

WebFOCUS

WebFOCUS and ReportCaster Installation and
Configuration for UNIX
Release 8.2 Version 01M

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Contents

Preface	9
Documentation Conventions	10
Related Publications	11
Customer Support	11
Information You Should Have	12
User Feedback	13
Information Builders Consulting and Training	13
1. Introducing WebFOCUS and ReportCaster Installation	15
About WebFOCUS and ReportCaster	15
WebFOCUS Installation Overview	16
WebFOCUS and Your Network	16
WebFOCUS Components	17
WebFOCUS Processing	18
WebFOCUS Configuration	19
ReportCaster Installation Overview	22
ReportCaster Components	22
ReportCaster Processing	22
ReportCaster Configuration	23
WebFOCUS and ReportCaster Installation and Configuration Steps	24
Application Server and Web Application Overview	24
Web Servers and Application Servers	24
Web Applications	25
Running Web Applications	25
Accessing Web Applications	25
Security and User IDs for WebFOCUS and ReportCaster	26
Managed Reporting and ReportCaster IDs	26
WebFOCUS Reporting Server Security Providers	27
WebFOCUS Reporting Server User IDs	28
2. WebFOCUS and ReportCaster Installation Requirements	29
WebFOCUS and ReportCaster Installation Requirements	29
Full Installation Requirement	29

JVM and J2SE Support Information.	29
WebFOCUS and ReportCaster Machine Requirements.	30
End User Machine Requirements.	31
Desktop Requirements.	31
Disk Space Requirements.	32
Communication Requirements.	32
Web Server and Application Server Requirements.	33
User ID Requirements for the WebFOCUS Reporting Server.	33
User ID Requirements for the WebFOCUS Client.	34
User ID Requirements for the ReportCaster Distribution Server.	35
WebFOCUS and ReportCaster Machine Java Requirements.	35
ReportCaster Distribution Requirements.	36
WebFOCUS Repository Setup	36
Repository Options.	37
WebFOCUS Repository Pre-Installation Tasks.	39
3. Installing the WebFOCUS Reporting Server	41
Installing the WebFOCUS Reporting Server	41
Preliminary Installation Instructions.	41
Server Installation Steps.	42
WebFOCUS Reporting Server Verification and Configuration	47
Starting, Configuring, Testing, and Stopping the WebFOCUS Reporting Server.	48
WebFOCUS Reporting Server Directory Structure.	53
Silent Installation of the WebFOCUS Reporting Server	54
Running a Silent Installation.	54
4. Installing the WebFOCUS Client	57
Installing the WebFOCUS Reporting Server	57
Installing the WebFOCUS Cluster Manager	57
Installing the WebFOCUS Client	57
Troubleshooting the Installation.	74
Upgrading From an Earlier 8.2.x Release to Release 8.2 Version 01M	74
Upgrade Installation Steps.	74
Upgrading Content From Release 8.1.x or 8.0.x to Release 8.2 Version 01M	77

Troubleshooting.....	80
Creating the WebFOCUS UOA Repository	81
Configuring Web and Application Servers	81
WebFOCUS Client and ReportCaster Directory Structures	83
WebFOCUS Client Directories.....	83
ReportCaster Distribution Server Directories.....	84
File Permissions for WebFOCUS Client Directories.....	85
Uninstalling the WebFOCUS Client	86
5. Configuring Web and Application Servers	87
Configuration Overview	87
Documented Configurations.....	89
Configuring IBM WebSphere	90
Configuring Oracle WebLogic	99
Java Version Requirement.....	99
Update Java Settings.....	99
WebLogic Post-Installation Step.....	100
Manually Configuring Apache Tomcat With or Without Apache HTTP Server	100
Preparing Tomcat for WebFOCUS Configuration.....	101
Deploying WebFOCUS Web Applications With Tomcat.....	102
Configuring Apache HTTP Server.....	105
Connecting Apache HTTP and Tomcat Servers.....	105
Verifying the WebFOCUS Configuration With Tomcat and Apache HTTP Server.....	108
Installing and Configuring JBoss EAP 6.0.x or 6.2.x	111
Reconfigure the WebFOCUS Web Application Files.....	112
Deploying and Undeploying the WebFOCUS Web Application Files.....	115
6. Post-Installation Verification and Configuration	117
WebFOCUS Post-Installation Tasks	117
Configuring WebFOCUS in a Split Web-Tier and Application Server-Only Environment.....	117
Using the Static Content Server Option.....	118
WebFOCUS Client Verification and Configuration.....	119
Accessing the WebFOCUS Welcome Page.....	119
Accessing the WebFOCUS Administration Console.....	121

Running the Verification Tool.	123
Setting WebFOCUS Administration Console Authentication.	124
Defining Communications to WebFOCUS Reporting Servers.	124
Enabling Active Technologies.	125
Active Technologies for Adobe Flash Consideration.	126
Setting Tomcat HTTP POST Maximum Size.	126
Verifying and Troubleshooting Server Side Graphics (PCHOLD).	126
Configuring a Reverse Proxy for Apache Tomcat.	128
WebFOCUS Repository Post-Installation Tasks	129
WebFOCUS Repository Table Creation.	129
7. WebFOCUS ReportCaster Post-Installation Tasks	131
ReportCaster Verification	131
Testing the WebFOCUS Client.	131
Starting and Stopping the ReportCaster Distribution Server.	132
Verifying ReportCaster.	134
ReportCaster Configuration	135
Changing Configuration Parameters With Scripts.	135
Configuring the Memory Available for the ReportCaster Log Report.	136
Configuring the Heap Size for the ReportCaster Distribution Server.	137
Configuring ReportCaster Failover and Workload Distribution.	137
Adding Support for UTF-8 to the Distribution Server	138
Configuring Secure Communications to the ReportCaster Distribution Server.	138
Configuring ReportCaster Web Services in an SSL Environment.	139
Configuring ReportCaster for Graphs.	139
8. Business Intelligence Portal Verification and Security	141
Verifying and Configuring WebFOCUS Business Intelligence Portal	141
WebFOCUS Business Intelligence Portal Verification.	142
9. Troubleshooting WebFOCUS and ReportCaster	145
WebFOCUS Troubleshooting Tips	145
General Tips.	146
Web Browser Issues.	146
JVM Support Issue with IBM WebSphere Application Server.	147

Web and Application Server Debugging	147
Java Memory Issues	148
Character Set Issues	149
Using the jar Utility	150
Silent Installation Path Issues	151
ReportCaster Troubleshooting Tips	152
Distribution Server Traces	152
Troubleshooting Web Browser Errors	153
Troubleshooting ReportCaster Servlet Errors	153
Troubleshooting ReportCaster Distribution Server Errors	153
Troubleshooting Repository Errors	154
Troubleshooting ReportCaster Context Root	154
Redirecting Web Applications With the ReportCaster Context Root	155
Troubleshooting Reporting or Delivery Errors	155
A. Magnify Configuration	157
Installing Magnify on UNIX and z/OS	157
Prerequisites	157
Optimizing the Magnify Environment	158
Security	158
B. Additional Graph Configuration Options	161
Graph Options	161
Graph Invocation and Generation Options	161
PCHOLD (Server Side) Graphics Overview	162
HOLD Graphs Overview	163
Configurations for HOLD Graphics	163
Configuring GRAPHSEVRURL	164
Configuring for JSCOM3 HOLD	165
C. Additional WebFOCUS Repository Topics and Tasks	167
Repository JDBC Concepts	167
JDBC Overview	167
User ID and Password	168
JDBC Driver	168

JDBC Path.....	168
JDBC Class.....	169
JDBC URL.....	170
Repository Connection Information	170
DB2 Connection Information.....	171
Derby Connection Information.....	172
MySQL Connection Information.....	172
Oracle Connection Information.....	173
SQL Server 2016, 2014, 2012, and 2008 Connection Information.....	174
Sizing Guidelines	175
MySQL Repository Set Up	177
Installing MySQL.....	178
Increasing the max_allowed_packet Parameter Value.....	178
Running MySQL.....	178
Administering MySQL.....	179
Creating the WebFOCUS Reporting Database and User.....	179
Installing the MySQL JDBC Driver.....	182

Preface

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

How This Manual Is Organized

This manual includes the following chapters:

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

Chapter/Appendix		Contents
B	Additional Graph Configuration Options	Explains how to configure WebFOCUS graphics options.
C	Additional WebFOCUS Repository Topics and Tasks	Provides additional information on the WebFOCUS Repository.

Documentation Conventions

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

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

Convention	Description
. . .	Indicates that you can enter a parameter multiple times. Type only the parameter, not the ellipsis (...).
. . .	Indicates that there are (or could be) intervening or additional commands.

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Information You Should Have

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

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

- ❑ How is the problem affecting your business? Is it halting development or production? Do you just have questions about functionality or documentation?

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Thank you, in advance, for your comments.

