WebFOCUS and ReportCaster Installation and Configuration for Windows
Release 8.1 Version 05M

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Preface

This documentation 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

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# Documentation Conventions

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

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<td><strong>THIS TYPEFACE</strong></td>
<td>Denotes syntax that you must enter exactly as shown.</td>
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<td>or</td>
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<tr>
<td><em>this typeface</em></td>
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</tr>
<tr>
<td><em>this typeface</em></td>
<td>Represents a placeholder (or variable), a cross-reference, or an important term.</td>
</tr>
<tr>
<td>underscore</td>
<td>Indicates a default setting.</td>
</tr>
<tr>
<td>Key + Key</td>
<td>Indicates keys that you must press simultaneously.</td>
</tr>
<tr>
<td>{}</td>
<td>Indicates two or three choices. Type one of them, not the braces.</td>
</tr>
<tr>
<td>[ ]</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>Separates mutually exclusive choices in syntax. Type one of them, not the symbol.</td>
</tr>
<tr>
<td>...</td>
<td>Indicates that you can enter a parameter multiple times. Type only the parameter, not the ellipsis (...).</td>
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To learn about the full range of available support services, ask your Information Builders representative about InfoResponse Online, or call (800) 969-INFO.
Information You Should Have

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

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

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Thank you, in advance, for your comments.

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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 35.
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:

- **Managed Reporting (BI Portal and Dashboard).** Managed Reporting enables your Tools 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.

- **Mobile Favorites.** Mobile 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 Mobile Favorites 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 Developer Studio.** Developer Studio can be installed on Windows and provides a development environment for WebFOCUS and Maintain applications. Developer Studio enables you to create advanced applications using a Windows GUI environment. For more information, see the Developer Studio installation CD and documentation.

- **WebFOCUS RStat.** WebFOCUS RStat is a statistical modeling workbench embedded in Developer Studio. 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 Visual Discovery.** Visual Discovery lets you create advanced data visualizations for executive level Dashboards. For more information, see the Using WebFOCUS Visual Discovery to Develop Analytic Dashboards 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.
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 28.

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, review all the requirements and fill out the Installation Worksheet in *WebFOCUS and ReportCaster Installation Requirements* on page 35. If you use ReportCaster, be sure to prepare for the repository.

3. **WebFOCUS Reporting Server Installation.** Install the WebFOCUS Reporting Server on machines with access to your source data, as explained in *Installing the WebFOCUS Reporting Server* on page 51.

4. **WebFOCUS Client and ReportCaster Installation.** Install the WebFOCUS Client and ReportCaster, as explained in *Installing the WebFOCUS Client* on page 67.

5. **Web Server or Application Server Configuration.** Configure your web server or application server, as explained in *Configuring Web and Application Servers* on page 89.

   **Important:** For a split-tier environment, see *Configuring WebFOCUS in a Split Web-Tier and Application Server-Only Environment* on page 149.

6. **WebFOCUS Post-Installation Tasks.** Verify the WebFOCUS configuration and optionally change default settings, as explained in *WebFOCUS Client Post-Installation Tasks* on page 145.

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. When upgrading from a previous release, review the *WebFOCUS Upgrade Considerations* document for information on expected configuration and functional changes. These documents are available online at the WebFOCUS Release Notes page:

http://documentation.informationbuilders.com/wf_rel_notes.asp

**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 2.4 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 on page 41.
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:

\[ \text{http://hostname:port/ibi_apps/signin} \]

where:

\[ \text{hostname:port} \]

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:

  \[drive: \text{ibi} \text{profiles} \text{admin.cfg}\]
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 145.

- **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 explain in the *Server Administration* manual.
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. When upgrading from a previous release, review the WebFOCUS Upgrade Considerations document for information on expected configuration and functional changes. These documents are available online at the WebFOCUS Release Notes page:

http://documentation.informationbuilders.com/wf_rel_notes.asp

In this chapter:

- WebFOCUS and ReportCaster Installation Requirements
- WebFOCUS Repository Setup
- Installation Worksheet

WebFOCUS and ReportCaster Installation Requirements

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

Full Installation Requirement

A full installation is required when you upgrade from WebFOCUS 7.x. To migrate from WebFOCUS 7.x and preserve your Managed Reporting repository, Dashboard views, and customizations, do not uninstall WebFOCUS 7.x.

Upgrade Installation Requirement

If you decide to upgrade your current WebFOCUS installation, you must clear the cache in your application server after the upgrade process is complete. 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), which are located in the following directory:

<catalina_home>\work\Catalina\localhost
Before installing a service pack or running an upgrade installation, ensure that the WebFOCUS web applications have been stopped (or just bring down the application server). In addition, the Distribution Server must be stopped.

**JVM and J2SE Support Information**

WebFOCUS 8 requires Java Virtual Machine (Java VM) Version 6 or higher on the system that is hosting the application server where the WebFOCUS Reporting Server and 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 6 or higher.


See the *WebFOCUS 8 Tools Consolidation Statement* for information on the applet tools and interfaces that are consolidated in WebFOCUS 8 and have been replaced with web-based Rich Internet Application facilities that will also eliminate the requirement to have a specific release of the Java VM present on each end-user machine.

**Windows 64-bit Support**

The WebFOCUS installation program can install WebFOCUS and ReportCaster on Windows AMD or x64 64-bit machines.

When installing on a 64-bit machine:

- If the installation detects a 32-bit Java on the machine, you will be prompted to select a 32-bit or 64-bit installation. The default is 64-bit.
- If the machine has 32-bit Apache Tomcat or Apache Derby running, but you choose to install the 64-bit product, a new 64-bit version of Tomcat or Derby will be installed under the ibi directory structure (for example, \ibi\tomcat or ibi\derby).
## 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. If WebFOCUS components are installed on different machines, requirements apply to all machines, except where noted.

<table>
<thead>
<tr>
<th>Item</th>
<th>Options or Requirements</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating System</strong></td>
<td>Microsoft® Windows® Server 2012 and 2012 R2</td>
<td>☑️ Microsoft Windows 8 and 7 can be used in development environments only.</td>
</tr>
<tr>
<td></td>
<td>or</td>
<td>☑️ If running the installation on Windows 7 and higher or Windows Server editions 2008 and higher, you must sign in as the administrator.</td>
</tr>
<tr>
<td></td>
<td>Microsoft Windows Server 2008 or 2008 R2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Microsoft Windows Server 2008 R2 Hyper - V Virtualization</td>
<td></td>
</tr>
<tr>
<td><strong>Application Server/Servlet Container</strong> (WebFOCUS Client Machine)</td>
<td>Must meet both J2EE 5 web container and J2SE 6 specifications. This includes servlet API 2.5 specifications.</td>
<td>In WebFOCUS 8, Apache Tomcat version 8.0.21 is provided and can be installed with WebFOCUS. For more information on Apache Tomcat™ and other supported application servers, see <a href="#">Web Server and Application Server Requirements</a> on page 41. To run Apache Tomcat as a 64-bit service on Windows AMD 64-bit machines, Tomcat version 8.0.21 is required. It is provided with the WebFOCUS 8 installation.</td>
</tr>
</tbody>
</table>
### WebFOCUS and ReportCaster Installation Requirements

<table>
<thead>
<tr>
<th>Item</th>
<th>Options or Requirements</th>
<th>Notes</th>
</tr>
</thead>
</table>
| Web Server            | 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 41.                           |                                                                                                      |
| 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. |
| Java (32-bit)         | Java 6 or higher.                                                                                        | Oracle Java 8 Update 45 (8u45) is provided and automatically installs with WebFOCUS 8.                                                                   |
| Java (64-bit)         |                                                                                                           |                                                                                                      |
| 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 42. |
| User ID               | You must install as an administrator to the Windows machine.                                              |                                                                                                      |
| Disk Space            | **WebFOCUS Reporting Server:** 1.5 GB  
**WebFOCUS Client:** 3 GB  
**ReportCaster Distribution Center:** 35MB | Approximately, double this space should be available during the installation process. Additional space is needed for your application servers.                                                              |
End User Machine Requirements

This section explains the desktop and accessibility compliance (Section 508) requirements for running WebFOCUS and ReportCaster.

Section 508 Compliance

WebFOCUS HTML report accessibility provides support for assistive technologies, such as screen readers, when the report request complies with the accessibility requirements documented in Technical Memo 4505: WebFOCUS HTML Report Accessibility Support. For more information on end-user configuration requirements for WebFOCUS HTML report accessibility support, see:

http://techsupport.informationbuilders.com

For information on specific accessibility requirements for WebFOCUS Business Intelligence (BI) Portal, InfoAssist, and ReportCaster, see the WebFOCUS Accessibility Guide.

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.

<table>
<thead>
<tr>
<th>Item</th>
<th>Options or Requirements</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory (RAM)</td>
<td>4 GB or higher.</td>
<td>Refer to any requirements for your application server.</td>
</tr>
<tr>
<td>Processor Speed</td>
<td>500 MHz or higher.</td>
<td>Refer to any requirements for your application server.</td>
</tr>
</tbody>
</table>

| Web Browser        | Microsoft Internet Explorer 9.0 32-bit, Internet Explorer 10 32-bit, and Internet Explorer 11 32-bit are certified with WebFOCUS 8. Mozilla Firefox® 34. | All features are supported on Internet Explorer®. You should use Internet Explorer for administration tools and development interfaces, such as InfoAssist. For more details on browser support, access the following support website: http://techsupport.informationbuilders.com/tech/wbf/wbf_tmo_027.html |
WebFOCUS and ReportCaster Installation Requirements

### Adobe Acrobat Reader
WebFOCUS 8 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 is certified with Adobe® Flash® Player 10 and higher. For more information on Adobe Flash Player requirements, see: [http://techsupport.informationbuilders.com](http://techsupport.informationbuilders.com)

### 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.

<table>
<thead>
<tr>
<th>Component</th>
<th>Number of Ports</th>
<th>Default Ports</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>WebFOCUS Reporting Server</td>
<td>4 consecutive ports</td>
<td>8120 (TCP)</td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8121 (HTTP)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>8122</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>8123</td>
<td></td>
</tr>
<tr>
<td>WebFOCUS Client</td>
<td>Runs through web and application servers</td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>ReportCaster Distribution Server</td>
<td>1 port</td>
<td>8200</td>
<td>When you install ReportCaster, you are prompted for this port. Additional ports may be needed when Workload Manager and/or Failover options are configured.</td>
</tr>
</tbody>
</table>
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 36. 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 28.

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 installation configures Tomcat. For other application servers, see *Java Memory Issues* on page 190.

WebFOCUS and ReportCaster Machine Java Requirements

JVM 6 is the minimum JVM version required for the WebFOCUS and ReportCaster application servers, as well as the Distribution Server. If you use Apache Tomcat 8, Java 7 or higher is required on the WebFOCUS Client machine. The WebFOCUS Client installation can install JRE 8 for you. We recommend installing the JDK on a WebFOCUS Reporting Server machine.
Note: For all WebSphere releases, apply the IBM APAR patch to change the JSP compiler level to 6. For steps to apply the IBM APAR patch, go to How to Apply the IBM APAR on page 129.

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.

If you use ReportCaster, it is recommended to install the provided JRE 8. The Distribution Server will automatically use that Java release.

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

Depending on the platform used, the WebFOCUS Repository can be stored in a Derby, Microsoft SQL Server, Oracle, DB2, MySQL®, or PostgreSQL database. Information for JDBC driver versions for these supported JDBC-compliant databases can be found at the following link:

WebFOCUS 8.1.x Client Supported RDBMS and JDBC Drivers
Repository Options

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

- **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.

- **Derby 10.9.1.0.** 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.


If you are unfamiliar with the JDBC driver and its requirements, information is provided in Additional WebFOCUS Repository Topics and Tasks on page 211.

**Note:**

- The Microsoft SQL Server collation must be set to case sensitive for the WebFOCUS database. Case-insensitive collation is not supported.

- The SQL Server collation sequence default is case insensitive. To change the collation sequence of an existing repository, see Technical Memo 4749, Changing the Microsoft SQL Server Collation Sequence.

- **MySQL 5.0.** 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 228 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 Releases 8.0.x and 8.1.x do not support the MySQL utf8 encoding character set.

- **Oracle™ 10G, 11G, or 11GR2.** 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 ojdbc6.jar depending on the Java release.

- **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.

- **PostgreSQL.** Java 1.7 or higher is required when using a PostgreSQL database for the WebFOCUS repository. This is a requirement of the PostgreSQL JDBC driver, as it is not compatible with Java 1.6.

For more information about repositories, see Additional WebFOCUS Repository Topics and Tasks on page 211.

**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 211.
**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 211.

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.

**Installation Worksheet**

During the installation process, you are prompted for values required by the WebFOCUS Reporting Server, WebFOCUS, and ReportCaster. Use the following worksheet to gather the information you will need during the installation.

**WebFOCUS Reporting Server Installation Parameters**

You will need these settings for *Installing the WebFOCUS Reporting Server* on page 51.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the twelve digit serial number printed on the packing slip included with your WebFOCUS shipment?</td>
<td></td>
</tr>
<tr>
<td>What is the password for the user ID you are using to install the WebFOCUS Reporting Server?</td>
<td></td>
</tr>
<tr>
<td>What is the host name or IP address of the machine where you will install the WebFOCUS Reporting Server?</td>
<td></td>
</tr>
</tbody>
</table>
### WebFOCUS Client Installation Parameters

You will need these settings for *Installing the WebFOCUS Client* on page 67.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is your license code and site code?</td>
<td></td>
</tr>
<tr>
<td>What is the host name or IP address for the WebFOCUS Reporting Server?</td>
<td></td>
</tr>
<tr>
<td>What is the installation destination?</td>
<td></td>
</tr>
<tr>
<td>You must enter the folder name.</td>
<td></td>
</tr>
<tr>
<td>What is the TCP port number for the WebFOCUS Reporting Server?</td>
<td></td>
</tr>
<tr>
<td>The default port is 8120. If you are doing a typical installation, you will not be prompted for this setting.</td>
<td></td>
</tr>
<tr>
<td>Which web server or application server configuration are you using?</td>
<td></td>
</tr>
<tr>
<td>If the installation detects a valid Java version, you will be prompted whether to install and configure Tomcat.</td>
<td></td>
</tr>
<tr>
<td>For example, Tomcat stand-alone, Tomcat with IIS, or WebSphere.</td>
<td></td>
</tr>
<tr>
<td>What is the host name for the web server?</td>
<td></td>
</tr>
<tr>
<td>This is the host name that end users will use when accessing WebFOCUS through a web browser. The default is localhost. If you are running a typical installation, you will not be prompted for this setting. If you will use a virtual host name or a web server on another machine to forward requests through a firewall, provide that host name. This can be changed after the installation and is primarily needed for Report Library, ReportCaster, and Managed Reporting to communicate.</td>
<td></td>
</tr>
</tbody>
</table>
2. WebFOCUS and ReportCaster Installation Requirements

