository tables, you can use this to confirm that the tables exist.

Installing the MySQL JDBC Driver

The MySQL JDBC driver is known as MySQL Connector/J 3.1.

1. Download the latest MySQL Connector/J 3.1 from:

   http://www.mysql.com/

   The following page contains links to download MySQL Connector/J 3.1:

   http://dev.mysql.com/downloads/connector/j/3.1.html

   Download the latest ZIP file containing the source code and Java binary. For example:

   `mysql-connector-java-3.1.14.zip`

   MySQL has an aggressive release cycle, so the number in this file name may vary.

2. Use Winzip to extract the MySQL JDBC driver JAR file. For example:

   `mysql-connector-java-3.1.14-bin.jar`

3. Specify the path to and including this JAR file when prompted during the WebFOCUS Client and ReportCaster Distribution Server installation. The path to and including this JAR file must be in the CLASSPATH variable used by the WebFOCUS Client application server and by the ReportCaster Distribution Server. Specifying the directory containing the JAR file is not sufficient.

D

Additional WebFOCUS Configuration Options

This appendix includes uncommon configurations. Most users do not need the configurations discussed in this appendix. The following configuration options are discussed:

❏ Installing multiple instances of WebFOCUS on a single machine (*Installing Multiple WebFOCUS Instances on the Same Machine* on page 213).

❏ Setting optional Tomcat security options (*Tomcat Security Tips* on page 216).

In this appendix:

❏   Installing Multiple WebFOCUS Instances on the Same Machine

❏   Tomcat Security Tips

Installing Multiple WebFOCUS Instances on the Same Machine

You can run multiple copies (instances) of WebFOCUS on the same machine, if necessary. To do this, install WebFOCUS multiple times, making sure to change default locations, program folders, and ports.

This section provides an overview. Detailed information varies depending on your web server and application server.

Installing Additional WebFOCUS Instances

No special steps are required to install and configure the first instance of WebFOCUS. If WebFOCUS is already installed and you just wish to add a second instance, you can keep the existing instance as is. However, if no WebFOCUS instances have been installed yet, you may wish to use non-default locations and names for all instances.

When installing a second WebFOCUS instance, keep the following in mind:

❏ When installing the second WebFOCUS Reporting Server, do not choose to update an existing installation or create a new configuration. Instead, run a completely new installation.

If a WebFOCUS Reporting Server is already installed, select *No* if prompted to replace the existing installation. If multiple WebFOCUS Reporting Servers are installed, select the *New Installation/Configuration* option to not upgrade any of them.

Note: It is possible to use the same WebFOCUS Reporting Server with two instances of WebFOCUS Client.

❑ Place the components for each instance in a different directory. Some WebFOCUS components must be installed in an \ibi\ directory, so use root directories such as:

`C:\wfTest\ibi`

`C:\wfDev\ibi`

❑ Change the default program folders when installing additional instances. For example, add some text to the end of the default names.

❑ `WebFOCUS 82 Server - Test`

❑ `WebFOCUS 82 Server - Dev`

❑ `WebFOCUS 82 - Test`

❑ `WebFOCUS 82 - Dev`

❑ `ReportCaster 82 - Test`

❑ `ReportCaster 82 - Dev`

❑ Change the default ports for the WebFOCUS Reporting Server and ReportCaster Distribution Server, so that each instance uses a different set of ports.

❑ When specifying the web server host name, be sure to use the correct port and the exact host name you will use for the website. If this is a separate port, provide the correct port. If this is a virtual host name, be sure to use the name you will set up in the DNS, including the domain.

❑ For the WebFOCUS repository, create a separate instance.

❑ If you are using IIS, ensure you are using a server operating system.

❑ Do not choose any of the automatic web server or application server configuration options for additional WebFOCUS instances. You must manually configure all but the first WebFOCUS instance you install.

Install WebFOCUS components, keeping these points in mind. For details, see *Installing the WebFOCUS Client* on page 49.

Configuring Multiple Web and Application Servers

Each instance of WebFOCUS requires a separate web server, website, or application server instance. You can set up each web server or application server instance to either listen on a separate port or use a virtual host name. Your options depend on whether you use Apache Tomcat with or without Microsoft IIS.