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Introducing WebFOCUS and ReportCaster Installation

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

In this chapter:

- ❑ [About WebFOCUS and ReportCaster](#)
 - ❑ [WebFOCUS Installation Overview](#)
 - ❑ [ReportCaster Installation Overview](#)
 - ❑ [WebFOCUS and ReportCaster Installation and Configuration Steps](#)
 - ❑ [Application Server and Web Application Overview](#)
 - ❑ [Security and User IDs for WebFOCUS and ReportCaster](#)
-

About WebFOCUS and ReportCaster

WebFOCUS is a complete, web-ready data access and reporting system that connects users to data. WebFOCUS accesses and processes information located in any format on any platform and presents that information to users through a web browser or through formats, such as PDF, XLS, and XML. Using HTML and user friendly GUI tools, WebFOCUS developers can build powerful webpage interfaces that allow users to create and view reports.

WebFOCUS data access, network communications, and server operations are provided through WebFOCUS technology. WebFOCUS technology accesses data without concern for the complexities and incompatibilities of different operating systems, databases, file systems, file formats, and networks. You can access both local and remote data on over 35 platforms from more than 65 database formats, including SQL Server™, Oracle®, Ingres®, SAP®, and DB2™.

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

WebFOCUS Installation Overview

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

WebFOCUS and Your Network

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

The main requirements for installing WebFOCUS are:

- ❑ **Web Browser.** To access WebFOCUS applications, you need a web browser and a TCP/IP connection to a web server or application server.
- ❑ **Web Server and Application Server.** WebFOCUS runs in part through a web server or application server. WebFOCUS is flexible and offers several configuration options, so you can choose whether to use both a web server and an application server or just an application server. Apache Tomcat™ is provided and can be used as both a web server and application server.

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

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

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

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

A complete list of requirements is provided in [WebFOCUS and ReportCaster Installation Requirements](#) on page 29.

WebFOCUS Components

There are two main WebFOCUS components to install:

- ❑ **WebFOCUS Client.** The WebFOCUS Client runs as part of your application server and connects WebFOCUS to the web. When a user makes a request from a browser, the WebFOCUS Client receives and processes the request by passing it to the WebFOCUS Reporting Server. The WebFOCUS Client installation includes:
 - ❑ Java-based web connectivity components.
 - ❑ User interfaces, tools, and utilities.
- ❑ **WebFOCUS Reporting Server.** The WebFOCUS Reporting Server resides on machines that can access your data. The WebFOCUS Reporting Server provides data access, number crunching, and report generation functionality using WebFOCUS integration technology.

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

- ❑ **Business Intelligence Portal (BI Portal).** BI Portal enables your organization to grant authorized users access to information they need while restricting unauthorized users from sensitive or confidential data.
- ❑ **InfoAssist+.** WebFOCUS InfoAssist+ extends the power of WebFOCUS Managed Reporting. InfoAssist+ provides business users with the most advanced, yet simple to use, ad hoc reporting features needed to create intricate reports and perform insightful analysis.
- ❑ **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:

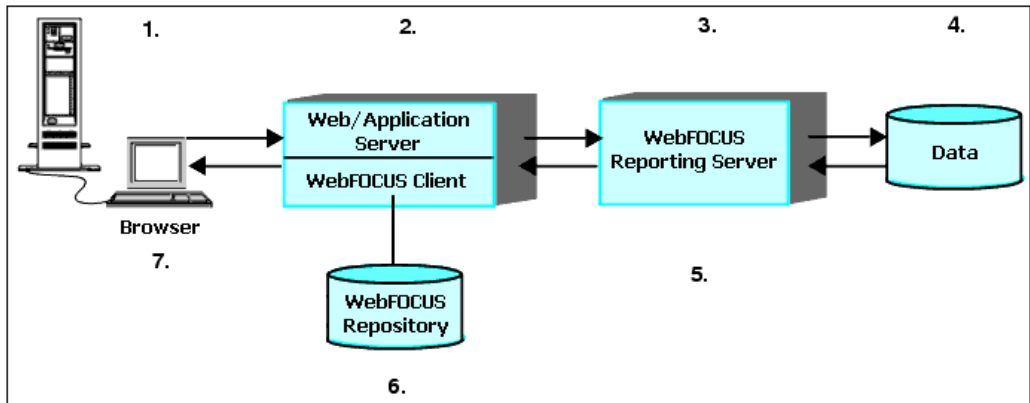
- ❑ **WebFOCUS App Studio.** App Studio can be installed on Windows and provides a development environment for WebFOCUS and Maintain applications. App Studio enables you to create advanced applications using a Windows GUI environment. For more information, see the App Studio documentation.
- ❑ **WebFOCUS RStat.** WebFOCUS RStat is a statistical modeling workbench. It allows you to perform common statistical, data mining tasks, and develop models that can be deployed as scoring applications on every platform. RStat enables data miners and Business Intelligence developers to collaborate with the same tools used to access, manipulate, or transform data, develop predictive models, and create and deploy scoring applications, as well as associated reports, to any worker within their organization.
- ❑ **WebFOCUS Quick Data.** WebFOCUS Quick Data is a Microsoft® Office® add-on that enables you to connect Microsoft Excel® directly to WebFOCUS reporting tools, where you can access and analyze all of your enterprise data.
- ❑ **WebFOCUS Performance Management Framework (PMF).** PMF is a WebFOCUS application template for tracking, storing, and aggregating metrics into scorecards to clearly evaluate goals. For more information, see the *WebFOCUS Performance Management Framework* manual.

WebFOCUS Processing

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

1. A user requests a report and passes parameters by calling a WebFOCUS servlet through links and forms on a webpage.
2. The request and parameters come to the WebFOCUS Client on the web or application server, which processes the parameters and creates a request for the WebFOCUS Reporting Server.
3. The WebFOCUS Reporting Server receives the request, processes it, and accesses any needed data.
4. Data is retrieved from data sources to process the request.
5. The WebFOCUS Reporting Server processes the request of the user using the retrieved data.
6. The response is returned to the WebFOCUS Client on the web or application server.

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



WebFOCUS Configuration

WebFOCUS employs a distributed architecture. This means that the WebFOCUS Client, the WebFOCUS Reporting Server, and your data can be located on any platform, anywhere in your network. You can easily connect an Apache web server running on UNIX to SQL Server data on Windows or DB2 data on z/OS.

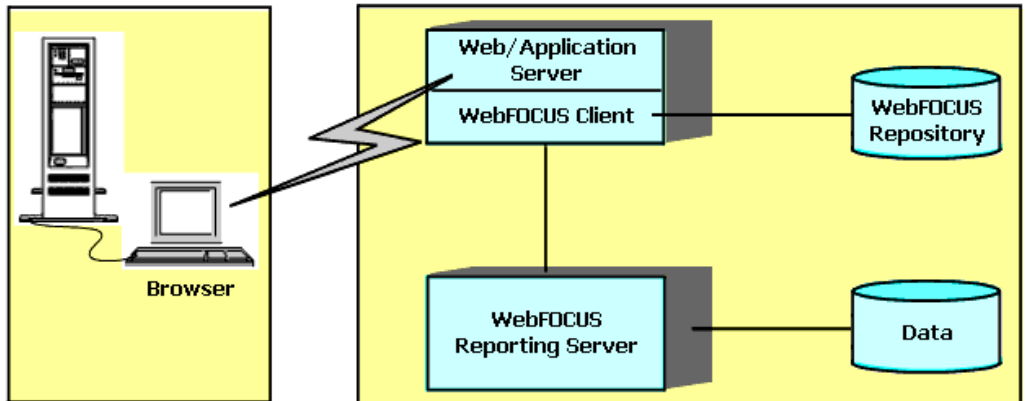
The configuration requirements are:

- ☐ The WebFOCUS Client must reside with the web and application servers.
- ☐ The WebFOCUS repository can reside on the same system or a different system.
- ☐ An instance of the WebFOCUS Reporting Server must be installed on machines with your data or machines that have access to your data. For example, if you are accessing Oracle, the WebFOCUS Reporting Server can be on the Oracle Server machine or on any machine with Oracle Client.

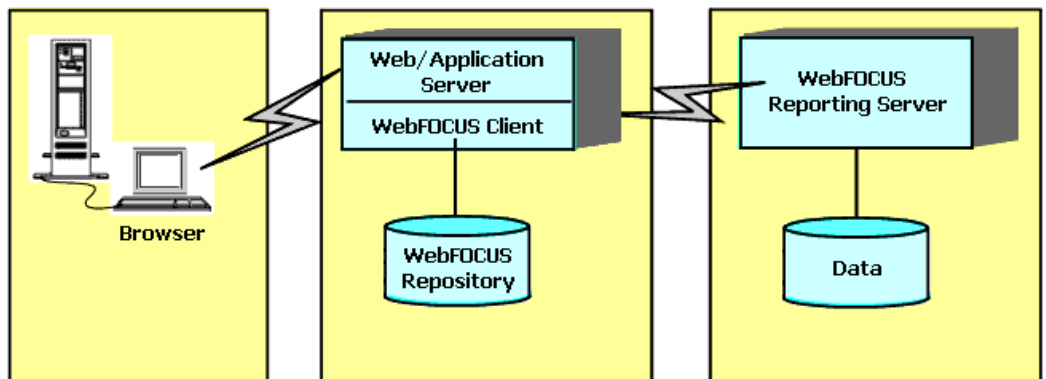
Note: All WebFOCUS components must be of the same release to communicate properly.