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What is the HTTP port number for the web server?</strong></td>
<td></td>
</tr>
<tr>
<td>This is the port that end users will use when accessing WebFOCUS through a web browser. The default is 8080. However, check your web server configuration to verify this value. If you are using an application server as both web and application server, use the application server HTTP port.</td>
<td></td>
</tr>
<tr>
<td><strong>What is the host name or IP address of the machine running your email server?</strong></td>
<td></td>
</tr>
<tr>
<td><strong>What type of database will hold your WebFOCUS Repository?</strong></td>
<td></td>
</tr>
<tr>
<td>Available choices include Apache Derby, DB2, MSSQL 2014, MSSQL 2012, MSSQL 2008, MSSQL 2005, MYSQL, Oracle, and Other DB. You may choose to have the installation program install Derby for you. Otherwise, you may choose an existing database.</td>
<td></td>
</tr>
<tr>
<td><strong>What is the name of the database that will hold the repository?</strong></td>
<td></td>
</tr>
<tr>
<td>This does not apply if you are using Oracle.</td>
<td></td>
</tr>
<tr>
<td><strong>What is the database host (node) name?</strong></td>
<td></td>
</tr>
<tr>
<td><strong>What is the database port?</strong></td>
<td></td>
</tr>
<tr>
<td><strong>What is the user ID to access the repository database?</strong></td>
<td></td>
</tr>
<tr>
<td><strong>What is the password to access the repository database?</strong></td>
<td></td>
</tr>
<tr>
<td><strong>What is the database driver?</strong></td>
<td></td>
</tr>
<tr>
<td><strong>What is the JDBC Path?</strong></td>
<td></td>
</tr>
<tr>
<td>This is the full name, including path, to an existing file on your system that contains the database driver.</td>
<td></td>
</tr>
<tr>
<td><strong>What is the database URL?</strong></td>
<td></td>
</tr>
<tr>
<td>If you chose Other for your database type, you will be prompted for the connection URL.</td>
<td></td>
</tr>
</tbody>
</table>

The WebFOCUS Client Installation may also ask for the following parameters:
### ReportCaster Installation Parameters

The remainder of this worksheet is only necessary when installing ReportCaster. You will need basic parameters and repository parameters. You will need these settings for *Installing the WebFOCUS Client* on page 67.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>What type of database will hold your WebFOCUS Repository?</td>
<td></td>
</tr>
<tr>
<td>Available choices include Apache Derby, DB2, MSSQL 2014, MSSQL 2012, MSSQL 2008, MSSQL 2005, MySQL, Oracle, and Other DB.</td>
<td></td>
</tr>
<tr>
<td>What is the Location Name associated with the repository?</td>
<td></td>
</tr>
<tr>
<td>Required for DB2 on z/OS platforms.</td>
<td></td>
</tr>
<tr>
<td>What is the user ID to access the repository database?</td>
<td></td>
</tr>
<tr>
<td>What is the password to access the repository database?</td>
<td></td>
</tr>
<tr>
<td><strong>Parameter</strong></td>
<td><strong>Value</strong></td>
</tr>
<tr>
<td>------------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td><strong>What is the name of the database that will hold the repository?</strong></td>
<td></td>
</tr>
<tr>
<td>This does not apply to Oracle.</td>
<td></td>
</tr>
<tr>
<td><strong>What is the Oracle instance?</strong></td>
<td></td>
</tr>
<tr>
<td>Asked when database type is Oracle.</td>
<td></td>
</tr>
<tr>
<td><strong>What is the host name or IP address of the database machine?</strong></td>
<td></td>
</tr>
<tr>
<td><strong>What is the port number of the database server?</strong></td>
<td></td>
</tr>
<tr>
<td><strong>What is the database driver?</strong></td>
<td></td>
</tr>
<tr>
<td><strong>What is the JDBC Path?</strong></td>
<td></td>
</tr>
<tr>
<td>This is the full name, including path, to an existing file on your system that contains the database driver.</td>
<td></td>
</tr>
<tr>
<td><strong>What is the database URL?</strong></td>
<td></td>
</tr>
<tr>
<td>If you chose Other for your database type, you will be prompted for the connection URL.</td>
<td></td>
</tr>
<tr>
<td><strong>What is the host name or IP address of the ReportCaster?</strong></td>
<td></td>
</tr>
<tr>
<td>This prompt is asked during a custom installation.</td>
<td></td>
</tr>
<tr>
<td><strong>What is the distribution server port number?</strong></td>
<td></td>
</tr>
<tr>
<td>This prompt is asked during a custom installation. The default value is 8200.</td>
<td></td>
</tr>
<tr>
<td><strong>Do you wish to start the Distribution Server at the end of the install?</strong></td>
<td></td>
</tr>
<tr>
<td>This prompt is asked during a custom installation.</td>
<td></td>
</tr>
</tbody>
</table>
This chapter explains how to install the WebFOCUS Reporting Server on Windows. It is a simplified, WebFOCUS-specific version of the Server Installation for Windows chapter in the Server Installation WebFOCUS Reporting Server DataMigrator Server manual.

If you are installing the WebFOCUS Reporting Server on a platform other than Windows, see the Server Installation WebFOCUS Reporting Server DataMigrator Server manual.

After your WebFOCUS Reporting Server is installed, proceed to Installing the WebFOCUS Client on page 67.

**Note:** Throughout the manual, you will see references to 8.1 and 7.7. While 8.1 is the current release, certain references to 7.7 must be retained for the purpose of upgrading.

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

```
drive:\n```

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:**

- Installing the WebFOCUS Reporting Server
- Verifying and Configuring the WebFOCUS Reporting Server
- Silent Installation of the WebFOCUS Reporting Server

### Installing the WebFOCUS Reporting Server

The WebFOCUS Reporting Server is installed through an installation program which prompts you for parameters. The program installs components that provide data access, translation, computation, formatting, and other back-end processes.

Before beginning the installation, review Introducing WebFOCUS and ReportCaster Installation on page 19 and WebFOCUS and ReportCaster Installation Requirements on page 35 for requirements, configuration options, and background information.
How to Install and Configure the WebFOCUS Reporting Server

Procedure:

1. Ensure you have the installation files:
   - If you received the installation on CD, insert the Server Installation CD into your CD drive.
   - If you received the installation through a download, navigate to the directory where you saved the installation file. If you downloaded a ZIP file, unzip it to a directory on your machine.

2. Execute the installation program.
   In some environments, the installation begins when you insert your CD in the drive. Otherwise, execute the setup.exe file with the installation files.
   In most environments, the Choose Setup Language window opens when the installation begins.
   Server fields and prompts will appear in the selected language.

3. Choose a language and click Next.
   If another instance of the WebFOCUS 8.1 Reporting Server is already installed on your machine, you are prompted to overwrite the existing installation with the new build.
   - Select No to create additional installations or configurations.
   - Select Yes to apply a service pack and the installation begins immediately.
   If multiple WebFOCUS 8.1 Reporting Servers or Clients are already installed, you may be prompted to choose one to upgrade or to create a new installation.
   - Select New Installation/Configuration to install a new instance of the server.
The installation program begins, and the Software Registration window opens, as shown in the following image.

4. Type the User Name, Company, and ten or twelve digit License code, and then click Next.

**Note:** The License code is printed on the packing slip included with your WebFOCUS shipment. Be sure to type it using the format:

```
nnn-nnn-nnnn
```

or

```
nnn-nnn-nnnn-nn
```

Information about your license will be displayed.
5. Click OK.

If an instance of the WebFOCUS 81 Reporting Server is already installed on your machine, a window appears with two options:

- **Install and create 81 configuration** lets you completely install a second instance of the server and is recommended if you install more than one WebFOCUS instance.

- **Create additional 81 configuration** lets you run multiple instances of the server without installing the program and binary files twice.

The Software License Agreement window opens.

6. Click Yes if you accept the terms of the license agreement.

7. The Select Program Folder window opens.

8. Accept the default or specify a new program folder and click Next.

   When installing multiple instances of the server, specify a different folder for each instance. For example:

   - **WebFOCUS 81 Server Test**
   - **WebFOCUS 81 Server Dev**

   The Select the Standard Location Prompt window opens.

9. Leave **Drive and Directory Name** selected and click Next.

   **Note:** The **Network Share and Directory Name** option is not supported with the WebFOCUS Reporting Server.

   The Select Directories window opens.

10. Review the default or specify new locations for WebFOCUS directories, and click Next. The installation directory is also referred to as EDAHOME and the configuration directory is also referred to as EDACONF.
Note:

- When installing multiple instances on the same machine, change default directories so that the new installation does not overwrite the existing installation. It is a good idea to place each instance in its own root ibi directory. For example:
  
  C:\wfTest\ibi
  C:\wfDev\ibi

- When creating a new configuration, but not reinstalling the application files, change only the default configuration directory. If you have more than one full installation and are creating a new configuration, you are prompted to specify to which existing installation directory your new configuration will apply.

- If the WebFOCUS Client and Server are on the same machine and drive, they share the same Application Directory (APPROOT), by default. This means both client files (for example, HTML, GIF) and server files (for example, FEX, MAS) reside in the same directory. If you wish to ensure separation of client and server files, you can change the Application Directory. However, this prevents using the projects area of Developer Studio with this environment (project-based development).

The Configure Basic Server Information window opens.

11. Type the necessary sign-in credentials and port information, as explained in the following table, and then click Next.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server Administrator Password</td>
<td>Type the password you use to sign in to the Windows machine. The server cannot start with Security OPSYS if this is not provided. It is recommended that you type the password even if you will run the server with security OFF.</td>
</tr>
<tr>
<td>HTTP Listener Port</td>
<td>Accept the default or type a new port for the Web Console. This is normally one more than the TCP port. This is the first of three ports that the server uses.</td>
</tr>
<tr>
<td>TCP Listener Port</td>
<td>Accept the default or specify a new base TCP Port. This is normally one less than the HTTP Listener. This is the port WebFOCUS Client will use when accessing the server.</td>
</tr>
</tbody>
</table>
When installing multiple instances or configurations of the server on the same machine, each instance or configuration must use unique ports.

12. Click Next to begin the installation.

The Review Selected Product Parameters window opens.

13. Click Continue.

The Copying Files window opens. When the installation is finished, the Setup Complete window opens.

14. Ensure that Do not start at this point is selected, then click Finish.

Verifying and Configuring the WebFOCUS Reporting Server

After installing the WebFOCUS Reporting Server, verify that it runs properly by performing tests and viewing the Web Console as explained in this section.

Starting the WebFOCUS Reporting Server

There are several security levels in which you can start the WebFOCUS Reporting Server. For a description of these levels, see Introducing WebFOCUS and ReportCaster Installation on page 19.

Procedure: How to Start the WebFOCUS Reporting Server

Note: When the installation program completed, you had the option to start the WebFOCUS Reporting Server, so it may already be running.

How you start the WebFOCUS Reporting Server depends on the security level, as follows:

- **Security ON**

  From the Start menu, select Programs, Information Builders, WebFOCUS 81 Server, and then Start Security ON.

- **Security OFF**

  From the Start menu, select Programs, Information Builders, WebFOCUS 81 Server, and then Start Security OFF.

Note: If you want to use any other security mode (for example, security OPSYS or security PTH), you must configure the security mode in the Reporting Server Web Console page. For more information, see the Reporting Server Online Help (Select Server Security, then Server Security Overview/Security Providers or Configuring Authentication).
Security DBMS and Security LDAP require configuration before they can be used. For more information on these security modes, see the *Server Administration* manual.

**Note:** If you see an error in the server command window related to JSCOM3, you will fix this in *How to Verify or Enable the JSCOM3 Listener* on page 59.

### Testing and Configuring the WebFOCUS Reporting Server

The Web Console provides an interface for configuring, monitoring, and testing the WebFOCUS Reporting Server. You will use the Web Console, sometimes referred to as the Server Console, to test the installation and become familiar with administrative features.

**Procedure: How to View the Web Console and Test the Server**

To access the Web Console and test the server:

1. Start the WebFOCUS Reporting Server.
2. Access the Web Console in your browser.

   - From the WebFOCUS Reporting Server machine, select **Start**, **Programs**, **Information Builders**, **WebFOCUS 81 Server**, and then **Web Console**.

   - From a remote machine, type the following path in Internet Explorer:

     ```
     http://host:[port]
     ```

     where:

     - **host**
       - Is the hostname or IP address of the machine running the WebFOCUS Reporting Server.

     - **port**
       - Is the HTTP port you specified during the installation. This is normally one more than the TCP port. The default is 8121. This is the port of the LST_HTTP node in `drive:\ibi\srv81\wfs\etc\odin.cfg`. 

WebFOCUS and ReportCaster Installation and Configuration for Windows
3. When running with security OPSYS and accessing the Web Console remotely, sign in using the operating system ID you used when installing the server. When accessing the Web Console locally, this ID is normally used automatically.

The Web Console home page appears.

If you receive a message similar to the following

'admin_id' has no valid member

you probably did not type your correct Windows password during installation and the server is running in safe mode. To correct this error, click fix now to bring up the Access Control page. Then on the left, under Users and Server Administrator, click your user ID, and choose Properties. Provide and confirm your Windows password, and click Apply and Restart. When the server restarts, click the Home icon in the upper-left corner.

4. In the left pane, expand Application Directories and open ibisamp. Right-click any sample .fex provided under ibisamp and select Run from the drop-down menu.

A sample report will display.

**Procedure:** How to Administer the Server, Configure Adapters, Create Metadata, and Edit Licenses

The procedures and steps to administer the server, configure adapters, and create metadata (synonyms, Master Files, and Access Files) are accessible from the Web Console Help. They are also available in the Server Administration manual.

To access these instructions, do the following:


2. If you have a license for Active Technologies, you must provide the Active Technologies license code by clicking Workspace on the main menu. Right-click the Workspace folder in the navigation pane and select License from the drop-down menu. Enter your Active Technologies license in the license_active_report field.

3. Optionally, add your site code to the server configuration by entering your site code in the site_code field.

4. Click Save and Restart Server.

5. On top of the Web Console, click Help and then Contents and Search.

The Web Console Help appears.

6. On the left of the Web Console Help, expand Server Administration.

7. To configure adapters, on the left of the Web Console Help, expand Adapters.
8. Click the name of your adapter and follow the steps that appear.

**Procedure: How to Verify or Enable the JSCOM3 Listener**

JSCOM3 is a listener installed with the WebFOCUS Reporting Server that is used when the server creates Active Technologies for Adobe® Flash® or Flex® software, graphics, accesses data sources through JDBC, or launches other Java processes. It normally uses the fourth port used by the server. By default, this is port 8123. Although not all WebFOCUS functionality requires JSCOM3, it is a good idea to ensure it is available.

2. Click Workspace on the main menu.
3. In the navigation pane, right-click the Java Services folder and select Agents.
   
   The Java Services Agents page opens.
4. Right-click on the image to the left of the JSCOM ID and ensure that the Stop option appears.

   If the Stop option appears, then JSCOM3 is started. You can optionally click Properties if you wish to change any default settings. To continue, proceed to Stopping the WebFOCUS Reporting Server on page 61.

   If the Start option appears, then JSCOM3 did not start. JSCOM3 cannot start unless your search PATH contains the jvm.dll file for your Java release. The jvm.dll file is installed with the JDK/JRE in the jre\bin\client directory.

   The exact JDK directory varies depending on your Java release. For a different JDK release, substitute accordingly. If JSCOM3 does not start, add this directory to your PATH.

   If you are planning to run the Active Technologies for Flash or Flex software, ensure that enough memory is allocated to the JSCOM3 service for Java to compile Flash or Flex files. Perform the following steps to set the maximum Java heap size:

   a. Open the Web Console and click Workspace on the main menu.

   b. From the navigation pane, open the Java Services folder, right-click DEFAULT, and select Properties.

      The Java Services Configuration pane opens.

   c. Open the JVM Settings section, as shown in the following image.
d. In the **JVM_Options** field, enter:

```
-Djava.version=1.6
```

e. In the **Maximum Java Heap Size** field, enter an appropriate value in Megabytes (Mb).

**Note:** 1024 Mb (1Gb) should be a sufficient value, although this can depend on how much memory is available on the machine that is hosting the server.

f. Click **Save and Restart Java Services**.

5. If it is not installed, install a JDK on the WebFOCUS Reporting Server machine.

**Note:** If you plan to install WebFOCUS Client on the same machine, you can install WebFOCUS Client first. You can then complete this procedure after the WebFOCUS Client installation completes.

6. After the JDK is installed, go to the Windows Control Panel and open the **System** folder.
7. On the Advanced tab, click the **Environment Variables** button.
8. In the bottom **System variables** frame, select **PATH**.
9. Click **Edit**.
10. Look for the directory containing jvm.dll and if it does not appear, add it. For example:
    
    ```
    C:\Program Files\Java\jre8.0_45\bin\client
    ```
    
    If you are using a different JDK, substitute accordingly.
    
    **Note:** Use semicolons (;) to separate paths. Do not include spaces between the semicolons and the paths.

11. Click **OK** to close the Control Panel.
12. Restart the WebFOCUS Reporting Server through the Window Start menu so that a command window opens. Then ensure that the JSCOM3 listener starts by looking for a line similar to the following:
    
    ```
    JSCOM3 listening on tcp port 8123
    ```
    
    **Note:** In some environments, you need to reboot before the server finds the jvm.dll file.

**Stopping the WebFOCUS Reporting Server**

There are three ways to stop the WebFOCUS Reporting Server.

- From the Start menu, select **Programs, Information Builders, WebFOCUS 81 Server**, and then **Stop**.
- From the Web Console, click the console icon above the navigation pane and select **Stop**.
- Use the Services window, if the WebFOCUS Reporting Server was started as a service.

**WebFOCUS Reporting Server Directory Structure**

After installation, the WebFOCUS Reporting Server directory structure is created. The default directory is `/ibi` and contains three subdirectories:

- **apps**
  - Contains space for applications and sample data.

- **profiles**
  - Contains space for server profiles.
srv81
Contains the server.

Under srv81 are the EDAHOME (home) and EDACONF (wfs) subdirectories:

- EDAHOME is installed in:
  
  {drive}:\ibi\srv81\home
  
  It contains the following subdirectories:
  
  - bin
    Contains executable and libraries files.
  
  - catalog
    Contains catalog-related files.
  
  - doc
    Contains documentation files.
  
  - etc
    Contains error message, documentation, and additional server files.
  
  - graph
    Contains graphics and template files.
  
  - nls
    Contains National Language Support files.
  
  - system32
    Contains copies of the Windows system files.

- EDACONF is installed in:
  
  {drive}:\ibi\srv81\wfs
  
  EDACONF contains the following subdirectories:
  
  - bin
    Contains server instance-specific configuration files and utilities.
  
  - catalog
    Contains server instance-specific catalog files.
  
  - dfm_dir
    Contains deferred output and control files.
Silent Installation of the WebFOCUS Reporting Server

After you run a regular installation and are familiar with the server, you can use a silent installation the next time you install the server.

Running a Silent Installation

In a silent installation, launch the installation and specify a text file that contains your installation parameters, so that you are not prompted for information. To install in silent mode, you must first create a file containing your installation parameters.

Procedure: How to Create the Server Installation Parameters File

Create a file in a text editor with the following syntax and parameters for your machine.

```
-inst
-license nnn-nnn-nnnn[-nn]
edahome drive:\ibi\srv81\home
-edasconf drive:\ibi\srv81\wfs
-port port
-host hostname
-approot drive:\ibi\apps
-programfolder "WebFOCUS 81 Server"
-pass password
-nostart
```

where:

```
nnn-nnn-nnnn[-nn]
```

Is the 10-digit or 12-digit license number.
drive:\ibi\n
Is the drive and directory where you want to install the server.

port

Is the base TCP port for the server.

hostname

Is the hostname of the server.

WebFOCUS 81 Server

Is the Windows program folder and service name.

password

Is the password for the user ID you are using to install the server.

You can see additional installation options by executing the installation from a command prompt as follows:

setup ?
Procedure: How to Launch a Silent Installation

1. Open a command prompt and navigate to the directory containing the setup.exe file for the server.

2. Type the following:

```bash
setup -LlangID -opt drive:\PATH_TO\srvoptions.txt [-DINSTALL_LOG_DESTINATION="log_destination"] [-DINSTALL_LOG_NAMES="log_name"]
```

where:

- `drive:\PATH_TO\srvoptions.txt`
  - Is the full path to the file containing your installation options.

- `-LlangID`
  - Is -L and the decimal language ID of the language in which you wish to install the server. For example:
    - English: `-L0x409`
    - French: `-L0x040c`
    - Spanish: `-L0x040a`
    - German: `-L0x407`
    - Japanese: `-L0x411`

- `log_destination`
  - Is the location where the installation log is created. If this argument is omitted, the log is created in the default location.

- `log_name`
  - Is the name of the installation log. If this argument is omitted, the default name is used.

For example:

```
setup -L0x409 -opt C:\temp\srvoptions.txt
```
This topic provides details about installing the WebFOCUS Client.

**Note:** Before installing the WebFOCUS Client, you must first install a Reporting Server. You must start the server with Security OFF.

### In this chapter:
- Installing WebFOCUS Client
- WebFOCUS Client and ReportCaster Directory Structures
- Uninstalling the WebFOCUS Client

## Installing WebFOCUS Client

The following procedures describe how to install WebFOCUS Client.

**Note:** If you are running on a 32-bit machine, select the 32-bit installer. If you are running on a 64-bit machine, whether you intend to use 32-bit Java or 64-bit Java, you **must** use the 64-bit installer. There will be a selection option during the 64-bit installation if the installer detects a 32-bit Java on your machine. You can then choose to install either the 32-bit or 64-bit version.

## Removal of the ibi_html WebFOCUS Alias

As of WebFOCUS Release 8.0 Version 01, the ibi_html alias has been removed from WebFOCUS packaging. If you are upgrading, this section describes how to configure your web and application server settings (for example, Apache Tomcat) if ibi_html references exist in your earlier applications as custom aliases.

### Procedure: How to Configure Apache Tomcat to Use the ibi_html Soft Alias

1. Stop Apache Tomcat.
2. Make a copy of the approot.xml file, which is located in the following directory
   
   `<catalina_home>\conf\Catalina\localhost`
where:

```xml
<cataloga_home>
  Is the root location where Apache Tomcat is installed.
</cataloga_home>
```

On Windows platforms, Apache Tomcat is installed by the WebFOCUS Client installation.

3. Rename the copy of approot.xml to ibi_html.xml or according to your custom alias (for example, ibi_html8.xml).

4. Edit the ibi_html.xml file and change the value specified by the `<Context docBase>` element to the full path to the ibi_html.war file. In addition, change the path value from /approot to /ibi_html.

For example:

```xml
<?xml version='1.0' encoding='utf-8'?>
<Context docBase="C:\ibi\WebFOCUS81\webapps\ibi_html.war"
  path="/ibi_html">
</Context>
```

**Note:** Do not replace /ibi_html with your custom alias (for example, ibi_html8).

5. Start Apache Tomcat.

You can now use your ibi_html alias.

**Procedure:** How to Configure ibi_html With Installations Where IIS Is Configured With the Tomcat Connector (Plug-In)

To configure ibi_html with installations where IIS is configured with the Tomcat Connector (plug-in):

- The Tomcat plug-in needs to be installed and configured on the machine where the web server is installed, as described in *Configuring IIS to Use the Tomcat Connector (Plug-In)* on page 109.

- In order to route IIS requests to Tomcat, the uriworkermap.properties file needs to be updated to include the additional WebFOCUS context root for ibi_html:

  ```
  /ibi_html/*=ajp13w
  ```

On the Tomcat server, a context is also needed for ibi_html. This needs to be configured to point to the ibi_html.war file located in the following directory:

```bash
install_drive:\ibi\WebFOCUS81\webapps
```
Procedure: How to Configure Oracle WebLogic or IBM WebSphere as a Plug-in With the ibi_html Alias

To configure other application servers (for example, Oracle WebLogic or IBM WebSphere) as a plug-in with the ibi_html alias:

1. Deploy the ibi_html.war file that is located in the WebFOCUS81\webapps directory to the application server.
2. Create an ibi_html alias on your web server to be redirected to the application server ibi_html context root.
   This is similar to the configuration performed for the ibi_apps alias.
3. Provide a name for this alias that matches your custom ibi_html alias.
   For example, if the custom alias being used is ibi_html8 then call it ibi_html8.

Procedure: How to Install the Typical Version of WebFOCUS

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 8.1 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. Read the license agreement, select the radio button to accept the terms of the license agreement, and click Next to continue the installation.
   The License Code dialog box opens.
5. Enter 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.
6. Select Typical and click Next to continue the installation.
   The Select Program Folder dialog box opens.
7. Click Next to accept the default Program Folder, WebFOCUS 81.
8. On the Choose Destination Locations dialog box, perform the following steps:
   a. Specify a path for the WebFOCUS application folder.
Note: You can specify any path on the local machine or use a Universal Naming Convention (UNC) path. The path must end in \\ibi and cannot contain any spaces.

b. Specify whether the system on which you are installing WebFOCUS uses a 32-bit or 64-bit Java configuration.

c. Choose the appropriate disk from the Disk Space Information drop-down list and 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.
9. On the Select Components to install dialog box:
   
a. Type the host name or IP address for your mail server.

b. Click Next to accept the default installation components.

**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 127.0.0.1. If you are running on multiple environments and want to access this Derby from another location, change 127.0.0.1 to the machine name.

The Pre-Installation Summary window opens.

10. Verify that all of the information is correct and click **Install**.

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

   After WebFOCUS is configured, the Installing WebFOCUS 8.1 dialog box opens. As WebFOCUS is being installed, the Installing WebFOCUS 8.1 dialog box informs you about the installation tasks that are being performed.

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

11. 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, as shown in the following image.

12. Click **Done** to exit the installation.

**Procedure:**  **How to Install the Custom Version of WebFOCUS**

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 8.1 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. Read the license agreement, select the radio button to accept the terms of the license agreement, and click Next to continue the installation.

The License Code dialog box opens.

5. Enter 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.

6. Select Custom and click Next to continue the installation.

The Select Program Folder dialog box opens.

7. Accept the default program folder (WebFOCUS 81) or specify a different program folder name. Then, click Next.

The Choose Destination Locations dialog box opens.

8. 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. Specify whether the system on which you are installing WebFOCUS uses a 32-bit or 64-bit Java configuration.

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

9. 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.

      Notice that the Derby 10.9.1.0 option is not selected. In this case, a pre-existing database must be selected and configured.
b. Type a path where WebFOCUS applications will be saved in the Choose Applications Path field or accept the default location (C:\ibi\apps).

c. Select an existing database (for example, Apache Derby) from the Configure pre-existing Database drop-down list.

Note: If want to use an existing WebFOCUS repository that already has tables defined, then uncheck the Create WebFOCUS Repository option. After the installation is completed, you must drop and recreate the existing tables in the repository.

If 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 127.0.0.1. If you are running on multiple environments and want to access this Derby from another location, change 127.0.0.1 to the machine name.

10. Click Next.

The Advanced Configuration dialog box opens, as shown in the following image.
11. 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).

   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.

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 8.1 dialog box opens. As WebFOCUS is being installed, the Installing WebFOCUS 8.1 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, as shown in the following image.

![Install Complete window](image)

**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 installWebFOCUS81nn.exe file resides.

2. Enter the following command:

   `installWebFOCUS81nn.exe -r drive:fullpath\filename.properties`
4. Installing the WebFOCUS Client

Note:

- Replace \textit{nn} with the specific WebFOCUS 8.1 release, for example, \texttt{installWebFOCUS8105.exe}
- Always generate the properties file before performing the silent install to ensure that the properties are correct.
- The properties file has the extension \texttt{*.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 \texttt{installWebFOCUS81nn.exe} file resides and enter the following command:

\begin{verbatim}
installWebFOCUS81nn.exe -i silent -f drive:\fullpath\filename.properties
\end{verbatim}

Upgrading from Release 8.0 to Release 8.1

The upgrade installation installs WebFOCUS 8.1 over your existing 8.0 release. This will carry over all WebFOCUS data, including the licensing information, allowing you to skip some of the steps required in the typical install. Because the architecture of WebFOCUS Portals and Favorites has changed in 8.1, the upgrade also requires that Portals and Favorites be converted for use in the new architecture. You can allow the installer to perform this conversion during installation or run the conversion tools manually after the upgrade.

It is strongly recommended that you back up your WebFOCUS Repository before performing the upgrade.

\textbf{Note:} You cannot run WebFOCUS 8.0 and WebFOCUS 8.1 against the same Repository simultaneously. If you plan to maintain separate WebFOCUS 8.0 and WebFOCUS 8.1 installations, each WebFOCUS installation must run against a different Repository database.

\textbf{Procedure: How to Upgrade from Release 8.0 to Release 8.1}

1. Download the WebFOCUS Client installation file, then double-click the file.
2. Choose the appropriate language from the drop-down list and click \texttt{OK}.
   
   The Welcome to WebFOCUS 8.1 window opens, recommending that you quit all programs before continuing with the installation.
3. Click \texttt{Next} to continue the installation.
   
   The License Agreement dialog box opens.
4. Read the license agreement, select the radio button to accept the terms of the license agreement, and click Next to continue the installation.
   The Choose Install Type dialog box opens.

5. Select Update, then select an existing installation to update, and then click Next to continue the installation.

6. In the Run Upgrade Utilities dialog box, select one of the following options and click Next:
   - If you select Convert Favorites and Portals now, proceed to step 7.
     
     **Note:** The conversion does not occur immediately. First, the installer upgrades the WebFOCUS software. Once the rest of the installation is complete, WebFOCUS will automatically convert Favorites and Portals to the 8.1 format.
   - If you select Skip the conversion and convert Favorites and Portals after the upgrade, proceed to step 8.

7. Enter a WebFOCUS Administrator ID and password and click Next.
   The installer connects to the WebFOCUS Repository to ensure that the Repository is up and to check your Administrator credentials.
   If the database connection fails or the credentials are not valid, you will be offered several options:
   - Try again after starting the database or correcting your credentials.
   - Exit, returning to the Run Upgrade Utilities dialog box.
   - Continue with the installation without converting the Favorites and Portals.

8. The Pre-Installation Summary dialog box lists your current product and the upgraded product. If anything is incorrect, click Previous and change your selections. Otherwise, click Install.
   When the installation is complete, the Run Verification Utility dialog box appears.

9. 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 dialog box opens, listing the installation directory.

10. Click Done to exit the installation.

    If you are going to run the conversion utilities manually, proceed to Converting WebFOCUS Portals and Favorites When Upgrading on page 147.
Upgrading from Release 8.1 to Release 8.1 Version 05

The upgrade installs WebFOCUS Release 8.1 Version 05 over your existing WebFOCUS installation. This will carry over all WebFOCUS data, including the licensing information, allowing you to skip some of the steps required in the typical install. The upgrade also requires that Favorites be converted for use in the new architecture. You run the Favorites conversion tool after the installation is complete.

It is strongly recommended that you back up your WebFOCUS Repository before performing the upgrade.

Procedure: How to Upgrade from Release 8.1 to Release 8.1 Version 05

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 8.1 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. Read the license agreement, select the radio button to accept the terms of the license agreement, and click Next to continue the installation.
   The Choose Install Type dialog box opens.
5. Select Update, then select an existing installation to update, and then click Next to continue the installation.
6. The Pre-Installation Summary dialog box lists your current product and the upgraded product. If anything is incorrect, click Previous and change your selections. Otherwise, click Install. When the installation is complete, the Run Verification Utility dialog box appears.
7. Select the verification utilities you would like to run and click Next. The available utilities are:
   - The WebFOCUS Console Verification Utility
   - WebFOCUS Online Documentation
   When the installation is finished, the Install Complete dialog box opens, listing the installation directory.
8. Click Done to exit the installation.
Troubleshooting the Installation

After installation, if you encounter any issues, check the installation logs located in the following directories:

C:\Documents and Settings\userprofile\WebFOCUS81_inst_date_#####.log
C:\Documents and Settings\userprofile\WebFOCUS81_Install_inst_date_#####.log

These 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.

**Note:** If you are using Windows 7 or Windows 2008, these installation logs are located in the following directories:

C:\Users\userprofile\WebFOCUS81_inst_date_#####.log
C:\Users\userprofile\WebFOCUS81_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 WebFOCUS Reporting Server DataMigrator Server manual.

WebFOCUS Client and ReportCaster Directory Structures

After installation, the WebFOCUS Client and ReportCaster directory structures are created. The default location for WebFOCUS products is $HOME/ibi.

**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 WebFOCUS81 directory. For example:

The WebFOCUS81 directory contains the following subdirectories:

- **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.

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

installer_vm
  Contains files used by the installation program.

jre
  Contains Java bundled with WebFOCUS.

logs
  Contains space for log files.

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.

temp
  Contains space used during internal processing.

Uninstall_WebFOCUS81
  Contains files used by the uninstall program.

utilities
  Contains tools for configuration, migration, and other tasks.
webapps
   Contains the WebFOCUS and ReportCaster web applications.

worp
   Contains the Business Intelligence Dashboard.

**ReportCaster Distribution Server Directories**

The default directory for the Distribution Server is:

`drive:\\ibi\WebFOCUS81\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 WebFOCUS Client runs as part of your web and application servers, the user IDs that run web and application server processes require access to WebFOCUS Client directories. For Windows 2008, 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 235.

- **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 WF81 service is also stopped. You can use the following options to uninstall the WebFOCUS Client:

- The Windows program group (for example, C:\ProgramData\Microsoft\Windows\Start Menu\Programs\Information Builders\WebFOCUS 81\). You can uninstall the software by clicking the *Uninstall WebFOCUS 81* shortcut.

- The command line by executing the uninstall program *Uninstall_webFOCUS81.exe* (for example, C:\ibi\WebFOCUS81\Uninstall_webFOCUS81\Uninstall_webFOCUS81.exe).

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