❏ **Apache Tomcat Stand-alone**

When using Tomcat as both the web server and application server, you run two separate instances of Tomcat and set them up to listen on different ports. For example, you could access one WebFOCUS instance at:

`http://hostname:`**8080**`/ibi_apps/WFServlet`

and the other WebFOCUS instance at:

`http://hostname:`**9080**`/ibi_apps/WFServlet`

To create a second Tomcat 8.0 instance, you can copy the Tomcat directory structure, set unique ports, and create a new service using the tomcat8.exe //IS//Tomcat8Test option. You must then edit the registry values for the new service so they are similar to those for the default service, but specify the new instance paths.

❏ **Microsoft IIS with Apache Tomcat**

Microsoft IIS can be used as the web server, while Tomcat can be used as the application server. This can involve IIS listening on separate ports or using the HTTP host header (virtual host name) feature.

When using virtual host names, you configure the DNS server so that multiple host names resolve to the same machine. When IIS receives a request for a webpage or other resource, IIS can determine which host name was used when the request was made by looking at the HTTP host header. IIS then uses the host name to determine which website was requested.

For example, if you are using virtual host names, you could access one instance of WebFOCUS at:

`http://www.`**wfDevhost**`.com/ibi_apps/WFServlet`

and the other WebFOCUS instance at:

`http://www.`**wfTesthost**`.com/ibi_apps/WFServlet`

Although different host names are used, they both resolve to the same machine and are received by the same IIS web server.

For Tomcat with IIS, you run two separate instances of Tomcat and set them up to listen on different ports. You then create two IIS websites and ensure that each IIS website sends servlet requests to a different Tomcat instance. You can configure the two IIS websites to either use different ports or virtual host names.

To create a second Tomcat 8.0 instance, copy the Tomcat directory structure, set unique ports, and create a new service using the tomcat8.exe //IS//Tomcat8Test option. You must then edit the registry values for the new service so they are similar to those for the default service, but specify the new instance paths.

Tomcat Security Tips

This section provides some basic tips on security concerns when running Tomcat in a production WebFOCUS environment. For development environments that are safely behind a firewall, this section is normally optional. You must be an administrator to the Windows machine to perform tasks in this section.

Tomcat User ID and NTFS Permissions

By default, when Tomcat runs as a Windows service, it runs as the Local System account that was created with Windows. The Local System account has full access to your Windows system. In a production environment, it is a good idea to run Tomcat as a user who has more restricted access. To do this, create a user ID for Tomcat, configure Tomcat to use that ID, and set NTFS permissions to grant that ID full access to Tomcat, WebFOCUS, and other directories it needs.

Procedure: **How to Create a Tomcat User ID**

1. Open the Windows Control Panel, *Administrative Tools*, and *Computer Management*.

2. Under System Tools, expand *Local Users and Groups*.

3. Right-click *Users* and select *New User*.

4. Name the new user and provide a password.

5. Deselect *User must change password at next logon*, and select *Password never expires*.

6. Click *Create*.

   The Tomcat user is created and added to the users group. An administrator may wish to move Tomcat into a special group with even less access to the system. However, if you do this, you must ensure Tomcat can read and execute from all the Java directories and any required JDBC drivers.

7. Click *Close* to close the New User window.

Procedure: **How to Configure Tomcat to Use the Tomcat User ID**

1. Open the Windows Services window.

2. If Tomcat is started, right-click *Apache Tomcat* and select *Stop*.

3. Right-click *Apache Tomcat* and select *Properties*.

   The Apache Tomcat Properties window appears.

4. Select the *Log On* tab.

   By default, this is set to the Local System account.

5. Click *This account*.

6. Specify the Tomcat user ID in the *This account* field.

7. Type and confirm the password you defined for the Tomcat user ID. If you ever change this password, you must change it here as well.

8. Click *OK*.

   A message similar to the following should display:

   ```
   This account .\Tomcat has been granted Log On As a Service right.
   ```

Reference: **Permissions Concerns**

Required NTFS permissions and user IDs vary depending on your system, environment, security needs, and administrator preferences. Tomcat, IIS, and the WebFOCUS Reporting Server normally run as separate accounts and there are cases where they all read or write to the same directory or file. It is a good idea to create a group containing all the required user IDs.

The *WebFOCUS Security and Administration* manual contains additional information on permissions.

If the Tomcat user is not in the default Users group and/or you have restricted permissions throughout your system, ensure the Tomcat user ID can read from the directories containing any JDBC drivers. In addition, ensure Tomcat can read and execute the directories containing the Java JDK.

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WebFOCUS

WebFOCUS and ReportCaster
Installation and Configuration
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Release 8206

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