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

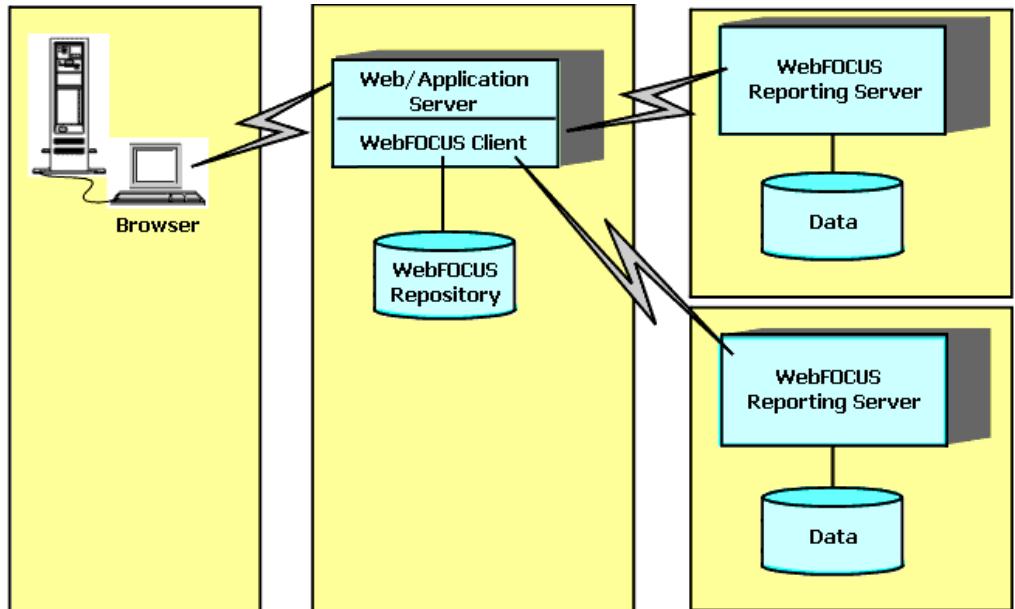
- ❑ **Stand-alone Configuration.** In a stand-alone configuration, the application server, WebFOCUS Client, WebFOCUS Reporting Server, and source data are all on the same machine.



- ❑ **Distributed Configuration.** In a distributed configuration, the WebFOCUS Client is installed on your web server, but the WebFOCUS Reporting Server and source data are on a different machine.



- ❑ **Multiple Data Source Configuration.** If you have source data on several different machines, WebFOCUS can integrate that data into one reporting environment. To allow this, instances of the WebFOCUS Reporting Server should be installed on machines with access to your source data. WebFOCUS technology provides the data access and format conversion functionality. For more information on integrating data from multiple machines and platforms, refer to the server documentation.



Note: In the previous example, the WebFOCUS Client connects to multiple WebFOCUS Reporting Servers. In other configurations, you can connect the WebFOCUS Client to a single WebFOCUS Reporting Server and then connect that WebFOCUS Reporting Server to other WebFOCUS Reporting Servers (hub-sub). For some data sources, you may need to connect WebFOCUS Reporting Servers to each other to perform joins.

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

ReportCaster Installation Overview

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

ReportCaster Components

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

There are three ReportCaster components:

- ❑ **ReportCaster Web Components.** ReportCaster web components are installed with the WebFOCUS Client as a J2EE web application. They include a user interface, an API, and connectivity components for managing delivery jobs and the Report Library.
- ❑ **ReportCaster Distribution Server.** The ReportCaster Distribution Server is a Java-based program that provides the back-end functionality to deliver reports and files. The Distribution Server can be installed with the WebFOCUS Client or installed on a separate machine.

Note: The ReportCaster Distribution Server is also referred to as the ReportCaster Server or the Distribution Server.
- ❑ **ReportCaster Tables.** The ReportCaster tables are part of the WebFOCUS repository, which ReportCaster uses for schedule, distribution, Report Library, and log information. You can store the WebFOCUS repository in a Derby™, Oracle, SQL Server, DB2, or any other supported JDBC™-compliant database.

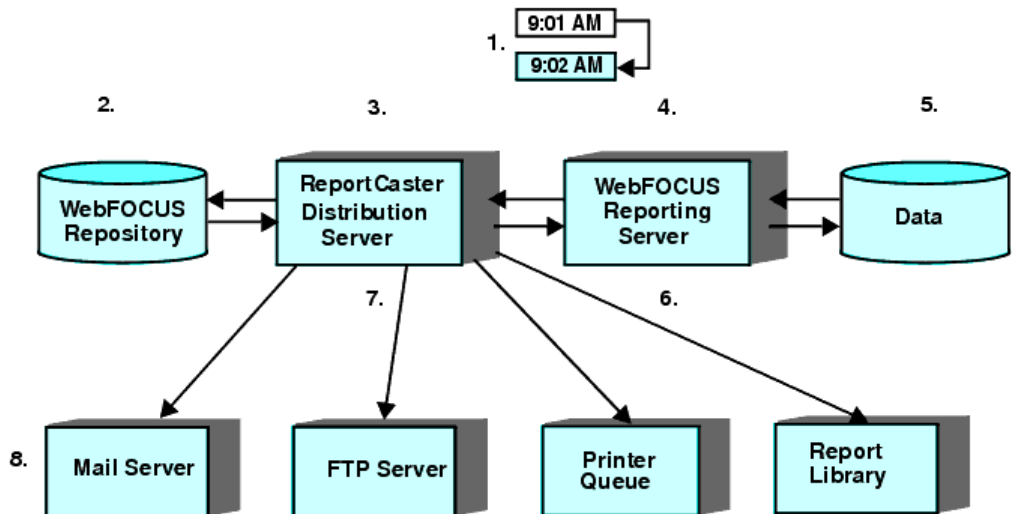
ReportCaster Processing

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

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

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

2. If jobs are found, the Distribution Server extracts the information from the WebFOCUS repository.
3. Each job is placed in a queue based on a priority setting found in the job description of the repository. Jobs in the queue are submitted to the WebFOCUS Reporting Server as resources become available.
4. The WebFOCUS Reporting Server receives each request, processes it, and accesses any needed data.
5. Data is retrieved from data sources to process the requests.
6. The WebFOCUS Reporting Server creates responses to the requests.
7. Responses are returned to the Distribution Server, which creates the addressing information necessary to send reports to their recipients. This includes any protocol-specific headers needed for email or FTP.
8. The Distribution Server sends files to the appropriate servers for delivery, such as a mail server for email or an FTP server for FTP. It can also place them in the Report Library.



ReportCaster Configuration

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

WebFOCUS and ReportCaster Installation and Configuration Steps

There are several steps to the installation and configuration process:

1. **WebFOCUS and ReportCaster Introduction.** Review this section to ensure you understand the different components involved in the installation.
2. **Pre-Installation Tasks.** Before installing WebFOCUS and ReportCaster, review all the requirements.
3. **WebFOCUS Reporting Server Installation.** Install the WebFOCUS Reporting Server on machines with access to your source data, as explained in [Installing the WebFOCUS Reporting Server](#) on page 41.
4. **WebFOCUS Client and ReportCaster Installation.** Install the WebFOCUS Client and ReportCaster, as explained in [Installing the WebFOCUS Client](#) on page 57.
5. **Web Server or Application Server Configuration.** Configure your web server or application server, as explained in [Configuring Web and Application Servers](#) on page 87.

Important: For a split-tier environment, see [Configuring WebFOCUS in a Split Web-Tier and Application Server-Only Environment](#) on page 117.
6. **WebFOCUS Post-Installation Tasks.** Verify the WebFOCUS configuration and optionally change default settings, as explained in [WebFOCUS Post-Installation Tasks](#) on page 117.
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 8.2.01 and Higher Release Considerations* topic in the *WebFOCUS Release Guide* for information on expected configuration and functional changes.

Application Server and Web Application Overview

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

Web Servers and Application Servers

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

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

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

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

Web Applications

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

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

Running Web Applications

A web application runs inside an application server or servlet container. To run a web application, you deploy it to an application server, either as a WAR file or an EAR file. Theoretically, any web application could run in any application server on any platform, provided it is written to the Java Servlet API 3.0 specification. However, application servers vary and you should ensure your application server is supported with WebFOCUS. For more information on supported application servers, see [Web Server and Application Server Requirements](#) on page 33.