  ```
  C:\ibi\WebFOCUS81\Uninstall_webFOCUS81\Uninstall_webFOCUS81.exe -i silent
  ```
Uninstalling the WebFOCUS Client
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: \n```

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 6.0
- Configuring IIS to Use the Tomcat Connector (Plug-In)
- Configuring Microsoft IIS Version 7.x on the Windows 2008 Server
- 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.
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 93.

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 93, Configuring Microsoft IIS 6.0 on page 105, and Configuring IIS to Use the Tomcat Connector (Plug-In) on page 109.

IBM WebSphere Application Server

For details, see Configuring IBM WebSphere on page 128.

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 93.

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 149.
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 149.

- **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 149.

**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 211.

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\WebFOCUS81\webapps\webfocus.war
It is also provided as the following expanded directory:

```
drive:\ibi\WebFOCUS81\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:

<table>
<thead>
<tr>
<th>Context Root/Path</th>
<th>Doc base or location</th>
</tr>
</thead>
<tbody>
<tr>
<td>/ibi_apps</td>
<td>drive:\ibi\WebFOCUS81\webapps\webfocus.war</td>
</tr>
<tr>
<td>/ibi_help</td>
<td>drive:\ibi\WebFOCUS81\webapps\ibi_help.war</td>
</tr>
<tr>
<td>/approot</td>
<td>drive:\ibi\WebFOCUS81\webapps\approot.war</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Default Alias</th>
<th>Path</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>approot</td>
<td>drive:\ibi\apps</td>
<td>Read Only</td>
</tr>
</tbody>
</table>

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

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

**Note:** For information on manually configuring the `ibi_html` alias, see *Removal of the ibi_html WebFOCUS Alias* on page 67.

5. Verify the configuration using the tools in the WebFOCUS Administration Console, as explained in *WebFOCUS Client Post-Installation Tasks* on page 145.
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, as explained in Configuring IIS to Use the Tomcat Connector (Plug-In) on page 109.

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.

For Java 6 and 7, in the Java Options section, ensure that the following line is added:

```
-XX:MaxPermSize=256M
```

**Note:** This is not needed for Java 8.

Ensure that the Initial memory pool size is at least 256MB and that the Maximum memory pool size is at least 512MB.

**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/
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 190.

- If you use ReportCaster, CLASSPATH was set. Manually setting CLASSPATH is explained in *How to Set CLASSPATH for the Repository Tables* on page 95.

- 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 96.

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 96.

**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 211.
Reference: Tomcat Ports

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

<table>
<thead>
<tr>
<th>Default Port</th>
<th>Name</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>8080</td>
<td>HTTP Listener Port</td>
<td>You access Tomcat in a web browser using this port. For example:</td>
</tr>
<tr>
<td></td>
<td></td>
<td><a href="http://hostname:8080">http://hostname:8080</a></td>
</tr>
<tr>
<td>8009</td>
<td>Connector Port</td>
<td>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.</td>
</tr>
<tr>
<td>8005</td>
<td>Shutdown Port</td>
<td>Tomcat uses this port for internal operations and for stopping.</td>
</tr>
</tbody>
</table>

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\WebFOCUS81\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:

<table>
<thead>
<tr>
<th>Context (path)</th>
<th>Directory (DocumentBase)</th>
</tr>
</thead>
<tbody>
<tr>
<td>/ibi_apps</td>
<td>drive:\ibi\WebFOCUS81\webapps\webfocus.war</td>
</tr>
<tr>
<td>/ibi_help</td>
<td>drive:\ibi\WebFOCUS81\webapps\ibi_help.war</td>
</tr>
<tr>
<td>/approot</td>
<td>drive:\ibi\WebFOCUS81\webapps\approot.war</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Context (path)</th>
<th>Directory (DocumentBase)</th>
</tr>
</thead>
<tbody>
<tr>
<td>/ibi_apps</td>
<td>drive:\ibi\WebFOCUS81\webapps\webfocus.war</td>
</tr>
<tr>
<td>/ibi_help</td>
<td>drive:\ibi\WebFOCUS81\webapps\ibi_help.war</td>
</tr>
</tbody>
</table>

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 Windows Explorer or My Computer:
   
   `<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
<?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
<?xml version='1.0' encoding='utf-8'?>
<Context docBase="C:\ibi\WebFOCUS81\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
<?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 8.0.21 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, 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 Business Intelligence Portal Welcome page opens in your web browser.

4. Click Administration in the top pane, and then select Administration Console, as shown in the following image.

The WebFOCUS Administration Console opens.
5. Expand *Diagnostics*, *Verification*, and then *WebFOCUS Reporting Server*, as shown in the following image.

![Image of Diagnostics and Verification]

The following page opens, which lists your WebFOCUS Reporting Server instance if it is available.

![Image of Test Existing Procedure dialog]

6. Click *Test Existing Procedure*.

   When Test Existing Procedure is selected and the WebFOCUS Reporting Server is not running or is running with Security enabled (ON), you are prompted for WebFOCUS Reporting Server credentials.

   When credentials are entered and the WebFOCUS Reporting Server is not running, an error message is displayed.
If the WebFOCUS Reporting Server is running with Security disabled (OFF), then the Run a Stored Procedure page opens, 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 145.

**Configuring Microsoft IIS 6.0**

This section only applies when using Microsoft IIS as your web server to serve WebFOCUS content.

IIS is a web server and does not process Java on its own. Therefore, to run the WebFOCUS Servlet, IIS should be used with Apache Tomcat or another application server. This document assumes you are using Apache Tomcat.

Configuration steps are the following:

1. Configure Tomcat, as explained in Configuring Apache Tomcat on page 93.

2. Restart IIS (see Starting and Stopping IIS on page 106).

3. Define aliases that map WebFOCUS directories to directories IIS can reference. IIS calls these mappings Virtual Directories. For details, see Configuring IIS Virtual Directories (Aliases) on page 106.

4. Configure communications between IIS and Tomcat. For details, see Configuring IIS to Use the Tomcat Connector (Plug-In) on page 109.
Starting and Stopping IIS

You should restart IIS to ensure all settings are properly set. You should be aware of how to control IIS because some WebFOCUS components run as part of the web server.

Procedure: How to Start and Stop IIS

To start, stop, or restart IIS, do the following:

1. Open the services window by selecting Control Panel, Administrative Tools, and then Services.
2. Right-click IIS Admin Service and choose Start, Stop, or Restart to bring IIS up or down. If you are prompted to start and stop additional services, choose Yes.
3. Right-click World Wide Web Publishing Service and choose Start or Restart to ensure that all web server components are started. This service always stops, but does not always start, with the IIS Admin Service. When this service does start with the IIS Admin Service, it is not necessary to start it on its own.

Both IIS Admin Service and World Wide Web Publishing Service must be restarted when you make changes to your web server or WebFOCUS configuration.

Configuring IIS Virtual Directories (Aliases)

WebFOCUS connectivity components and other web-based features sometimes run as part of the web server. Therefore, IIS must be told the locations of WebFOCUS files and have sufficient access to those files.
During the WebFOCUS Client installation, if you checked the Configure Aliases on IIS option, aliases are automatically configured for the default IIS website. You should confirm these settings or set them if required. If you want to use a different website, create it at this time. Disabling the default site and creating a new one is a good idea in production environments. Creating additional sites is supported on Windows Server releases, but not Windows Professional releases. For information on creating additional websites, refer to Additional WebFOCUS Configuration Options on page 235.

**Procedure: How to Confirm or Create Aliases**

1. Restart the IIS Admin and World Wide Web Publishing Services from the Services window to ensure that all settings are refreshed after the install.

2. Open the Internet Services Manager. To do this from the Start menu, click Run and type: `inetmgr`

    Press Enter. The Internet Information Services window opens.

3. Expand and select your hostname on the left.

4. On the left, select the website you are using.

5. Confirm that the first two columns of the following table appear on the right:

<table>
<thead>
<tr>
<th>Name</th>
<th>Path</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>approot</td>
<td><code>drive:\ibi\apps</code></td>
<td>Directory for accessing self-service WebFOCUS applications.</td>
</tr>
<tr>
<td>jakarta</td>
<td><code>C:\Program Files\Apache Software Foundation\Jakarta Isapi Redirector\bin\</code></td>
<td>Directory of the Tomcat Connector. This is needed when using Tomcat with IIS.</td>
</tr>
</tbody>
</table>

If these names and paths appear, then the installation configured them and you can proceed to Setting Permissions on page 108.

If the names do not appear, you must create them.

6. On the left, select the Default Web Site or the site you are using for WebFOCUS. From the menu bar, select Action, New, and then Virtual Directory.

   This launches the New Virtual Directory Wizard. Go through the wizard one time for each virtual directory that you want to create.
7. At the first panel, click Next.
8. Specify the alias name (approot or jakarta) and click Next.
9. For the directory, browse to and select the directory for the alias. For example:

<table>
<thead>
<tr>
<th>Name</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>approot</td>
<td>drive:\ibi\apps</td>
</tr>
<tr>
<td>jakarta</td>
<td>C:\Program Files\Apache Software Foundation\Jakarta Isapi Redirector\bin\</td>
</tr>
</tbody>
</table>

The window for setting permissions displays.

10. For approot, leave the defaults and click Next. If you define the jakarta virtual directory, ensure Run scripts and Execute are checked.

11. Click Finish.

12. Select the Default Web Site or the site you are using for WebFOCUS. From the menu bar, select Action, New, and then Virtual Directory.

   Repeat the steps if you need to define another virtual directory. Your website must be selected so that the virtual directories become its subdirectories. After creating a virtual directory, ensure that your site is selected and not the virtual directory you just created.

13. Restart the IIS Admin and World Wide Web Publishing Services from the Services window. Ensure both services restart.

**Reference: Setting Permissions**

Two kinds of permissions issues are involved when using IIS:

- IIS permissions determine what IIS is allowed to do. You can set this through the Internet Services Manager for the WebFOCUS aliases (virtual directories).

  If the WebFOCUS installation configures IIS for you, they should default correctly. The jakarta alias should have Scripts and Executables permissions.

- NTFS permissions determine what each user ID is allowed to do through the file system. You can set this in Windows Explorer or My Computer by right-clicking a folder, choosing Properties, and clicking the Security tab. NTFS permissions take precedence over IIS permissions. If the user ID that IIS runs under does not have NTFS permissions to write to a directory, then IIS cannot write to that directory.
IIS and Tomcat need access to the WebFOCUS directories. However, when using IIS with Apache Tomcat, you normally do not need to set NTFS permissions. IIS needs only Read NTFS permissions, which it should have by default. Tomcat runs as the Local System account, which automatically has full access. These defaults can be changed, as explained in Tomcat Security Tips on page 238.

If you need to set NTFS permissions, determine which user IDs require access to WebFOCUS directories. Then set NTFS permissions to allow those user IDs full access.

**Configuring IIS to Use the Tomcat Connector (Plug-In)**

This section explains how to configure communications between Tomcat and IIS using the Tomcat Connector.

**Installing and Configuring the Tomcat Connector**

The WebFOCUS installation provides an option to install the Tomcat Connector (plug-in). In some environments, manual configuration is needed after the installation completes. If you chose to configure the Tomcat Connector (plug-in) with WebFOCUS Client, it should be installed in:

C:\Program Files\Apache Software Foundation\Jakarta Isapi Redirector

If the Tomcat Connector is not installed, you can follow the steps below to manually install and configure the Connector.

**Reference: Connector Installation**

Successful installation of the Tomcat Connector performed the following steps. You do not need to perform these steps manually unless there was an error during the WebFOCUS installation, if the Connector is not working properly, or if you would like to add the Connector later. In addition, if you want to change which IIS website uses the connector, you may need to perform some manual configurations.

1. If they do not already exist, manually create the following subdirectories under the C:\Program Files\Apache Software Foundation directory:

   \Jakarta Isapi Redirector\bin
   \Jakarta Isapi Redirector\conf
   \Jakarta Isapi Redirector\log

2. The connector should be installed on your system in the following default directory:

   C:\Program Files\Apache Software Foundation\Jakarta Isapi Redirector\bin

**Note:** If you changed the default directory, substitute your values accordingly.
If it does not exist, you can obtain a copy of the isapi_redirect.dll file from the following directory:

\drive:\ibi\WebFOCUS81\utilities\install\iis

Copy the isapi_redirect.dll file to the default directory.

**Note:** For Windows AMD 64-bit installations, a copy of the 64-bit isapi_redirect_64.dll file can be found in the following directory:

\drive:\ibi\WebFOCUS81\utilities\install\iis

3. In the \Jakarta Isapi Redirector\conf subdirectory, create the following files:

- **uriworkermap.properties**

  The following example provides the structure of the uriworkermap.properties file, which you can use as a reference:

  ```
  # uriworkermap.properties -
  # This file provides sample mappings for example
  # ajp13w worker defined in workermap.properties
  /servlet-examples/*=ajp13w
  # Now filter out all .jpeg files inside that context
  # For no mapping the url has to start with exclamation (!)
  /!servlet-examples/*\.jpeg=ajp13w
  ```

  The uriworkermap.properties file informs IIS when to route requests to Tomcat. This file must specify the following WebFOCUS context roots:

  - /ibi_apps
  - /ibi_help

  **Note:** If you are using a custom alias in your environment, ensure that the custom alias that is used for the context root is specified.

Using a text editor, open the uriworkermap.properties file, which is located in the following directory:

C:\Program Files\Apache Software Foundation\Jakarta Isapi Redirector\conf\uriworkermap.properties

**Tip:** If the formatting of the file appears incorrect in Notepad, use WordPad. However, if you use WordPad, ensure the file is saved as text (.txt).
Ensure that the context roots are defined as follows:

/ibi_apps/*=ajp13w
/ibi_help/*=ajp13w

If these lines do not exist, add them after the following:

/servlet-examples/*=ajp13w

Using the default line, IIS will forward

http://hostname/ibi_apps/

but not

http://hostname/ibi_apps

If you want both forwarded, add the following lines, in addition to the other lines at the very end of the uriworkermap.properties file:

/ibi_apps=ajp13w
/ibi_help=ajp13w

However, the exact line can only appear once.