Accessing Web Applications

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

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

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

where:

`hostname:port`

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

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

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

Security and User IDs for WebFOCUS and ReportCaster

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

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

Managed Reporting and ReportCaster User IDs (Front End)

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

WebFOCUS Reporting Server User IDs (Back End)

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

Managed Reporting and ReportCaster IDs

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

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

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

WebFOCUS Reporting Server Security Providers

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

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

You can run the server with:

☐ **Security ON**

☐ **Security OFF**

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

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

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

`/install_directory/ibi/profiles/admin.cfg`

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

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

WebFOCUS Reporting Server User IDs

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

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

With security provider OPSYS, when you run a report in a WebFOCUS application, the WebFOCUS Client must pass an execution ID to the server. End users can be prompted to provide this execution ID, or the WebFOCUS Client can automatically send a predetermined execution ID. For more information on configuring how the WebFOCUS Client provides execution IDs to the server, see [WebFOCUS Post-Installation Tasks](#) on page 117.

- ❑ **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:

`/install_directory/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.

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



Chapter 2

WebFOCUS and ReportCaster Installation Requirements

This chapter lists requirements for installing and configuring WebFOCUS and ReportCaster on UNIX 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 8.2.01 and Higher Release Considerations* topic in the *WebFOCUS Release Guide* for information on expected configuration and functional changes.

In this chapter:

- ☐ [WebFOCUS and ReportCaster Installation Requirements](#)
 - ☐ [WebFOCUS Repository Setup](#)
-

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 8.0.x or 8.1.x. Release 8.2 Version 01 is a new feature release that supports new application development, includes incremental maintenance, and supports upgrade of content and applications from Release 8.0.x through 8.1.05M.

JVM and J2SE Support Information

WebFOCUS 8.2 requires Java Virtual Machine (Java VM) Version 7 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 7 or higher.

Note: For information regarding WebFOCUS release support for the different Oracle JDK versions that WebFOCUS and ReportCaster web applications are installed, see *WebFOCUS Support Statement for Java 2 Platform, Standard Edition (J2SE)* on the Customer Support Services site, https://techsupport.informationbuilders.com/tech/wbf/wbf_tmo_047_j2se.html.

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.

Item	Options or Requirements	Notes
Operating System	The WebFOCUS Client and ReportCaster are Java-based applications and supported on operating systems with Java 7 and higher environments.	<p>The following are the operating systems on which the WebFOCUS Client and ReportCaster are certified and on which the WebFOCUS Reporting Server is supported and certified.</p> <ul style="list-style-type: none"> <input type="checkbox"/> IBM AIX 7 pSeries <input type="checkbox"/> HP-UX 11.31 IA64 <input type="checkbox"/> Linux Kernel-2.6.32 and 3.10.0 x86 <input type="checkbox"/> Linux Kernel-2.6.32 pSeries <input type="checkbox"/> Linux Kernel-3.0.101 and higher <input type="checkbox"/> Oracle Solaris 10 and 11 Sparc <input type="checkbox"/> Oracle Solaris 10 and 11 x86
Shell	Korn Shell (ksh).	WebFOCUS is tested and documented using ksh as the default sign in shell. WebFOCUS scripts require Korn Shell (ksh) which is not installed with Linux by default.
Application Server/Servlet Container (WebFOCUS Client Machine)	Must meet both J2EE 6 web container and J2SE 6 specifications. This includes servlet API 3.0 specifications.	See Web Server and Application Server Requirements on page 33 for certified application servers or servlet containers.

Item	Options or Requirements	Notes
Web Server (WebFOCUS Client Machine)	Must support aliasing.	See Web Server and Application Server Requirements on page 33 for certified web servers. If your application server has a robust HTTP component, the web server is optional.
Java (64-bit)	Java 7 or higher.	
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 36.
Memory Requirements (For the WebFOCUS Reporting Server)	Base Memory: 2.5 MB Additional Memory per User: 2.5 MB	This is the minimum virtual memory required for operation of the WebFOCUS Reporting Server.

End User Machine Requirements

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

Desktop Requirements

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

Item	Options or Requirements	Notes
Web Browser	Microsoft Edge and Microsoft Internet Explorer 11 are certified with WebFOCUS 8.2. The latest versions of Mozilla Firefox® and Google Chrome™ are supported.	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

Item	Options or Requirements	Notes
Adobe Acrobat Reader	WebFOCUS 8.2 is certified with Adobe® Reader® X and Adobe Reader XI.	Acrobat is needed to view PDF reports generated by WebFOCUS.
Adobe Flash Player	WebFOCUS 8.2 is certified with Adobe® Flash® Player 10 and higher.	Required for the Active PDF report output format.

Disk Space Requirements

The following table shows approximate disk space requirements for WebFOCUS components.

Operating System	WebFOCUS Reporting Server		WebFOCUS Client and ReportCaster		
HP-UX 11.31	430 MB	210 MB	725 MB	350 MB	15 MB
IBM AIX 7	290 MB	140 MB	625 MB	310 MB	15 MB
Oracle Solaris 10 and 11	330 MB	160 MB	650 MB	320 MB	15 MB
Linux 2.6.32 and later	270 MB	130 MB	630 MB	310 MB	15 MB

Note: These numbers do not include space for applications.

Communication Requirements

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

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

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

Web Server and Application Server Requirements

The following are the most common web and application servers certified with WebFOCUS and ReportCaster:

- ☐ IBM WebSphere application server.
- ☐ Oracle WebLogic 12c.
- ☐ Apache Tomcat 8.0.36.

Additional web and application servers are supported that meet the specifications described in [JVM and J2SE Support Information](#) on page 29. For additional support information, contact Customer Support.

Note: Depending on the level of usage, you may need to increase your application server Java memory options. See [Java Memory Issues](#) on page 148 for more information.

Information on configuring web and application servers appears in [Configuring Web and Application Servers](#) on page 87. Some installation information for Tomcat is also provided. For installation information on other application servers, refer to your application server documentation.

User ID Requirements for the WebFOCUS Reporting Server

If the WebFOCUS Reporting Server is not on UNIX, see the documentation for its platform and skip to [User ID Requirements for the WebFOCUS Client](#) on page 34.

The operating system user ID you use when installing the server will own the files and is the default server administrator. Server administrators are users that have permission to start and configure the server. You can create a new user ID to install and administer the server, or you can use any ordinary (non-superuser) ID. However, you should not install the server as root. Throughout this documentation, the name *iadmin* is used to refer to the server administrator ID and group, but you may use any name for this ID.

When running the server with security provider OPSYS, end users and applications are authenticated through the operating system when they need access to the server. Therefore, in addition to the *iadmin* ID, operating system IDs must be available for end users and applications to access the server. Server data access agents will impersonate these IDs before performing any file access on their behalf. For security purposes, you should not allow end users and applications to use the *iadmin* ID. The *iadmin* ID should be available only to users who require administrative privileges to the server.

User ID Requirements for the WebFOCUS Client

The WebFOCUS Client user ID and file permission requirements depend on your security needs, web server configuration, application server configuration, and the preferences of the system administrator.

Be aware that most WebFOCUS Client processing is done through the web and application servers. In addition, an ID (WebFOCUS ID) should be available to browse the file system, edit text files, and execute utilities. Therefore, you must determine which IDs are used for the following processes:

- ☐ **Web Server ID.** ID that the web server uses when accessing static WebFOCUS files.
- ☐ **WebFOCUS Client ID.** ID for installing WebFOCUS. This ID should not be root and will be known as *wf_user*.
- ☐ **Application Server ID.** ID that the application server uses when running the WebFOCUS servlet. Often this is a single user ID.
- ☐ **WebFOCUS ID.** ID that you will use to install WebFOCUS, browse the file system, edit text files, and execute utilities. This may be the same ID as the WebFOCUS Client ID (*wf_user*).

The simplest configuration uses the same ID for all of the above processes. To implement this, ensure web and application server processes use the same ID and then install the WebFOCUS Client using this ID. This ID should not be root.

In other configurations, multiple user IDs can be used. If you do not install using the same ID as the web and application server processes, after installation, you must set file permissions to ensure that these processes have access to the WebFOCUS Client directories. The easiest way to implement this is to create a group to own the WebFOCUS Client directories and add user IDs to this group. Then, after installation, change directory permissions to 775.

Note: Communication between the WebFOCUS Client and the WebFOCUS Reporting Server is through TCP/IP, not the file system. However, if the WebFOCUS Client and the WebFOCUS Reporting Server are installed on the same machine as the same user, they may share the same APPROOT directory, `/install_directory/ibi/apps`. If this is the case, both the WebFOCUS Client and Reporting Server processes require access to this directory.

User ID Requirements for the ReportCaster Distribution Server

The ReportCaster Distribution Server communicates with other WebFOCUS components using TCP/IP. Therefore, if you install the Distribution Server separately, you can use the same ID as other WebFOCUS components or a different ID entirely. Do not install or run the Distribution Server as root.