**Note:** If you want Tomcat to process the approot alias and want IIS to only forward requests for them, add `/approot/*=ajp13w` to the uriworkermap.properties file and create a context on Tomcat that points to the approot WAR file:

`drive:\ibi\WebFOCUS81\webapps\approot.war`

Save and exit the editor. Restart IIS.
workers.properties

The following example provides the structure of the workers.properties file, which you can use as a reference:

```
# workers.properties -
#
# This file provides minimal jk configuration properties needed to
# connect to Tomcat.
#
# The workers that jk should create and work with
#
worker.list=ajp13w
#
# Defining a worker named ajp13w and of type ajp13
# Note that the name and the type do not have to match.
#
worker.ajp13w.type=ajp13
worker.ajp13w.host=localhost
worker.ajp13w.port=8009
```

4. Create Registry settings under:

```
HKEY_LOCAL_MACHINE\SOFTWARE\Apache Software Foundation\Jakarta Isapi Redirector\1.0
```

The following table shows the settings. Confirm that they are created correctly on your system.

<table>
<thead>
<tr>
<th>Value Name</th>
<th>Value Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>extension_uri</td>
<td>/jakarta/isapi_redirect.dll</td>
</tr>
<tr>
<td>log_file</td>
<td>C:\Program Files\Apache Software Foundation\Jakarta Isapi Redirector\log\isapi_redirect.log</td>
</tr>
<tr>
<td>log_level</td>
<td>info</td>
</tr>
<tr>
<td>worker_file</td>
<td>C:\Program Files\Apache Software Foundation\Jakarta Isapi Redirector\conf\workers.properties</td>
</tr>
<tr>
<td>worker_mount_file</td>
<td>C:\Program Files\Apache Software Foundation\Jakarta Isapi Redirector\conf\uriworkermap.properties</td>
</tr>
</tbody>
</table>
5. Create a Virtual Directory (alias) with scripts and executables permissions under the default IIS website.

<table>
<thead>
<tr>
<th>Alias</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>/jakarta</td>
<td>C:\Program Files\Apache Software Foundation\Jakarta Isapi Redirector\bin\</td>
</tr>
</tbody>
</table>

This must have execute permissions of Scripts and Executables. You can confirm or add this using the Internet Services Manager. If you are not sure how to add a Virtual Directory, see Configuring IIS Virtual Directories (Aliases) on page 106.

If you want to use the connector with a different website, create this Virtual Directory under that site as well or replace the existing one.

6. Add the following file as an ISAPI filter to the default website:

C:\Program Files\Apache Software Foundation\Jakarta Isapi Redirector\bin\isapi_redirect.dll
In the Internet Services Manager, select and right-click the default website, choose Properties, and select the ISAPI Filters tab. Click Add, enter Jakarta in the Filter Name field, and the full path to the isapi_redirect.dll as the executable.

If you want to use the connector with a different website, create this filter under that site, instead. Be sure to add the filter for the specific website and not for the entire IIS server.

**Note:**

- To use multiple instances of the connector to connect to separate instances of Tomcat, see the *Technical Memo: 4595: Installing Multiple Instances of WebFOCUS Using Apache Tomcat on Windows*.

- If WebFOCUS installed the Tomcat Connector, you can manually uninstall it by removing the registry settings, ISAPI Filter, Virtual Directory, and Jakarta Isapi Redirector directory.
**Reference: The workers.properties File**

The workers.properties file informs IIS where to find Tomcat. It is located in the following directory:

C:\Program Files\Apache Software Foundation\Jakarta Isapi Redirector\conf\workers.properties

Normally, you do not need to edit this file. You only need to edit this file if you changed the default port 8009 or if Tomcat is not on the same machine as IIS. If you ran the Tomcat Connector installation manually, the workers.properties file is used instead.

**Note:** IIS finds the workers.properties file by looking in the registry. However, if an isapi_redirect.properties file is in the same directory as an isapi_redirect.dll file, IIS reads the isapi_redirect.properties file instead of the registry.

**Reference: Tomcat Connector Debugging**

The default log file for the Tomcat Connector is written under:

C:\Program Files\Apache Software Foundation\Jakarta Isapi Redirector\log

In some environments, the isapi_redirect.log file may be empty. If you want to use this log file, you may need to set NTFS permissions so IIS can write or modify the log directory. Normally, this requires granting Modify/Write permissions to the IUSR_servername user and Authenticated Users group, but the required user IDs may vary based on your configuration.

You can control how much information is logged through the registry under:

HKEY_LOCAL_MACHINE\SOFTWARE\Apache Software Foundation\Jakarta Isapi Redirector\1.0\log_level

You can set this to one of the following:

- debug
- info
- error
- emerg

You must restart IIS if you change the log_level.

**Verifying the Configuration With IIS and Apache Tomcat**

After configuring the Tomcat Connector, ensure that IIS can route requests to Tomcat.
**Procedure:** How to Run Test Calls

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

2. Ensure the ibi_apps context is created on Tomcat by typing the following URL:
   
   `http://hostname:8080/ibi_apps/diagnostics/about.jsp`
   
   where:
   
   `hostname`
   
   Is the hostname for Tomcat. If Tomcat is not on port 8080, use the correct port instead of 8080.

   A page displaying information about the build should display. You can ignore any broken images. If nothing displays, ensure Tomcat is started and that you created this context, as explained in *Configuring Apache Tomcat* on page 93. If you receive an error, try restarting Tomcat.

   When IIS and Tomcat are configured together, you normally only access Tomcat through port 8080 for testing and configuration purposes.

3. Ensure IIS routes a request for ibi_apps to Tomcat by typing the following URL:
   
   `http://hostname/ibi_apps/diagnostics/about.jsp`
   
   where:
   
   `hostname`
   
   Is the hostname to access IIS. If IIS is not on port 80, use `hostname:port`.

   The same page should display. If you receive an error, confirm that all steps have been performed to configure the connector. Ensure that both IIS and Tomcat are started and try restarting them. Also, ensure that ServletExec ISAPI is not installed.

4. Type the following case-sensitive URL to access the WebFOCUS Welcome page that provides links to all WebFOCUS features:
   
   `http://hostname:port/ibi_apps/homepage.jsp`

   You can bookmark this page for future use. This page is also referred to as the WebFOCUS home page.

5. Select *Administration Console* from the Administration menu, then expand the *Diagnostics* node and select *WebFOCUS Reporting Server*. 
6. Click Test AdHoc Procedure to run the test procedure.

If you receive an error like the following:

*Error attaching to Server: EDASERVE*

Confirm that the WebFOCUS Reporting Server is started. If the WebFOCUS Reporting Server is started, ensure that the WebFOCUS Client knows the server HOST and PORT using the WebFOCUS Administration Console or by checking:

drive:\ibi\WebFOCUS81\client\wfc\etc\odin.cfg

7. If prompted to sign in, provide a user ID and password. By default, this is a user ID and password that can sign in to the machine running the WebFOCUS Reporting Server.

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

```
http://hostname:port/ibi_apps/WFServlet?IBIF_ex=carinst
```

8. Proceed to WebFOCUS Client Post-Installation Tasks on page 145 and run the verification tool.

**Configuring Microsoft IIS Version 7.x on the Windows 2008 Server**

This section describes how to configure WebFOCUS 8.1 on a Windows 2008 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 8.0.21 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 on the Windows 2008 Server

When installing the WebFOCUS client, if you have Configure Apache Tomcat 8.0.21 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 on the Windows 2008 Server

To manually configure Microsoft IIS version 7.x on the Windows 2008 server:

1. Open the Windows 2008 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.
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.


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.
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, as shown in the following image.

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. Click Add.
32. 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.

33. Click *OK*.

34. Recycle Apache Tomcat and Microsoft IIS version 7.x.

35. Start Apache Tomcat and Microsoft IIS version 7.x.

36. Open the WebFOCUS Home Page in a web browser by entering the following URL:

   http://hostname:port/ibi_apps/

## Configuring IBM WebSphere

This section explains how to set up IBM WebSphere Application Server for use with WebFOCUS and ReportCaster. It is assumed that WebSphere components are installed and configured. For additional information, see the WebSphere documentation. In WebFOCUS 8, you can easily use WebSphere Application Server without the external IBM HTTP Server by deploying the approot.war file.

### Java Version Requirement

As of WebFOCUS 8, Java Version 6 is the minimum version required on the system that is hosting the application server where the WebFOCUS Reporting Server and ReportCaster Distribution Server are deployed.

**Important:** For IBM WebSphere Application Server Version 7.0, apply the IBM WebSphere Application Server feature pack for OSGI applications and Java persistence API 2.0.
Procedure: How to Apply the IBM APAR

To apply the IBM APAR:

1. In the administrative console, expand the Servers node and select Application Servers.

2. Click the server to which the custom property is to be applied.


   The Custom Properties page opens.

5. Click New.

6. Enter the following in the Name field exactly as shown.

   com.ibm.ws.jsp.jdkSourceLevel

7. Enter the following in the Value field exactly as shown:

   16

8. Click Apply or OK.

   The Messages dialog box opens.

9. Click Save.

Java Memory Requirement

Depending on your IBM WebSphere Application Server default settings, you may need to adjust the Java VM memory options if you run into performance issues.

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 should 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 should 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. In the left pane of the console, expand the Diagnostics node and click JVM Property Info, as shown in the following image.
The Java VM memory settings for your environment are displayed in the right pane, as shown in the following image.

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.

**Updating jackson-all-1.9.11.jar**

If you are using WebSphere Application Server Version 8.0 or 8.5, you must upgrade the version of jackson-all-1.9.11.jar that is included with WebSphere, then redeploy the WebFOCUS web application.

**Procedure: How to Update jackson-all-1.9.11.jar**

WebFOCUS 8 is packaged with a newer version of the jackson-all-1.9.11.jar file, which includes updated classes. To avoid conflicts with the current version of the jackson-all-1.9.11.jar that is included and used by WebSphere Application Server Version 8.0 and 8.5, perform the following steps. These steps describe how to define a container-wide shared library that can be used by deployed WebFOCUS applications.
1. Locate the httpclient*.jar, httpcore*.jar, httpmime*.jar, and jackson-all-1.9.11.jar files that are packaged with WebFOCUS 8. By default, these files are located in the following directory:

   ibi\WebFOCUS81\webapps\webfocus\WEB-INF\lib

2. Create an empty directory on your system and copy the httpclient*.jar, httpcore*.jar, httpmime*.jar, and jackson-all-1.9.11.jar files to this new directory. For example:

   \appsrv1\IBM\shared

3. Sign in to the WebSphere Integrated Solutions Console.

4. In the left pane, expand Environment and select Shared libraries, as shown in the following image.
The Shared Libraries pane opens, as shown in the following image.

5. Select a scope from the drop-down list, which specifies the level at which the resource definition is visible, and click New.
The Shared Libraries > New pane opens, as shown in the following image.

6. In the Name field, enter a name for the new shared library that is being created (for example, IBI Jackson 1.9).

7. Provide a description (optional).

8. In the Classpath field, enter the path to the folder on your system where you copied the updated jackson-all-1.9.11.jar file (packaged with WebFOCUS 8).

9. In the Class Loading area, select the Use an isolated class loader for this shared library check box.

10. Click OK, then click Apply.
**Procedure:** How to Update the webfocus.war file for the WebFOCUS Web Application

This procedure describes how to define a container-wide shared library that can be used by deployed WebFOCUS applications.

**Note:** Only the webfocus.war file for the WebFOCUS web application requires this change. The ibi_help.war, approot.war, and ibi_html.war files do not require the changes described in this procedure.

1. In the WebSphere Integrated Solutions Console, expand Applications, and select WebSphere enterprise applications.

   The Enterprise Applications pane opens, as shown in the following image.

   ![Enterprise Applications](image)

2. Click the name of the webfocus.war file for the WebFOCUS web application (for example, 15215webfocus_war).
3. In the References area, click *Shared library references*, as shown in the following image.

![Image of References pane opened with Shared library references highlighted.](image.png)

The Shared library references pane opens, as shown in the following image.

![Image of Shared library references pane.](image.png)

**Note:** The WebFOCUS Application being used in this example is called *15215webfocus_war* and the Module is called WebFOCUS 8.1.
4. Select the check box to the left of the WebFOCUS Application and click Reference shared libraries.

The Shared Library Mapping pane opens, as shown in the following image.

5. In the Available area, select the **IBI Jackson 1.9** shared library, and then click the right arrow icon.

The **IBI Jackson 1.9** shared library is now listed in the Selected area.

6. Click OK.

7. Repeat steps 4 to 5 for the Module (for example, WebFOCUS 8.1) that is listed in the Shared library references pane.

   Ensure that the **IBI Jackson 1.9** shared library for the Module is moved to the Selected area.

8. Click OK.
You are returned to the Shared library references pane, as shown in the following image.

Notice that the new shared library (IBI Jackson 1.9) is now listed in the Shared Libraries column for the Application and Module.

9. Click OK.
10. Restart your IBM WebSphere Application Server if it is already running.

**Note:** Restarting only the WebFOCUS application will not be sufficient.

### Preparing WebSphere for ReportCaster

To prepare WebSphere for ReportCaster, you should set the CLASSPATH variable to include your JDBC driver.

**Note:** If you are using InfoAssist, you may need to increase the default Java memory options, as explained in *Java Memory Issues* on page 190. This can be done at a later time if needed, but it is done from the same area of the WebSphere Administrative Console as setting CLASSPATH.

### Procedure: How to Set CLASSPATH for WebSphere

If you are not using ReportCaster, proceed to *Deploying Web Applications* on page 139.

1. Start WebSphere, if it is not already running.
2. Sign in to the WebSphere Administrative Console through a browser.
3. On the left, expand Servers.
4. On the left, click Application Servers.
5. Click the server where you will deploy ReportCaster.
7. Click Process Definition.
9. In the Classpath field, provide the path to your JDBC driver.
   You must include the file in the path. Providing a directory is not sufficient. If multiple files
   are needed for the JDBC driver, provide the path to each file separating paths by semicolons.
   Spaces can occur in directory names, but not between the paths and the semicolons. For
   example:

   drive: \Program Files\Microsoft SQL Server 2008 Driver for JDBC\lib\sqljdbc4.jar
   
   For more information about JDBC drivers, see JDBC Overview on page 212.

10. Click OK.
11. On the top of the page, click Save.
12. On the page that appears, click Save to save the master configuration.
13. Restart the application server.

**Deploying Web Applications**

Use the WebSphere Administrative Console, to deploy (install) the WebFOCUS and ReportCaster
web applications. The number of web applications you deploy depends on your configuration.
Repeat this procedure for each web application you need to deploy.

The web applications are located in the following directory:

drive: \ibi\WebFOCUS81\webapps

For WebSphere, you deploy the WAR files.

You can use the default WebSphere instance or create a new instance using the WebSphere
Administrative Console. If you want to create new instances or virtual hosts, see the IBM
documentation.
Configuring IBM WebSphere

**Note:**

- To create a new Application Server instance, start WebSphere and access the administrative console. On the left, expand **Servers** and click **Application servers**. On the right, click **new** and follow the instructions. For additional information, see the IBM documentation.

- If you are not using the default local HTTP Server on port 80 or you created a new WebSphere server instance, you may need to define or edit virtual hosts. To do this, use the WebSphere Administrative console by expanding **Environment** and clicking **Virtual Hosts**. For additional information, see the IBM documentation.