WebFOCUS and ReportCaster Machine Java Requirements

Java 7 or higher is required on the machine or machines that run the WebFOCUS Client and ReportCaster Distribution Server. If you use Apache Tomcat 8, Java 7 or higher is required on the WebFOCUS Client machine. Installation of Java 7 on WebFOCUS Reporting Server machines is also required.

After the JDK is installed, the following directory must be in the PATH variable of any user IDs that run WebFOCUS components:

```
/java_home/bin
```

where:

```
java_home
```

Is the absolute path where the JDK is installed.

To test if Java is installed and in PATH, issue the following:

```
java -version
```

Information on the Java build should appear. For example:

```
java version "1.8.0_102"
Java(TM) SE Runtime Environment (build 1.8.0_102-b14)
Java HotSpot(TM) 64-Bit Server VM (build 25.45-b02, mixed mode)
```

To run the installation, the `jar` and `javac` commands must be in your search PATH. You can type the following to determine if they are found:

```
type jar
```

For IBM JDK, refer to your IBM documentation for additional information. The ReportCaster Distribution Server will use whichever Java VM is in its PATH variable. ReportCaster web components use the Java VM of the application server. Refer to your application server documentation if you need to update its Java VM.

Note: For most purposes, the terms JDK and SDK are synonymous. A JRE contains a subset of the JDK components.

ReportCaster Distribution Requirements

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

- ☐ Email distribution requires TCP/IP communication to an SMTP-enabled mail server that supports base-64 encoding for MIME type attachments.
- ☐ FTP distribution requires TCP/IP communication to an FTP server.
- ☐ Printer distribution requires a networked printer accessible to the ReportCaster Distribution Server.
- ☐ Managed Reporting distribution requires TCP/IP communications to the WebFOCUS Client machine.

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

WebFOCUS Repository Setup

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

Depending on the platform used, the WebFOCUS Repository can be stored in a Derby, Microsoft SQL Server, Oracle, Db2, MySQL®, or PostgreSQL database. For more information, see [Installing the WebFOCUS Client](#) on page 57.

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.

Note:

- ❑ The Db2 collation must be set to case sensitive for the WebFOCUS database. Case-insensitive collation is not supported.
- ❑ If you are using Db2 as the WebFOCUS Repository, the database needs to be created with a pagesize of 16K.

For more information on using a Db2 repository, see [Additional WebFOCUS Repository Topics and Tasks](#) on page 167.

- ❑ **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.
- ❑ **Microsoft SQL Server 2016, 2014, 2012, or 2008.** To use SQL Server, the appropriate SQL Server JDBC driver must be on the machine or machines that run the WebFOCUS Client and the ReportCaster Distribution Server. You can download and install the specific driver from the Microsoft website.

Note: The latest version of sqljdbc4.jar or sqljdbc41.jar is required. sqljdbc42.jar is not supported.

If you are unfamiliar with the JDBC driver and its requirements, information is provided in [Additional WebFOCUS Repository Topics and Tasks](#) on page 167.

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

SQL Server 2016, 2014, 2012, and 2008 have TCP/IP disabled, by default. Since ReportCaster requires TCP/IP, you must perform the following steps to enable TCP/IP in SQL Server 2016, 2014, 2012, and 2008:

1. Open the SQL Server Configuration Manager.
2. Under the SQL Server Network Configuration select *Protocols for MSSQLSERVER*.
A list of valid network protocols for the SQL Server engine is displayed in the right pane.
3. Select *TCP/IP* from the list of available protocols.
4. Right-click *TCP/IP* and select *Enable* from the context menu.

A message is displayed, which indicates that the MSSQLSERVER service must be restarted before the change is applied.

5. Restart the MSSQLSERVER service.

- ❑ **MySQL 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 177 contains information on installing and configuring the MySQL database server and this driver.

Note:

- ❑ The collation for MySQL must be set to case sensitive for the WebFOCUS database. Case-insensitive collation is not supported.
- ❑ The default character set and collation for MySQL is `latin1` and `latin1_swedish_ci`, so non-binary string comparisons are case insensitive, by default.
- ❑ For use with WebFOCUS, the collation needs to be set as `latin1_general_cs` or `latin1_swedish_cs`, depending on the character set required.
- ❑ WebFOCUS Release 8.2 does not support the MySQL `utf8` encoding character set.
- ❑ **Oracle™ 12c.** To use an Oracle repository, the Oracle JDBC™ Thin Client 9.0.1 driver must be on the machine or machines that run the WebFOCUS Client and the ReportCaster Distribution Server. This is typically named `ojdbc7.jar` depending on the Java release.

Note:

- ❑ The WebFOCUS repository requires character semantics. When creating a database for use with WebFOCUS, it needs to be done with CHAR semantics. This is applicable when using the following character sets:
 - ❑ UTF8
 - ❑ JA16SJISTILDE - Japanese
 - ❑ ZHS16CGB231280 - Simplified Chinese
 - ❑ ZHT16BIG5 - Traditional Chinese
 - ❑ KO16KSC5601 - Korean

This is not needed when using the following character sets:

- ❑ Western European: `WE8ISO8859P15` or `WE8MSWIN1252`

- ☐ Eastern European: WE8ISO8859P2 or EE8MSWIN1250
- ☐ Oracle database blocks (db_block_size) require 8K or higher.
- ☐ The maximum number of open cursors (open_cursors) must be set to 500 or higher when all tables are created and inserted.
- ☐ Tablespace requirements depend on customer usage.
- ☐ WebFOCUS requires case-sensitive collation. For Oracle, string comparisons are case sensitive, by default.
- ☐ Comparison and sort can be configured through the sort system parameters NLS_COMP and NLS_SORT.
- ☐ The RDBMS user account privileges used by WebFOCUS need to have the ability to change a schema that belongs to that account. The privileges must also be allowed to create tables, modify tables, execute queries, and insert and delete records.
- ☐ **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 167.

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 167.

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 167.

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.
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.

You can optionally create tablespaces for the repository. For sizing guidelines, see [Sizing Guidelines](#) on page 175.

Note: Database collation must be case sensitive for WebFOCUS. The installation program and the database load utilities check for the database collation. If a case-insensitive database is detected, a message displays and the database creation does not take place. You can do either of the following:

- ☐ Continue with the installation and correct the database collation post-install. Then, run the WFRPosUtilCMDLine.
- ☐ Exit the installation, correct the database collation, and rerun the installation.



Chapter 3

Installing the WebFOCUS Reporting Server

This chapter explains how to install the WebFOCUS Reporting Server in a UNIX environment. It is a simplified, WebFOCUS-specific version of the *Server for UNIX* chapter in the *Server Installation* manual.

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

After the WebFOCUS Reporting Server is installed, proceed to [Installing the WebFOCUS Client](#) on page 57.

The following abbreviation is used for the path to the ibi directory where you install WebFOCUS components on your system:

[*/install_directory/*](#)

Substitute the actual directory on your system when reviewing procedures and examples in this document.

In this chapter:

- ☐ [Installing the WebFOCUS Reporting Server](#)
 - ☐ [WebFOCUS Reporting Server Verification and Configuration](#)
 - ☐ [Silent Installation of the WebFOCUS Reporting Server](#)
-

Installing the WebFOCUS Reporting Server

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

Preliminary Installation Instructions

Before running the installation utility, do the following:

1. Review the installation requirements in [WebFOCUS and ReportCaster Installation Requirements](#) on page 29.

2. If none exist, create a user ID and a group for the WebFOCUS Reporting Server. The name *iadmin* is used in server documentation to refer to this user and group. For user ID requirements, see [WebFOCUS and ReportCaster Installation Requirements](#) on page 29.
3. Ensure that four consecutive TCP/IP ports are available for the server. The port numbers should be unique and greater than 3000. By default, WebFOCUS uses ports 8120 through 8123. You can use the netstat command to check whether a port is in use. For example:

```
netstat -a | grep 8120
```

If you receive no response, then port 8120 is not in use by a running process. Check for all four ports. If you receive a response like the following, the port is in use by another process:

```
tcp          0      0  *:8120          :::*             LISTEN
```

Note: When installing multiple instances of the server, be sure each instance has unique ports.

4. If a Java JDK is installed on your system, set a \$JDK_HOME environment variable to its installation directory. You can set this in the .profile of the user ID that will start and run the WebFOCUS Reporting Server. For example:

```
export JDK_HOME=/usr/j2sdk1.8_102
```

The server uses this variable to find certain native files in Java JRE directories. It needs these file to run its JSCOM3 listener. The server uses JSCOM3 when it creates graphics, accesses data sources through JDBC, or launches other Java processes. Not all WebFOCUS processing requires JSCOM3. However, it is a good idea to enable it. If Java JDK 7 or higher is not installed on your system, installing one is recommended.