- After making any changes through the WebSphere Administrative Console, be sure to update the master configuration. In addition, if you use an HTTP Server to forward requests to the application server, be sure to update the Web Server plug-in (plugin-cfg.xml) by clicking **Update Web Server Plugin** under **Environment**.

**Procedure:** How to Deploy (Install) a Web Application With WebSphere 7.0

1. If it is not started, start WebSphere Application Server. If you set CLASSPATH, ensure the server was restarted.

2. If it is not open, access the WebSphere Administrative Console through a browser. For example:

   ```
   http://hostname:9060/ibm/console
   ```

3. On the left, expand **Applications**.

   **Caution:** If previous instances of the WebFOCUS or ReportCaster applications have been installed, you must stop and uninstall them before installing the new applications. To determine if previous instances have been installed, click **Enterprise Applications** on the left. If applications appear, check their boxes and click **Stop**. After they are stopped, click **Uninstall**.

4. On the left, click **[Install] New Application**.

5. On the right, select **New Enterprise Application**.

6. Select the **Remote file system** radio button. In the full path field, type in the name of your application with its full path. Click **Next**. For example:

   ```
   drive:\ibi\WebFOCUS81\webapps\webfocus.war
   ```
Note: In WebFOCUS 8, there is one web application in the WebFOCUS81\webapps directory, which contains the WebFOCUS Client and ReportCaster (ibi_apps).

drive:\ibi\WebFOCUS81\webapps\ibi_help.war and
drive:\ibi\WebFOCUS81\webapps\approot.war

7. Select Detailed and then click Next.
8. Click Continue.
9. On the Select Installation Options screen, change the application name to something unique in the Application name field. For example, prefix the application name with the name of the cluster or app server. Click Next.
10. On the Map Modules to Servers screen, select the application listed on the bottom (for example, WebFOCUS). Then, while holding the Ctrl key, select the cluster or application server to which you will deploy and any web servers you will be using. Click Apply and then click Next.
11. For steps 3 to 6, accept the default values and click Next. For step 7, Map virtual hosts for Web Modules, select the application and the virtual host you defined earlier and click Next.
12. Set the context root for the web application. For this example, set it to /ibi_apps. Click Next.
13. Review the summary screen and then click Finish to deploy. When the application deployment is complete, click Save directly to the master configuration.

Verifying the WebFOCUS Configuration With IBM WebSphere

After configuring WebSphere components, verify operability.

Procedure: How to Verify the WebFOCUS Configuration

1. If they are not started, start the following:
   - WebFOCUS Reporting Server
   - IBM HTTP and WebSphere Application Servers
2. Open the following page to confirm the WebFOCUS web application is properly deployed to WebSphere Application Server:
   http://hostname:port/ibi_apps/diagnostics/about.jsp
where:

hostname:port

Is the host name of the Websphere Application Server and its associated HTTP port. For the default_host, the default HTTP port is 9060. For other hosts, look in the WebSphere Administrative console under Environment, Virtual Hosts, host_name, and Host Aliases.

A page should appear displaying information about the current build.

If you receive an error, try restarting WebSphere.

3. Type the following case-sensitive URL to access the WebFOCUS Welcome page that provides links to all WebFOCUS features:

http://hostname:port/ibi_apps

You may wish to bookmark this page for future use. This page is also referred to as the WebFOCUS home page.

Be aware that you may need to increase your Java memory settings if you use InfoAssist. You can do this later, as explained in Java Memory Issues on page 190.

**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**

As of WebFOCUS 8, Java Version 6 is the minimum version required on the system that is hosting the application server where the WebFOCUS Reporting Server and ReportCaster Distribution Server are deployed.

If necessary, apply the Oracle WebLogic Application Server patch 9923849 for Java persistence API 2.0. It is recommended that you use the Oracle Smart Update application to apply the patch. If you apply the patch manually, you must also manually update the WebLogic classpath. For more information, see

http://docs.oracle.com/cd/E17904_01/web.1111/e13720/using_toplink.htm#EJBAD1309

**Note:** When ibi_apps fails to deploy due to the missing JPA files, the following error is produced:

To resolve the issue, apply the Oracle WebLogic Application Server patch 9923849.
WebLogic Post-Installation Step

When configuring WebLogic®, you must perform the following post-installation step.

You must create a new file called weblogic.xml in the WEB-INF directory for the WebFOCUS web application. It must contain the following information:

```xml
<?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.eclipse.persistence</wls:package-name>
     </wls:prefer-application-packages>
   </wls:container-descriptor>
</wls:weblogic-web-app>
```

Once the file is saved, you must recreate the .war file by adding it to webfocus.war. The .war file can be renamed based on your naming convention, and then redeployed.
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, Magnify) 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. In the left pane, expand Utilities, License Management, and select WebFOCUS Client.
The License Management dialog opens, as shown in the following image.

3. Click **Enter New License**.
The New License and Site Code field are displayed, as shown in the following image.

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.

**Converting WebFOCUS Portals and Favorites When Upgrading**

Because the architecture of WebFOCUS Portals and Favorites has changed in WebFOCUS Release 8.1, Portals and Favorites must be converted for use in the new architecture. If the Portals and Favorites were not automatically converted during the upgrade process, you can run the conversion utilities manually.
Procedure: How to Convert WebFOCUS Portals When Upgrading to WebFOCUS Release 8.1

The WebFOCUS Repository must be running to perform the conversion.

**Note:** If you are upgrading from an earlier version of WebFOCUS Release 8.1, you do not need to convert Portals, only Favorites.

1. Go to `drive:\ibi\WebFOCUS80\utilities\bip`.
2. Double-click the portalconversion.bat file.
3. Enter a WebFOCUS administrator ID and password.
4. Select the version of WebFOCUS from which you are migrating:
   - Select 1 to select WebFOCUS 77x. This is the default option.
   - Select 2 to select WebFOCUS 8x.
   - Select q to exit the conversion utility.
5. When the utility has completed the conversion, it will notify you. Press `Enter` to exit.

The log for the conversion is stored in `drive:\ibi\WebFOCUS80\migration_import\export`. The file name is `bip_favorites_migration.log`.

Procedure: How to Convert WebFOCUS Favorites When Upgrading to WebFOCUS 8.1

The WebFOCUS Repository must be running to perform the conversion.

**Note:** This step must also be performed if you are migrating Favorites from WebFOCUS Release 8.1 Version 00 to WebFOCUS Release 8.1 Version 03 or higher.

1. Go to `drive:\ibi\WebFOCUS80\utilities\bip`.
2. Double-click the favoritesmigration.bat file.
3. Enter a WebFOCUS administrator ID and password.
4. Select the version of WebFOCUS from which you are migrating:
   - Select 1 to select WebFOCUS 77x. This is the default option.
   - Select 2 to select WebFOCUS 8x.

**Note:** If you have upgraded from WebFOCUS Release 8.1 Version 00 to a later version of Release 8.1, the location will be `drive:\ibi\WebFOCUS81\utilities\bip` instead.
Select q to exit the conversion utility.

5. When the utility has completed the conversion, it will notify you. Press Enter to exit.

The log for the conversion is stored in drive:\ibi\WebFOCUS80\migration_import\export. The file name is bip_portal_conversion.log.

**Note:** If you have upgraded from WebFOCUS Release 8.1 Version 00 to a later version of Release 8.1, the location will be drive:\ibi\WebFOCUS81\migration_import\export instead.

---

**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 install_directory\ibi\apps directory.

**WebFOCUS In a Split Web-tier Configuration**

![WebFOCUS in a Split Web-tier Configuration](image)

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. This is described in *Using the Static Content Server Option* on page 149.

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\WebFOCUS81\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 /ibi/apps 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.

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 `install_directory/ibi/WebFOCUS81/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, `install_directory/ibi/WebFOCUS81/logs/wfapproot.log` and `install_directory/ibi/WebFOCUS81/logs/wfibih.html.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.2014-01-01`). You can increase the log level by editing `install_directory/ibi/WebFOCUS81/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}/wfibihmtl.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/WebFOCUS81/config
   -DIBIARLOG=install_directory/ibi/WebFOCUS81/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 Welcome Page

WebFOCUS 8 contains a Welcome page in the WebFOCUS BI Portal from which you can access WebFOCUS interfaces, such as the WebFOCUS Administration Console.

**Procedure:** How to Access the WebFOCUS Welcome 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.

The WebFOCUS Sign In page opens, as shown in the following image.

![WebFOCUS Sign In page](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 67.

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 BI Portal page displays, as shown in the following image.

   ![WebFOCUS BI Portal](image)

   You can change the default credentials using the Security Center facility. Click **Administration** from the top menu, and then **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 Welcome page, or you can access the WebFOCUS Administration Console directly from the browser by supplying its URL.

Access the WebFOCUS Administration Console using Internet Explorer or Firefox.

**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 Welcome page, then 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 Programs menu.

You can also manually enter the following URL in your browser:

http://hostname:port/ibi_apps/console/webfocusconsole.jsp

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.

![WebFOCUS Administration Console](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. On the left pane of the WebFOCUS Administration Console, click *Diagnostics*.
2. Below Verification, click *WebFOCUS Client*.
3. Review the test results and troubleshoot accordingly.
   
   For troubleshooting assistance, see *Troubleshooting WebFOCUS and ReportCaster* on page 187.
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\WebFOCUS81\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. If this is the only server the client will access, you can proceed to Configuring Static Authentication on page 157.

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, click Reporting Servers.

   The right pane displays all defined WebFOCUS Reporting Servers. To edit parameters of a defined WebFOCUS Reporting Server, select its radio button and click Modify.

3. To define an additional node, click 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 fail over. 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\WebFOCUS81\client\wfc\etc\cgivars.wfs
```

The following variable specifies the default server:

```
IBI_REPORT_SERVER
```

To set this using the WebFOCUS Administration Console:

1. On the left pane of the WebFOCUS Administration Console, under Configuration, click Client Settings and then click Reporting Server.

2. In the IBI_REPORT_SERVER field, type the node name of the default server.

3. Click Save on the bottom of the page.

4. On the top of the page, click Clear Cache.

**Configuring Static Authentication**

When the client accesses a WebFOCUS Reporting Server running with security, the client must sign in to the server for tasks, such as browsing metadata, listing files, or running reports. Either your applications or users can provide credentials, or you can use Static Authentication. With Static Authentication, you specify a user ID and password that the client always passes to the server. This can be set for all servers or for each individual server. Static authentication ensures that every WebFOCUS Client connection to a server accesses the server using the same environment configuration.

**Note:** In some environments, you may be able to use Trusted Authentication (Already Verified Processing) instead of Static Authentication. For more information, see the *WebFOCUS Security and Administration* manual. This section only addresses static authentication.
The following variables define static authentication:

IBI_REPORT_USER
IBI_REPORT_PASS

You should set these variables using the WebFOCUS Administration Console so you can encrypt the file containing your password. Static authentication is defined globally for all nodes in the cgivars.wfs file. Static authentication can be defined for a specific node by creating a profile with the node name.

**Procedure: How to Set Static Authentication Globally**

These steps set sign-in credentials that are used when accessing all servers.

1. On the left pane of the WebFOCUS Administration Console, click **Configuration**.
2. Under **Client Settings**, click **Reporting Server**.
3. Provide the credentials to use for static authentication in the **IBI_REPORT_USER** and **IBI_REPORT_PASS** fields.
4. Select the **ENCRYPT** checkbox to ensure that the file cannot be read through the file system. This is recommended because the file contains a user ID and password.
5. Click **Save**.
6. On the top of the page, click **Clear Cache** so your changes take effect.

**Procedure: How to Set Static Authentication for a Specific Node**

These steps set sign-in credentials that are used when accessing a specific node (a server or a cluster).

1. On the left pane of the WebFOCUS Administration Console, click **Reporting Servers**.
2. Under Reporting Servers, click **Remote Services**.
   The right pane displays defined WebFOCUS Reporting Servers.
3. Select the node for which you are setting authentication, and click **Profile**.
4. Uncomment one pair of **IBI_REPORT_USER** and **IBI_REPORT_PASS** lines, and set them to the account you wish to use.
5. Select the **ENCRYPT** checkbox to ensure that the credentials cannot be read through the file system.
6. Click **Save**. A profile for the node is created if it does not already exist.

For additional information on using the WebFOCUS Administration Console, click **Help** or see the WebFOCUS Security and Administration manual.
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**

   
   This console was introduced in *How to View the Web Console and Test the Server* on page 57.

2. Click the Workspace tab.

3. Right-click the Workspace folder in the navigation pane and select License, or click License on the ribbon.

4. Enter your Active Technologies license in the license_active_report field, and click Save and Restart Server.

Active Technologies for Adobe Flash Consideration

Active Technologies for Adobe® Flash® is generated using a Java-based compiler engine that is included with Adobe Open Source Flex SDK for the WebFOCUS Reporting Server. There is a known issue with the Adobe Flex® compiler not working properly with the IBM version of Java due to a conflict between the version of Xerces that the Flex software uses and the one that is included with the IBM JVM. As a workaround, ensure that the JVM loads the version of Xerces supplied with the Flex software instead of the version supplied with the IBM JVM.

Make sure the Flex compiler uses the xercesImpl.jar file that is provided in the Flex library folder under the ibi folder. Add the following syntax into the user ID profile that starts the WebFOCUS Reporting Server:

```bash
export CLASSPATH=/ibi/srv81/home/etc/flex/lib/xercesImpl.jar:$CLASSPATH
```

This must be set in the CLASSPATH because the Flex compiler does not read the IBI_CLASSPATH when it is executed.

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:

```xml
<Connector port="8080" protocol="HTTP/1.1"
   connectionTimeout="20000"
   redirectPort="8443" maxPostSize="-1"/>
```

**WebLogic Post-Installation Step**

When configuring WebLogic®, you must perform the following post-installation step.

You must create a new file called weblogic.xml in the WEB-INF directory for the WebFOCUS web application. It must contain the following information:

```xml
<?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.eclipse.persistence</wls:package-name>
     </wls:prefer-application-packages>
   </wls:container-descriptor>
</wls:weblogic-web-app>
```

Once the file is saved, you must recreate the .war file by adding it to webfocus.war. The .war file can be renamed based on your naming convention, and then redeployed.

**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

As of WebFOCUS 8, a unified repository model (referred to as the WebFOCUS repository) has been implemented to provide streamlined data access for all your reporting, scheduling, security, and administrative requirements. Tables that are created for ReportCaster and accessed by the Distribution Server are now part of the WebFOCUS repository. The WebFOCUS Business Intelligence (BI) Portal, which enables end users to access WebFOCUS reports through a user-friendly web interface, stores and retrieves reporting content from the WebFOCUS repository.

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.

Since the WebFOCUS repository has been restructured as of WebFOCUS 8 and is different from previous WebFOCUS releases, you must create a new repository when migrating from earlier WebFOCUS 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\WebFOCUS81\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. Double-click the `WFReposUtilGUI.bat` file. If prompted, enter Repository administrator credentials.

   The WF Repository Management dialog box opens, as shown in the following image.
3. Select a run mode from the drop-down list, as shown in the following image.

The following run modes are available:

- CREATE
- INSERT
- CREATE_INSERT
- UPDATE
- DROP
- DROP_CREATE
4. Click Run.
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 187.

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, as shown in the following image.

   ![WebFOCUS Sign In Page](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 67.

3. Enter the following default credentials:

   - User Name: admin
   - Password: admin
4. Click Sign In.

The WebFOCUS BI Portal page appears, as shown in the following image.

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 and expand the Configuration tab in the left pane.

2. 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. Under the ReportCaster tab, click Utilities, and then click Restart ReportCaster.

      A confirmation window opens.

   b. Click OK.

4. Check the status to verify that ReportCaster is running in full function mode by clicking Utilities under the ReportCaster tab, then ReportCaster Status.

   The status appears in the right pane and should read:

   The Distribution Server 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 Console 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, 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/WebFOCUS8x/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/WebFOCUS81/ReportCaster/bin

The dserver.xml file will be exported to the following directory:

ibi/WebFOCUS81/ReportCaster/cfg

To import the dserver.xml file from your file system, copy the dserver.xml file to the following directory:

ibi/WebFOCUS81/ReportCaster/cfg

Run the importcfg utility, which is located in the following directory:

ibi/WebFOCUS81/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:

\texttt{ibi\WebFOCUS81\ReportCaster\bin}

The rc_preference.xml file will be exported to the following directory:

\texttt{ibi\WebFOCUS81\ReportCaster\cfg}

To import the rc_preference.xml file from your file system, copy the rc_preference.xml file to the following directory:

\texttt{ibi\WebFOCUS81\ReportCaster\cfg}

Run the `importrcpref` utility, which is located in the following directory:

\texttt{ibi\WebFOCUS81\ReportCaster\bin}

\textbf{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:

\texttt{ibi\WebFOCUS81\ReportCaster\bin}

The sendmodes.xml file will be exported to the following directory:

\texttt{ibi\WebFOCUS81\ReportCaster\cfg}

To import the sendmodes.xml file from your file system, copy the sendmodes.xml file to the following directory:

\texttt{ibi\WebFOCUS81\ReportCaster\cfg}

Run the `importsendmode` utility, which is located in the following directory:

\texttt{ibi\WebFOCUS81\ReportCaster\bin}

\textbf{ReportCaster Configuration}

ReportCaster configuration parameters are managed within the ReportCaster Console Configuration tab. For additional ReportCaster configuration information, see the \textit{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 -Xms256m -Xmx512m
```

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, as shown in the following image.