Server Installation Steps

The server can be installed in two ways:

- ☐ **Text Installation.** The default text-based installation prompts you for installation parameters. This is explained below.
- ☐ **Silent Installation.** In a silent installation, you launch the installation and specify a text file. The text file contains the installation parameters, so no prompts appear. Silent installations are explained in [Silent Installation of the WebFOCUS Reporting Server](#) on page 54, but it is a good idea to run a text installation the first time you install the server.

Procedure: How to Install the WebFOCUS Reporting Server

1. Sign in as the user ID under which you wish to install and run the server. This should not be root.

2. Ensure that you have the installation files:

If you receive the installation through a download, place the download in a temporary directory on the UNIX machine. If you receive a TAR file, untar it using:

```
tar xvf filename.tar
```

Warning: Do not install or untar in a directory that has spaces in its name.

3. Ensure that the installation files are the correct case and executable by listing them. For example:

```
ls -l
```

All files should be lowercase. The `isetup` and `inu.out` files should be executable. For example:

```
-r-xr-xr-x    1 wf77      wf77      1402297 Jan 22 10:47 inu.out
-r-xr-xr-x    1 wf77      wf77    166574080 Jan 22 10:47 iserver.tar
-r-xr-xr-x    1 wf77      wf77     505818 Jan 22 10:47 isetup
-r-xr-xr-x    1 wf77      wf77       268 Jan 22 10:47 version.cfg
```

Note: If you are not installing from CD, you can make the files executable by entering:

```
chmod 755 isetup inu.out
```

4. Ensure that you are using the correct user ID and not root. To do this, type the following:

```
whoami
```

or

```
who am i
```

Do not install the server as root.

5. Set the default protection mask so files are created with permissions 755. For example:

```
umask 022
```

6. Execute `isetup` while you are in a directory where you have write access, but not the same directory as the installation files. If you receive the server installation files on CD, call them from your home directory. For example:

```
/cdrom/isetup
```

where:

```
cdrom
```

Is the mount point of your CD.

The following prompt displays:

Select an option:

1. Install and Configure
2. Add Additional Configuration Instance
3. Refresh Installation (Reinstall, Keep Configurations)
4. Install Debuggables to the Installation Directory

7. Type *1* and press Enter.

The License Key prompt displays:

Enter your License Key
(Format 999-999-9999-99) :

8. Type your 10-digit or 12-digit license key and press Enter.

The License is printed on the packing slip, which is included in your WebFOCUS shipment.
Be sure to type it using the format:

nnn-nnn-nnnn-nn

or

nnn-nnn-nnnn

The license information is displayed, and you are prompted for the `iserver.tar` file.

Please enter the full path name of the media for the product.

9. If the default is correct, press Enter. Otherwise, type the full path to the `iserver.tar` file from which you will install the WebFOCUS Reporting Server and press Enter. If you are installing from the CD, this is:

/cdrom/iserver.tar

The Server Admin Password prompt displays:

Enter the Server Administrator (*current_account*) Password:

10. Type the password for the server administrator. By default, the initial server administrator is the user running the installation utility. This password is stored encrypted by the server and used for PTH security.

The default settings display:

```

Please review the default settings.
EDAHOME = /install_directory/ibi/srv82/home
EDACONF = /install_directory/ibi/srv82/wfs
EDAPRFU = /install_directory/ibi/profiles
APPROOT = /install_directory/ibi/apps
HTTP_BASE_PORT = 8121
TCP_BASE_PORT = 8120
If you are satisfied with the default settings you may proceed to
final confirmation else you will be prompted for individual values.
Proceed with defaults? (Y/N Default=Y)      :

```

11. Type Y or N accordingly.

If the settings are correct and you reply Y, the installation begins. When prompted to start the server, select N and proceed to [How to Enable Security](#) on page 47.

If you type N, the EDAHOME prompt displays:

```

Supply the location on the disk in which to install the software.
This location is also known as EDAHOME.
(Default=/install_directory/ibi/srv82/home)
Please supply the location or <Enter>:

```

12. To accept the default location, press Enter. To change the default, type the absolute path and press Enter.

The EDACONF prompt displays:

```

Supply the location on the disk in which to configure the software.
This location is also known as EDACONF.
(Default=/install_directory/ibi/srv82/wfs)
Please supply the location or <Enter>:

```

13. To accept the default location, press Enter. To change the default, type the absolute path and press Enter.

The EDAPRFU prompt displays:

```

Supply the location on disk where the product will look for user
profiles and the admin.cfg file. This location is also known as
EDAPRFU.
(Default=/install_directory/ibi/profiles)
Please supply location or <Enter>:

```

14. To accept the default location, press Enter. To change the default, type the absolute path and press Enter.

The APPROOT prompt displays:

```

Supply the location on the disk where the product will look for
applications. This location is also known as APPROOT.
(Default=/install_directory/ibi/apps)
Please supply the location or <Enter>:

```

15. To accept the default location, press Enter. To change the default, type the absolute path and press Enter.

The Demo Files prompt displays:

```
Would you like to install New Century Demo files
(Y/N Default=Y)? :
```

16. To accept the default and install the New Century Demo files, press Enter.

The HTTP Listener Port prompt displays:

```
Enter HTTP Listener Port (HTTP_BASE_PORT). This is the first of three
consecutive port numbers that are open and dedicated to the HTTP
Listener
and other IP based services.
(Default=8121) :
```

17. To accept the default, press Enter. To change the default, type the second of the four port numbers that the server uses and press Enter.

The TCP Listener Port prompt displays:

```
Enter TCP Listener Port (TCP_BASE_PORT). The TCP Listener Port
number must be outside the selected HTTP range (8121 - 8123).
(Default=8120) :
```

18. To accept the default, press Enter. To change the default, type a port number and press Enter. It is recommended that the TCP port be one less than the HTTP port.

The SMTP Mail Server (Optional) prompt displays:

```
Enter SMTP Mail Server (Optional) :
```

Type the name of the SMTP Mail Server. This is optional.

A summary screen displays your installation settings and you are prompted to confirm them:

```
Please confirm these values with one of the following responses ...
Y = Accept and Proceed
N = Start Over
Q = Quit
```

19. Type Y and press Enter to install the server.

When the utility completes, the following displays:

```
ISETUP: Configuration Step completed
-----
Would you like to start the Server Workspace (Y/N Default=Y)?:
```

20. Type N and press Enter.

If you receive the following error, you can ignore it:

```
inu: There was an error in opening the file
/install_directory/ibi/srv82/home/etc/version.cfg
```

Procedure: How to Enable Security

To enable the server to start with security OPSYS, you must perform the following procedure. When the server runs with security OPSYS, users are authenticated against the operating system. After performing this procedure, you can still run the server with security OFF or PTH, but security OPSYS is not available until you perform these steps.

For a description of security levels, see [Security and User IDs for WebFOCUS and ReportCaster](#) on page 26.

1. Sign in as root.
2. Change your current directory to the EDASHOME/bin directory. The default location for this directory is the following:

```
/install_directory/ibi/srv82/home/bin
```

3. Change file permissions by typing the following commands and pressing Enter.

```
chown root tscom300.out
chmod 4555 tscom300.out
```

4. Verify your changes by issuing the following command:

```
ls -l tscom300.out
```

The output should be similar to:

```
-r-sr-xr-x  1 root  iadmin  750687 Jan 16 17:05 tscom300.out
```

Note the permissions and ownerships. The size may vary.

5. Sign out as root.

WebFOCUS Reporting Server Verification and Configuration

After installing the WebFOCUS Reporting Server, you should verify that it runs properly by starting the server and viewing the Web Console as explained below. You can then use the Web Console to configure adapters.

Starting, Configuring, Testing, and Stopping 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 [Security and User IDs for WebFOCUS and ReportCaster](#) on page 26.

Procedure: How to Start the WebFOCUS Reporting Server

1. Sign in with the ID you used to install the server. Initially, this is the only user ID that can start the server. Do *not* start the server as root.
2. Change your current directory to the EDACONF/bin directory. The default location for this directory is the following:

```
/install_directory/ibi/srv82/wfs/bin
```

3. Specify which security level to use by typing one of the following:

```
export EDAEXTSEC=OPSYS
export EDAEXTSEC=PTH
export EDAEXTSEC=OFF
```

Note:

- ❑ The server can only start with security OPSYS if you change ownership and permissions for tscom300.out, as explained in [How to Enable Security](#) on page 47.
- ❑ If you change ownership and permissions for tscom300.out, the server starts with security OPSYS by default. Otherwise, the server starts with security OFF by default.
- ❑ When the server runs with security OPSYS, log files and directories are created that are not compatible when running with security OFF or PTH. You must clear out these files or the server cannot start with security OFF or PTH. Use the following to clear files:

```
./edastart -cleardir
```

4. Start the WebFOCUS Reporting Server by typing the following command and pressing Enter:

```
./edastart -start
```

The Workspace Manager starts. The following is an example of the message displayed:

```
Starting Workspace Manager in /home/iadmin/ibi/srv82/wfs
Logging startup progress and errors in
/home/iadmin/ibi/srv82/wfs/edaprint.log
```

5. You can further verify that the server is running by typing the following:

```
./edastart -show
```


For a list of options for the edastart command, type the following:

```
./edastart -?
```

Note: If you see an error related to JSCOM3, you can troubleshoot this in [How to Verify or Enable the JSCOM3 Listener](#) on page 50.