![Secondary Distribution Server Dialog Box](image-url)
4. Select the **Enabled** check box.

![Secondary Distribution Server](image)

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, as shown in the following image.

4. Select the *Enabled* check box.

5. Click *Add*.
6. Enter the name, host name, and port number of the 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.

**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\WebFOCUS81\webapps\webfocus\WEB-INF\conf` folder.
The following code is an example of a second AxisServletListener.

```xml
<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\WebFOCUS81\ReportCaster\bin` directory and double-click `sshkeygen.bat`.
   
   The ssh-keygen dialog box opens, as shown in the following image.

   ![SSH Key Generation Dialog Box](image1.png)

   
   2. Set the output file to `ibi\WebFOCUS81\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\WebFOCUS81\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.
This chapter explains how to verify and secure WebFOCUS Business Intelligence Portal and Dashboard.

If you do not use WebFOCUS Business Intelligence Portal or Dashboard, proceed to Troubleshooting WebFOCUS and ReportCaster on page 187.

In this chapter:

- Verifying and Configuring WebFOCUS Business Intelligence Portal and Dashboard
- Restricting File Permission Access to Managed Reporting

Verifying and Configuring WebFOCUS Business Intelligence Portal and Dashboard

WebFOCUS Business Intelligence Portal and Dashboard provide user interfaces that allow administrators, developers, and end users to access WebFOCUS through a web browser:

- **WebFOCUS Business Intelligence Portal (BI Portal).** 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 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.
The BI Dashboard is a HTML-based thin client that enables you to create a customized user interface to access WebFOCUS Managed Reporting. In WebFOCUS 8, the BI Portal is the successor to the WebFOCUS BI Dashboard. The BI Dashboard is available in WebFOCUS 8 to customers with active Managed Reporting licenses for earlier WebFOCUS releases who want to migrate their existing Dashboard views. For more information on the BI Dashboard, see the Business Intelligence Dashboard manual. For questions regarding licensing, contact your Information Builders branch representative.

If you installed the Portal with the WebFOCUS Client, you should verify that the interfaces are accessible, as explained below.

**Note:** In addition to these interfaces, you can create and run independent WebFOCUS applications and reports using Developer Studio. Developer Studio is installed separately from WebFOCUS on Windows machines. Developer Studio provides GUI tools to help developers create advanced web reporting applications that use WebFOCUS to report on data. Using Developer Studio, you can also create Maintain applications that update, as well as report on data.

**Caution:** If you installed a pop-up blocker for your browser, you must disable it when accessing the Portal.

### WebFOCUS Business Intelligence Portal Verification

It is recommended to access the Portal to confirm the installation and set the administrator password.

**Procedure:** How to Access WebFOCUS Business Intelligence Portal

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, as shown in the following image.

![WebFOCUS Sign In Page](image)

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 Business Intelligence Portal Welcome page opens in your web browser, as shown in the following image.

![WebFOCUS Welcome Page](image)

**Note:** If the WebFOCUS Business Intelligence Portal Welcome page does not appear, verify that your web server is running and that the proper aliases have been defined.

4. If you did not migrate, set a 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.

![Edit User dialog box]

**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.

![Set Password dialog box]

**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 168.

**f.** Click OK.

You are returned to the Edit User dialog box.
g. Click OK.
You are returned to the Security Center dialog.

h. Click Close.

5. Return to the main WebFOCUS Business Intelligence Portal and optionally create a report using InfoAssist.

If you are unfamiliar with Managed Reporting, refer to the Managed Reporting manual or click the Help tab. If you receive errors while using InfoAssist, your application server may not be properly compiling JSP files.

For details on resolving errors in compiling JSP files, refer to Java Version Requirement on page 128.

Business Intelligence Dashboard
You can optionally verify that the Business Intelligence Dashboard is properly configured by accessing the View Builder.

Procedure: How to Open and Sign In to the View Builder

1. Go to the following URL in your web browser:
   
   http://hostname:port/ibi_apps/bid/vblogin

2. You can also select View Builder from the Tools menu in the WebFOCUS Business Intelligence Portal.
Restricting File Permission Access to Managed Reporting

For development environments that are safely behind a firewall, the remainder of this chapter is optional.

For production environments, you can optionally enhance the security of Managed Reporting by restricting access to its data and preventing users from accessing Managed Reporting data through the file system. File system access to Managed Reporting data should be avoided because sensitive information can be exposed, production reports can be altered, and Managed Reporting can be rendered inoperable.

Managed Reporting content is stored in the WebFOCUS Repository. It also uses the following directory for processing:

`drive:\ibi\WebFOCUS81\temp`

During normal operation, these directories should only be accessed by the account or accounts that run the WebFOCUS servlets. You can increase security by ensuring Windows prevents any other user IDs from accessing these directories. You may also want to grant file system access to an administrator group for support and debugging purposes.

The required accounts vary considerably, depending on your application server and other configurations. Consult your application server and operating system documentation for more information.

- For Tomcat with or without IIS, see *Tomcat User ID and NTFS Permissions* on page 238.
- For other web or application servers, consult their documentation to determine the user IDs. Grant these user IDs full control over the basedir and temp directories. Then remove other user IDs or groups, except those you explicitly wish to have access to.
Restricting File Permission Access to Managed Reporting
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 89. 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 198 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\srv81\wfs\etc\edasprof.prf

   If you receive a Resource not found message, then this may be the problem.

6. Be aware that WebFOCUS does not support two concurrent Microsoft Internet Explorer sessions from a single PC. This is due to an Internet Explorer cookie management limitation. When you run two browser sessions simultaneously from the same machine, messages such as file not found, appear.

7. 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.

8. Turn on tracing through the WebFOCUS Administration Console.

9. 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.

10. In the WebFOCUS Administration Console, click Diagnostics on the left and use the available options to troubleshoot.

11. 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 a service pack 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, App Studio, and Developer Studio. For additional information, see Web Browser Support for WebFOCUS, which can be accessed by clicking on the following URL:

https://techsupport.informationbuilders.com/tech/wbf/wbf_tmo_027.html

**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.

Reference: Firefox Support

For information on supported Firefox browser versions, see Web Browser Support for WebFOCUS, which can be accessed by clicking on the following URL.

https://techsupport.informationbuilders.com/tech/wbf/wbf_tmo_027.html

The following settings are required to use Firefox with Dashboard:

- Allow pop-ups.
- Open links from other applications in a new window.
- To use the View Builder, set `security.checkloaduri` to false.

JVM Support Issue with IBM WebSphere Application Server

WebFOCUS 8 requires Java VM Version 6 or higher 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. Click Diagnostics.
  3. Select JVM Property Info.
WebFOCUS Troubleshooting Tips

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 89.

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.

- For IIS, you can determine the location of log information through the Internet Services Manager. Right-click your website, choose *Properties*, look on the *Web Site* tab, and click the *Properties* button near the *Enable logging* check box. The default location is usually similar to one of the following:
  
  C:\WINNT\system32\LogFiles\W3SVC1  
  C:\WINDOWS\system32\LogFiles\W3SVC1

  If you cannot access HTML or other pages, try granting Scripts-only executable permissions to the aliases. To do this, open the Internet Services Manager, expand your website, right-click the *ibi_html* folder, choose *Properties*, set the *Execute Permissions* box to *Scripts only*, and click *OK*. If necessary, repeat for the approot alias.

**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. In the left pane of the console, expand the Diagnostics node and click JVM Property Info, as shown in the following image.
The Java VM memory settings for your environment are displayed in the right pane, as shown in the following image.

<table>
<thead>
<tr>
<th>Memory Information (K)</th>
<th>Current</th>
<th>Peak</th>
<th>Initial</th>
<th>Committed</th>
<th>Maximum</th>
<th>Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
<td><strong>Pool Name</strong></td>
<td><strong>Used</strong></td>
<td><strong>Used</strong></td>
<td><strong>Initial</strong></td>
<td><strong>Committed</strong></td>
<td><strong>Maximum</strong></td>
</tr>
<tr>
<td>Heap</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*</td>
<td>*</td>
<td>152,510</td>
<td>~</td>
<td>131,072</td>
<td>323,072</td>
<td>466,048</td>
</tr>
<tr>
<td>PS Eden Space</td>
<td>31,677</td>
<td>131,072</td>
<td>32,768</td>
<td>125,696</td>
<td>131,320</td>
<td>n/a</td>
</tr>
<tr>
<td>PS Survivor Space</td>
<td>0</td>
<td>23,855</td>
<td>5,440</td>
<td>21,312</td>
<td>21,312</td>
<td>n/a</td>
</tr>
<tr>
<td>PS Old Gen</td>
<td>120,833</td>
<td>143,753</td>
<td>87,424</td>
<td>176,064</td>
<td>349,568</td>
<td>0</td>
</tr>
<tr>
<td>Non-Heap</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*</td>
<td>*</td>
<td>80,732</td>
<td>~</td>
<td>23,744</td>
<td>136,896</td>
<td>180,224</td>
</tr>
<tr>
<td>Code Cache</td>
<td>7,014</td>
<td>7,030</td>
<td>2,496</td>
<td>7,168</td>
<td>49,152</td>
<td>0</td>
</tr>
<tr>
<td>PS Perm Gen</td>
<td>73,717</td>
<td>73,717</td>
<td>21,248</td>
<td>129,728</td>
<td>131,072</td>
<td>0</td>
</tr>
</tbody>
</table>

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 click **Diagnostics** and **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 BI Portal. After you sign in to the WebFOCUS BI Portal, click **Tools** from the top menu bar and select **ReportCaster Console**. The ReportCaster Console opens in a new browser window. Click the **Configuration** tab.

   Click **Report Library** in the left pane and change the host name and port in the **Default Library URL for Email Notification** field.

   Then click the **Save** icon, followed by **Restart** to restart all WebFOCUS components.

2. Optionally update the short cuts 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\WebFOCUS81\utilities\showconsole`
   - `drive:\ibi\WebFOCUS81\utilities\ReportCasterMain`
   - `drive:\ibi\WebFOCUS81\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.
**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_45\bin
```

The exact directory varies depending on the Java release, and for Java 6, it is under C:\. This directory contains many Java utilities and is not added to your search PATH by the Java JDK installation. To add this to your search PATH:

1. Go to the Windows Control Panel and open the System folder.
2. Click the Advanced tab and 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_45\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\WebFOCUS81\webapps\webfocus
drive:\ibi\WebFOCUS81\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 back up 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\WebFOCUS81\webapps\webfocus

6. Use the jar command to create a new webfocus.war file that contains the contents of the webfocus directory and sub-directories. 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 My Computer or Windows Explorer, problems can arise.
Specific instances where WebFOCUS extensions may conflict are the following:

- **PRF files**, such as `drive:\ibi\srv81\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 My Computer or Windows 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.

**Procedure: How to Change File Type Mappings for WebFOCUS**

When you open a file in My Computer or Windows Explorer, Windows opens it in the default application for which its extension is mapped. This mapping does not prevent you from opening a file using a different application than the one to which it is mapped. Therefore, changing this mapping is only required if you open WebFOCUS files from My Computer or Windows Explorer.

You can change mappings as follows:

1. Open My Computer or Windows Explorer.
2. Select the Tools menu and then Folder Options.
3. Select the File Types tab.
4. Scroll through the list of files types and select the extension you wish to change. For example: **PRF**
5. Click the Advanced button.
   - The Edit File Type windows appears.
7. In the Action field type: **Edit**
8. Click Browse and specify the application you wish to use for WebFOCUS files. For Notepad, browse to one of the following:

C:\WINDOWS\NOTEPAD.exe
C:\WINNT\NOTEPAD.exe

9. Click OK.

10. Check the Always Show Extension box.

11. Select Edit in the list of actions.

12. Click Set Default.

13. Click OK.

This should not interfere in the operation of any applications, but will prevent WebFOCUS files from opening in the wrong applications.

**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:

```xml
<Host name="localhost" appBase="webapps"
  unpackWARs="true" autoDeploy="true"
  xmlValidation="false" xmlNamespaceAware="false">
```

and change autoDeploy to false:

```xml
<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.
### 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 Console**. The ReportCaster Console opens in a new browser window. Click the **Configuration** icon, 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 67 and *Configuring Web and Application Servers* on page 89.

- 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 **Programs**, **Apache Tomcat 8.0**, **Configure Tomcat**, and **Java**. Then, adjust the **Java Classpath** field, if needed.

### 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
  java -version
  ```

  Something similar to the following should appear:

  ```java
  java version "1.8.0_45"
  ```

  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 67 and *WebFOCUS ReportCaster Post-Installation Tasks* on page 165.
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\WebFOCUS81\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 199. 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 BI Portal. After you sign in to the WebFOCUS BI Portal, click Tools from the top menu bar and select ReportCaster Console. The ReportCaster Console opens in a new browser window. Click the Configuration icon, which contains the ReportCaster configuration settings.

## Troubleshooting Repository Errors

Review the installation and configuration instructions in Installing the WebFOCUS Client on page 67, WebFOCUS Repository Post-Installation Tasks on page 160, and Additional WebFOCUS Repository Topics and Tasks on page 211.

Ensure the database server is running.

Ensure the repository tables exist.

Ensure the repository tables are at the correct release level. The structure of the repository has changed in WebFOCUS 8, and an earlier repository cannot be used.

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 214.

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\WebFOCUS81\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 193. 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\WebFOCUS81\ReportCaster\bin\classpath.bat

and in the registry:

HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Information Builders\ReportCaster\WF81\Parameters\Java\Classpath

For SQL Server, ensure SQL Server authentication is supported, as explained in *SQL Server Pre-Installation Steps* on page 224.

**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\WebFOCUS81\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 BI Portal. After you sign in to the WF BI Portal, click Tools from the top menu bar and select ReportCaster Console. The ReportCaster Console opens in a new browser window. Click the Configuration icon. The Distribution Server trace and log settings can be accessed in the left pane.