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

The Web Console, sometimes referred to as the Server Console, provides an interface for configuring, monitoring, and testing the WebFOCUS Reporting Server. To access the Web Console and test the server, do the following:

1. Start the WebFOCUS Reporting Server if it is not started.
2. Using Internet Explorer, go to the following URL:

```
http://hostname:port
```

where:

hostname

Is the host name or IP address of the machine running the WebFOCUS Reporting Server.

port

Is the HTTP port you specified during the installation. The default is 8121. This is the port of the LST_HTTP node in `/install_directory/ibi/srv82/wfs/etc/odin.cfg`.

3. If you are running with security OPSYS, sign in using the user ID you used when installing the server.

The Web Console home page displays.

4. Expand any of the folders in the Application Directories tree, right-click a procedure or a metadata file, and then select an action from the menu.

***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:

1. Sign in to the Reporting Server Web Console.
2. If you have a license for Active Technologies, you must provide the Active Technologies license code. Click *Workspace* on the main menu, select *License* on the ribbon, and then type 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. To configure adapters, on the left of the Web Console Help, expand *Adapters*.
7. 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.

1. Sign in to the Reporting Server Web Console.
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.

If the *Start* option appears, then JSCOM3 did not start. JSCOM3 cannot start unless it finds certain native files in JRE directories. The server can find these file automatically if you set a \$JAVA_HOME environment variable as explained in [Preliminary Installation Instructions](#) on page 41. If you set \$JAVA_HOME in your .profile, sign out, sign back in, and restart the WebFOCUS Reporting Server. If JSCOM3 still does not start, refer to the *Server Installation* manual to manually to set your shared library 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.

The screenshot shows the 'Java Services Configuration' dialog box. The 'JVM Settings' section is expanded, showing 'Non-standard JVM options:' and 'other properties:'. The 'Non-standard JVM options:' section includes fields for 'Initial Java Heap Size' (16MB), 'Maximum Java Heap Size' (24MB), 'Java Thread Stack Size' (Kb), and 'JVM_OPTIONS'. The 'other properties:' section includes a field for 'JVM_PROPERTIES'. Below the 'JVM_OPTIONS' field, there is an example: '-verbose:jni'. Below the 'JVM_PROPERTIES' field, there is an example: 'user.home=/home/username'. At the bottom of the dialog, there are buttons for 'Save and Restart Java Services' and 'Cancel'.

- d. In the *JVM_Options* field, enter:
`-Djava.version=1.7`
 - 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. Click *Properties*.
A page appears where you can configure the JSCOM3 listener. You can click through the tabs to see additional options.
 6. Choose whether to use headless or set DISPLAY.
To generate graphics, JSCOM3 must either use the headless option or a DISPLAY variable.
- ☐ The headless option does not support GIF graphs or the older WebFOCUS GRAPH32 engine, but allows you to run without an X Windows server. The headless option is enabled by default on the *JVM Settings* tab.
 - ☐ The DISPLAY variable supports all WebFOCUS graph options, but requires an X Windows server. To use DISPLAY, first turn off the headless option by selecting the *JVM Settings* tab, deselecting *Set java.awt.headless property*, and clicking *Save and Restart Special Service*. Then, stop the WebFOCUS Reporting Server and set a DISPLAY environment variable to an X Windows Server. You can set the variable in your .profile or in the edastart script. For example:

```
export DISPLAY=XWindowsHost:0.0
```

```
export TERM=xterm
```

where:

XWindowsHost

Is the host name needed to access the X Windows Server. The server must also accept the connection, which may require using the xhost command.

Reference: Stopping the WebFOCUS Reporting Server

You can stop the WebFOCUS Reporting Server using the Web Console or as follows:

1. Change your current directory to the EDACONF/bin directory. The default location for this directory is the following:

```
/install_directory/ibi/srv82/wfs/bin
```

2. Stop the WebFOCUS Reporting Server by typing the following command and pressing Enter:

```
./edastart -stop
```

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.

srv82

Contains the server.

Under srv82 are the EDAHOME (home) and EDACONF (wfs) subdirectories:

- ❑ EDAHOME is installed in:

```
/install_directory/ibi/srv82/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.

`tst`

Contains internal files.

❑ EDACONF is installed in:

`/install_directory/ibi/srv82/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.

`edatemp`

Contains temporary files and is not created until you start the server.

`etc`

Contains configuration files.

`share`

Contains space for internal processing in some environments.

`tst`

Contains test files generated during the configuration process.

`user`

Contains user-generated temporary files.

Silent Installation of the WebFOCUS Reporting Server

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

Running a Silent Installation

To install in silent mode, you must create a file containing the installation parameters, which will be used to run the installation. Then launch the installation to use that file.

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 -m /PATH_TO/iserver.tar
-license nnn-nnn-nnnn[-nn]
-edahome /install_directory/ibi/srv82/home
-edaconf /install_directory/ibi/srv82/wfs
-port port
-host hostname
-approot /install_directory/ibi/apps
-nostart
-iadmin userID
-pass password
-ibinccen
```

where:

Syntax	Description
<i>PATH_TO</i>	Is the full path to the iserver.tar file.
<i>nnn-<i>nnn</i>-nnnn[-nn]</i>	Is the 10-digit or 12-digit license.
<i>install_directory</i>	Is the directory where you wish to install the server.
<i>port</i>	Is the base TCP port for the server.
<i>hostname</i>	Is the host name of the server.
<i>userID</i>	Is the operating system user ID you use when installing the server.
<i>password</i>	Is the password for the user ID you are using.
<i>-ibinccen</i>	Is the demo application. This is optional and is the English version.

You can see additional installation options by executing the installation as follows:

```
isetup ?
```

Procedure: How to Launch a Silent Installation

You can launch a silent installation by calling the isetup installation program, as follows:

```
isetup -opt /PATH_TO_/srv.options[-  
DINSTALL_LOG_DESTINATION="log_destination"]  
[-DINSTALL_LOG_NAMES="log_name"]
```

where:

/PATH_TO_/srv.options

Is the full path to the file containing your installation options.

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.

Installing the WebFOCUS Client

This section describes how to install the WebFOCUS Client on UNIX.

In this chapter:

- ❑ [Installing the WebFOCUS Reporting Server](#)
 - ❑ [Installing the WebFOCUS Cluster Manager](#)
 - ❑ [Installing the WebFOCUS Client](#)
 - ❑ [Upgrading From an Earlier 8.2.x Release to Release 8.2 Version 01M](#)
 - ❑ [Upgrading Content From Release 8.1.x or 8.0.x to Release 8.2 Version 01M](#)
 - ❑ [Creating the WebFOCUS UOA Repository](#)
 - ❑ [Configuring Web and Application Servers](#)
 - ❑ [WebFOCUS Client and ReportCaster Directory Structures](#)
 - ❑ [Uninstalling the WebFOCUS Client](#)
-

Installing the WebFOCUS Reporting Server

Follow the documented installation instructions, as detailed in [Installing the WebFOCUS Reporting Server](#) on page 41.

Installing the WebFOCUS Cluster Manager

Cluster Manager (CLM) does not have a separate installation. Instead, the Reporting Server installation is used to install a second instance of the Reporting Server, which is then enabled for CLM. Follow the documented installation instructions in the *Server Installation* manual to install both the Reporting Server and CLM.

Installing the WebFOCUS Client

This following procedure provides the steps for installing the WebFOCUS Client on UNIX.

Note: Before beginning the installation, verify that all prerequisites are met. In particular, this installation requires knowledge of the Primary ReportCaster Distribution Server machine name and port number.

Procedure: How to Install the WebFOCUS Client (Console Installation Mode)

This section describes how to install WebFOCUS Client on UNIX using the console installation mode. For demonstration purposes, a custom installation is performed using an Oracle 12c database for the repository. The web and application server being used is Apache Tomcat 8.0.36, which is packaged with the installation.

Note: Before you run the WebFOCUS Client installation, set the ulimit on the user ID that is going to run the installation program as follows:

```
ulimit=8192
```

1. Download the WebFOCUS 8.2 installation file for UNIX.
2. Change the permissions of the installer file (installWebFOCUS8201.bin) to read and execute with the following command:

```
chmod 755 installWebFOCUS8201.bin
```

3. Execute the installer file with the following command:

```
./installWebFOCUS8201.bin -i console
```

The Welcome to WebFOCUS 8.2 message displays.

4. Press Enter to continue.

The WebFOCUS License Agreement displays in sections.