The trace files appear in drive:\ibi\WebFOCUS81\ReportCaster\trc. In addition, check the log files in drive:\ibi\WebFOCUS81\ReportCaster\log for more information.
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 8.1 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 6 or higher
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:

```xml
<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
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.
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 206.
On the WebFOCUS Reporting Server (HOLD), as explained in _HOLD Graphs Overview_ on page 206.

**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.

There are two options when using servlet. They can be set in cgivars.wfs through the WebFOCUS Administration Console.

- **SSG_EXTERNAL=NO** (thread-based)
  
  Graphs are generated by threads of existing application server processes. This is the default and normally is recommended.

- **SSG_EXTERNAL=YES** (process-based)
  
  A new Java VM process is launched when generating graphs.

**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.
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.

### IBIJAVAPATH (process-based)

If you do not wish to use GRAPHSERVURL or JSCOM3, you can use the IBIJAVAPATH method where the server launches Java processes to generate server-side graphs.

### 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:

```plaintext
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\WebFOCUS81\ibi_html\javaassist\images\tdg

Provided the JSCOM3 listener is started, no steps are needed to configure it in WebFOCUS 7.6. 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\WebFOCUS81\jre\bin\client

The exact JDK directory depends on your Java release. For a different JDK release, substitute accordingly. If you need assistance, see How to Verify or Enable the JSCOM3 Listener on page 59, or the Server Installation WebFOCUS Reporting Server DataMigrator Server 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.

Configuring for IBIJAVAPATH

If you do not wish to use JSCOM3 or GRAPHSERVURL, you can use the older process-based IBIJAVAPATH method. With IBIJAVAPATH, each graph request is launched as a separate Java process using the IBIJAVAPATH environment variable. This variable must be declared before the server is started. You can add it to the user .profile or to the edastart script.

IBIJAVAPATH is used if GRAPHSERVURL is not set and if the IBIJAVAPATH environment variable is set. You do not need to disable JSCOM3 in order to use IBIJAVAPATH.

Procedure: How to Set IBIJAVAPATH

1. Open the Windows Control Panel.
2. Double-click the System icon.
3. Click the Advanced tab and then click the Environment Variables button.
4. Click the New button on the bottom area of the window to create a system variable.
5. In the *Variable Name* field, enter:

   **IBIJAVAPATH**

6. In the *Variable Value* field, define the value as:

   - The java command.
   - The `-classpath` option.
   - The full path to the following file:

     ```
     drive:\ibi\srv81\home\etc\java\wf\IBIGifGraphChart.jar
     ```

     For example:

     ```
     java -classpath E:\ibi\srv81\home\etc\java\wf\IBIGifGraphChart.jar
     ```

     Everything should be written out on one line, and the only spaces should be before and after `-classpath`. The path and drive on your machine may be different than the example.

7. Reboot your system.
This appendix optionally applies to WebFOCUS Managed Reporting and ReportCaster users. It contains:

- Reference information about repositories (Repository JDBC Concepts on page 211 and Repository Connection Information on page 214).
- Sizing information for creating tablespaces (Sizing Guidelines on page 219).
- Lesser used tasks and configuration information (Other WebFOCUS Repository Utilities and Tasks on page 221).
- SQL Server configuration information for those less familiar with SQL Server (SQL Server Pre-Installation Steps on page 224).
- MySQL database installation and configuration information (MySQL Repository Set Up on page 228).

In this appendix:

- Repository JDBC Concepts
- Repository Connection Information
- Sizing Guidelines
- Other WebFOCUS Repository Utilities and Tasks
- SQL Server Pre-Installation Steps
- MySQL Repository Set Up

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. ReportCaster communicates with an RDBMS using Java Database Connectivity (JDBC).
**Repository JDBC Concepts**

**JDBC Overview**

JDBC provides a way for Java programs to access databases and other data sources. Using JDBC, 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, this is set in the WebFOCUS configuration file (webconfig.xml). If you need to change this, you can edit it using the WebFOCUS Administration Console.

**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 (webconfig.xml). If you need to change this, you can edit it using the ReportCaster Server Configuration Interface.

**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.
There are two types of JDBC drivers that connect in different ways. WebFOCUS normally uses a Type 4 or Type 2 driver. A Type 4 driver is entirely Java-based. A Type 2 driver includes files compiled for a specific platform (native files).

The JDBC driver must be installed on the machine or machines that run WebFOCUS Client and ReportCaster Distribution Server. For Type 4 drivers, you can normally just copy the driver into a directory on the WebFOCUS machines. For Type 2 drivers, you may need to install separate components.

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\WebFOCUS81\ReportCaster\bin\classpath.bat

  and in the registry:

  HKEY_LOCAL_MACHINE\SOFTWARE\Information Builders\ReportCaster\WF81\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 Programs, Apache Tomcat 8.0, and Configure Tomcat. Then select the Java tab and add a semi-colon 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 WebFOCUS81 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 Distribution Server installation, this is created and set.

- For Derby, 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.

- For other databases and drivers, you must provide the JDBC path.
This value is stored in the WebFOCUS configuration file (webconfig.xml). If you need to change this, you can edit it using the Repository section of the Administration Console.

**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 (webconfig.xml). The WebFOCUS Administration Console can be used to edit the JDBC class value if you change your configuration to use a JDBC driver with 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 hostname 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 (webconfig.xml). The WebFOCUS Administration Console can be used to edit the JDBC URL if you change your configuration to use a JDBC driver with a different JDBC URL.

**Repository Connection Information**

The connection information varies depending on the type of driver and database.

- For DB2, see [DB2 Connection Information](#) on page 215.
- For Derby, see [Derby Connection Information](#) on page 216.
- For MySQL, see [MySQL Connection Information](#) on page 216.
For Oracle, see *Oracle Connection Information* on page 217.


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.
Repository Connection Information

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 (WebFOCUS81, 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 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 228.
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\nbin.jar where \nn\nis 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 (ojdbc16.jar for Java 6).

Based on this information, the installation creates the connection information:

- CLASS (Oracle 10g or higher):

  oracle.jdbc.OracleDriver
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).


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 224.

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. This must use SQL Server authentication and have db_owner rights.
- JDBC Driver (com.microsoft.sqlserver.jdbc.SQLServerDriver).

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.


1. Open the SQL Server Configuration Manager.
2. Under SQL Server Network Configuration, select *Protocols for MSSQLSERVER*.
   
   A list of valid network protocols for 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.

**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>
<thead>
<tr>
<th>Table Name</th>
<th>Rows</th>
<th>Max Rows Width (bytes)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOTACCES (Report Library only)</td>
<td>2,000</td>
<td>292</td>
<td>One record per access list and 1:m with BOTLIST.</td>
</tr>
<tr>
<td>BOTADDR</td>
<td>2,000</td>
<td>101</td>
<td>One record per address list and 1:m with BOTDEST.</td>
</tr>
<tr>
<td>Table Name</td>
<td>Rows</td>
<td>Max Rows Width (bytes)</td>
<td>Notes</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------</td>
<td>------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>BOTCAT (Report Library only)</td>
<td>20,000</td>
<td>751</td>
<td>One record for each schedule in the library. If the schedule is burst, each burst report is a record.</td>
</tr>
<tr>
<td>BOTSCDATE</td>
<td>20,000</td>
<td>807</td>
<td>Could have multiple records per record in the BOTSCIT file (an average number might be 20). Added for the custom scheduling interval feature.</td>
</tr>
<tr>
<td>BOTDEST</td>
<td>20,000</td>
<td>210</td>
<td>One record per destination.</td>
</tr>
<tr>
<td>BOTDIST</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOTJOURN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOTLIB (Report Library only)</td>
<td>10,000</td>
<td>NA</td>
<td>One record per report in the library (blob).</td>
</tr>
<tr>
<td>BOTLIB (Report Library only)</td>
<td>10,000</td>
<td>713</td>
<td>One record per report in the library (blob).</td>
</tr>
<tr>
<td>BOTLIST (Report Library only)</td>
<td>20,000</td>
<td>298</td>
<td>One record per destination.</td>
</tr>
<tr>
<td>BOTLOG</td>
<td>10,000</td>
<td>228</td>
<td>One record per job run and a 1:m with BOTLOG2.</td>
</tr>
<tr>
<td>BOTLOG2</td>
<td>100,000</td>
<td>361</td>
<td>One record per job message.</td>
</tr>
<tr>
<td>BOTPACK</td>
<td>10,000</td>
<td>124</td>
<td>One record per schedule.</td>
</tr>
<tr>
<td>BOTPARMS</td>
<td>5,000</td>
<td>369</td>
<td>One record per parameter per task.</td>
</tr>
<tr>
<td>BOTSBD</td>
<td>500</td>
<td>625</td>
<td>One record per designated blackout day per group.</td>
</tr>
<tr>
<td>BOTSCHED</td>
<td>10,000</td>
<td>2252</td>
<td>One record per schedule.</td>
</tr>
<tr>
<td>Table Name</td>
<td>Rows</td>
<td>Max Rows Width (bytes)</td>
<td>Notes</td>
</tr>
<tr>
<td>------------</td>
<td>------</td>
<td>------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>BOTSCIT</td>
<td>10,000</td>
<td>590</td>
<td>Could have one record per record in the BOTSCHED file. Added for the custom scheduling interval feature.</td>
</tr>
<tr>
<td>BOTSIT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOTSTATE</td>
<td>1</td>
<td>256</td>
<td>Contains 1 record. Added for the Failover feature.</td>
</tr>
<tr>
<td>BOTTASK</td>
<td>15,000</td>
<td>928</td>
<td>One task per schedule (can have multiple tasks per schedule so 1:m relationship with BOTSCHED).</td>
</tr>
<tr>
<td>BOTTELL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOTTSKEX</td>
<td>15,000</td>
<td>324</td>
<td>One per task.</td>
</tr>
<tr>
<td>BOTWATCH</td>
<td>20,000</td>
<td>330</td>
<td>One record per record in the BOTCAT file. Added for the Library Watch List feature.</td>
</tr>
</tbody>
</table>

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.

**Dropping or Creating Specific Table Groups**

The default table creation utility creates or drops and creates all repository tables. To drop and re-create only specific table groups, you can use an alternate utility. This is useful if you wish to remove all library data, but keep your schedules and address books.
**Procedure: How to Drop and Create Specific Tables**

1. Ensure that the database server is running.
2. From the Start menu, select Programs, Information Builders, WebFOCUS 81, Utilities, and then Create UOA Repository.

   The WF Repository Management dialog box opens, which allows you to create tables or to drop and re-create tables.

3. Select a run mode from the drop-down list.

   The following run modes are available:

   - CREATE
   - INSERT
   - CREATE_INSERT
   - UPDATE
   - DROP
   - DROP_CREATE
   - DROP_CREATE_INSERT
   - EXTRACT
CREATE_DDL

4. Click Run.

A prompt is displayed if any errors occur during the repository creation or re-creation process.

Changing the WebFOCUS Repository

If you wish to change repositories, you must adjust the connection parameters:

- CLASSPATH (JDBC Driver)
- JDBC CLASS
- JDBC URL
- Credentials

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 FOCUS 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.

2. If this is a different driver, add the JDBC driver path to the CLASSPATH of the application server.

   For Apache Tomcat, you can use the Start menu by selecting Programs, Apache Tomcat 8.0, and Configure Tomcat. Then select the Java tab and add a semi-colon plus the full path of the file to the end of the Java Classpath field.

3. Restart your application server.

4. Sign in to the WebFOCUS Administration Console from the Administration menu. Click Configuration, expand Application Settings, and then select Repository.
SQL Server Pre-Installation Steps

The Application Settings - Repository pane opens, as shown in the following image.

5. Provide values for the following repository configuration parameters according to your requirements:
   - IBI_Repos_DB_Driver
   - IBI_Repos_DB_URL
   - IBI_Repos_DB_User
   - IBI_Repos_DB_Password

6. If this is a different driver, add the JDBC driver path to the following ReportCaster configuration file:
   
   drive:ibi\WebFOCUS81\ReportCaster\bin\classpath.bat

   and to the following value in the registry:

   HKEY_LOCAL_MACHINE\SOFTWARE\Information Builders\ReportCaster\WF81\PARAMETERS\JAVA\CLASSPATH

7. 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

To use SQL Server for the WebFOCUS Repository, do the following:

- Ensure that SQL Server Authentication is enabled. See *How to Configure Security* on page 225.
- Create a SQL Server account that you will use to own this database. See *How to Create the Login ID* on page 225.
- Create a SQL Server database for the repository. See *How to Create the Repository Database* on page 226.


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 145. When the Distribution Server is installed (as explained in *Installing the WebFOCUS Client* on page 67), 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*. 
The following form appears for adding a new user ID.

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 *How to Create the Login ID* on page 225.
   
   You can leave the remaining defaults. An initial size of 1-5MB 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. 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 2014, 2012, 2008, or 2005**

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. You can downloaded the drivers free of charge from:

http://microsoft.com

Search the site for the driver for your SQL Server release.

The following file is the SQL Server 2014, 2012, and 2008 driver:

sqljdbc4.jar

The following file is the SQL Server 2005 driver:

sqljdbc.jar

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 67. 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 89.

**Procedure:**  **How to Enable TCP/IP in SQL Server 2014, 2012, 2008, and 2005**

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:


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 8.1, 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:


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:


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:

<table>
<thead>
<tr>
<th>user</th>
<th>host</th>
<th>db</th>
</tr>
</thead>
<tbody>
<tr>
<td>wfuser</td>
<td>%</td>
<td>wf</td>
</tr>
</tbody>
</table>

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:
   
   
   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.
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 235).
- Setting optional Tomcat security options (Tomcat Security Tips on page 238).
- Using deferred receipts with an MVS Server or with an alternate server by setting up a deferred server mapping.
- Manually changing aliases and context roots if you did not do so during the installation.

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 81 Server – Test
  - WebFOCUS 81 Server – Dev
  - WebFOCUS 81 – Test
  - WebFOCUS 81 – Dev
  - ReportCaster 81 – Test
  - ReportCaster 81 – 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 hostname, be sure to use the correct port and the exact hostname you will use for the website. If this is a separate port, provide the correct port. If this is a virtual hostname, 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 Reporting Server* on page 51 and *Installing the WebFOCUS Client* on page 67.
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 hostname. 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 hostname) feature.

When using virtual hostnames, you configure the DNS server so that multiple hostnames resolve to the same machine. When IIS receives a request for a webpage or other resource, IIS can determine which hostname was used when the request was made by looking at the HTTP host header. IIS then uses the hostname to determine which website was requested.

For example, if you are using virtual hostnames, 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 hostnames 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 hostnames.

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. This will be explained in a forthcoming technical memo.

**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**

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.*

**Procedure:** How to Set NTFS Permissions for Tomcat

After setting Tomcat to run as this user ID, you must grant this user ID full NTFS permissions to Tomcat and WebFOCUS directories

1. Open Windows Explorer and right-click the Tomcat installation directory:
   - `C:\Program Files\Apache Software Foundation\Tomcat 8.0`
   - `C:\ibi\tomcat`
2. Select **Properties** and click the **Security** tab.
3. Click **Add**.
4. Display all users on the local machine.
   a. Click **Advanced** in the Window that appears.
   b. If it is not set to your hostname, click the **Locations** button, select your hostname, and click **OK**.
   c. Click **Find Now** to display all users on the local machine.
5. Scroll down to select the user ID that you set to run Tomcat.
6. Click OK.
7. Click OK to return to the main properties window for the directory.
8. Select the Tomcat user ID, and check the Allow box for Full Control.
9. Click OK.
10. Repeat this procedure for the WebFOCUS81 and apps directories:

```
\drive:ibi\WebFOCUS81
\drive:ibi\apps
```

You can also further restrict permissions at a later time.

**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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