5. Press Enter to move through the license information.
6. At the DO YOU ACCEPT THE TERMS OF THIS LICENSE AGREEMENT prompt, type Y and press Enter.

The Choose Install Type prompt is displayed.

7. Type one of the following:

1 to update an existing Release 8.2.x installation available on your machine. After entering the installation location, continue to step 24.

2 for a full installation and press Enter. Continue to step 8.

8. At the WebFOCUS License Code prompt, type your license code and press Enter to continue.
9. At the WebFOCUS Site Code prompt, type your site code and press Enter to continue.

The Choose Install Set prompt is displayed.

10. Type 2 for a custom installation and press Enter.

The Choose Destination Locations prompt is displayed.

11. Press Enter to accept the default destination directory, or type a custom destination directory and then press Enter.

Note: Do not include spaces in the path.

The Select Components to Install prompt is displayed.

12. To install a component, type Y or press enter. To not install a component, type N.

- a. Type Y to install WebFOCUS or N to cancel.

The destination directory prompt is displayed.

- b. Press Enter to accept the default destination, or type a destination path and press Enter.

Note: The directory path cannot contain spaces.

The mail server host prompt is displayed.

- c. Type the mail server host name and press Enter.

The Install ReportCaster Distribution Server prompt is displayed.

- d. Type Y to install the ReportCaster Distribution Server the same machine, or N not to install it.

Note: If you plan to install the Distribution Server on a different machine, type N.

The Install and Configure Tomcat prompt is displayed.

- e. Type Y to install Tomcat or N to skip it. If you install Tomcat, you will be prompted for a destination directory. Press Enter to accept the default destination, or type a destination path and press Enter.

The Install Derby prompt is displayed.

13. Type Y to install Derby or N to configure an existing database.

A list of supported databases is displayed.

The database choices are:

- ☐ 1 - Apache Derby
- ☐ 2 - DB2
- ☐ 3 - MSSQL 2005
- ☐ 4 - MSSQL 2008

- ☐ 5 - MSSQL 2012
 - ☐ 6 - MYSQL
 - ☐ 7 - Oracle
 - ☐ 8 - Other DB
- a. Type the option number for your database (for example, 8 for Oracle).
The prompt to create a WebFOCUS Repository is displayed.
 - b. Type *N* and press Enter.
14. For Oracle, type values for the following parameters and press Enter, or press Enter to accept the default.
- ☐ **DB Server Node.** Type the name of the machine where the Oracle Database Server is running.
 - ☐ **Port.** The default is 1521. Type the port number on which the Oracle Database Server is listening on.
 - ☐ **User Id.** This is used to communicate to the UOA repository.
 - ☐ **Password.** Type the password for the user ID.
 - ☐ **ORASID.** Type the value for the Oracle SID.
 - ☐ **JDBC Driver.** Accept the default value, oracle.jdbc.OracleDriver.
 - ☐ **JDBC Path.** Type the fully qualified path to the Oracle JDBC driver, including the jar file name.
15. At the double colon prompt (::), press Enter to continue.
- The Advanced Configuration prompts display.
16. At the WebFOCUS Application Context prompt, type a context root and press Enter, or press Enter to accept the default (ibi_apps).
17. At the WebFOCUS Help Context prompt, type a help context root and press Enter, or press Enter to accept the default (ibi_help).
18. At the WebFOCUS Reporting Server Host prompt, type a host name and press Enter, or press Enter to accept the default.
19. At the WebFOCUS Reporting Server Port prompt, type a server port and press Enter, or press Enter to accept the default (8120).
20. At the Distribution Server Host prompt, type a host name and press Enter, or press Enter to accept the default.

21. At the Distribution Server Port prompt, type a server port and press Enter, or press Enter to accept the default (8200).

22. Start Distribution Server (Y/N): N

This prompt will appear for license keys with ReportCaster, and if you chose to install ReportCaster on this machine.

23. Tomcat HTTP Port: (DEFAULT: 8080):

Tomcat Server Shutdown Port: (DEFAULT: 8009):

Tomcat AJP Port: (DEFAULT: 8005):

The Tomcat prompts will appear if you choose to install and configure Tomcat during installation.

The Pre-Installation Summary prompt for the Distribution Server, Reporting Server, Database, Tomcat, Context Roots and Alias, and Mail Host is displayed, as well as Disk Space information.

Note: If any of the Advanced Configuration parameters are incorrect, type *BACK* to reenter values for the settings.

24. Press Enter to complete the installation.

The Installation Complete prompt is displayed once the installation has finished.

25. Press Enter to exit from the installer.

Procedure: How to Install the Typical Version of the WebFOCUS Client (GUI Installation Mode)

This section describes how to perform a typical installation for the WebFOCUS Client on UNIX using the GUI installation mode.

To use the GUI installation, ensure that the installer has access to an X Windows Server (through the DISPLAY variable). If an X Windows Server is available, you must set a DISPLAY environment variable before you start the installer. For example:

```
DISPLAY=xserver_host:0.0
export DISPLAY
TERM=xterm
export TERM
```

where:

xserver_host

Is the host name or IP Address of a machine that is running an X Server.

1. Download and launch the WebFOCUS 8.2 installation file for UNIX, then double-click the file.

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

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

3. Click *Next*.

The License Agreement dialog box opens.

4. Read the license agreement, select the *I accept the terms of the License Agreement* radio button, and click *Next*.

The License Code dialog box opens.

5. Type the license code and site code that were delivered with your WebFOCUS software in the corresponding fields, and click *Next*.

The Choose Install Set dialog box opens.

6. Select *Typical* and click *Next*.

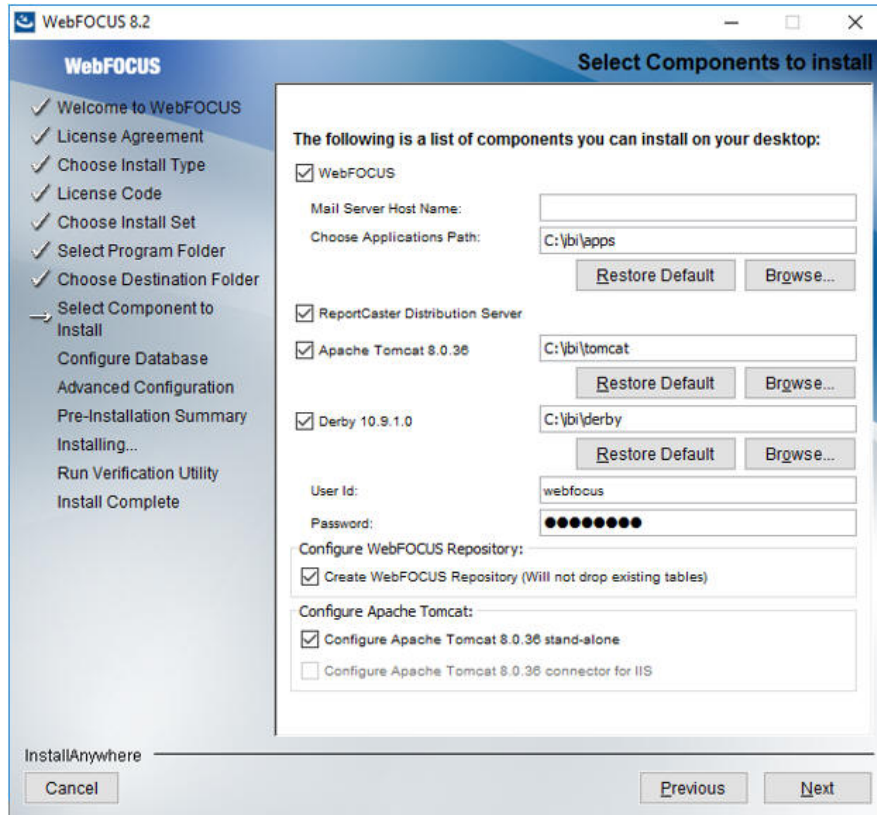
The Choose Destination Locations dialog box opens.

7. Type a destination folder for the installation or accept the default value.

Note: Do not include any spaces in the path. In addition, provide a path to a unique destination folder. If you provide a path to an existing directory, WebFOCUS will prompt you to delete the existing directory or choose a different target folder.

8. Click *Next*.

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



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

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

- ☐ If you clear the options to install and configure Tomcat, an application server needs to be configured post-installation.
- ☐ If you clear the option to install Derby, or Derby is preinstalled, continue to the next substep.

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

Note:

- ☐ If you want to use an existing WebFOCUS repository that already has tables defined, clear the *Create WebFOCUS Repository* option. After the installation is completed, you must drop and recreate the existing tables in the repository if you plan on working with a new WebFOCUS repository. Alternatively, you can run the `WFRPosUtilCMDLine.sh` file with the `CREATE_INSERT` mode to update your database and create the required tables and columns.
 - ☐ If you select the *Create WebFOCUS Repository* option, the installation checks the database to see if it contains existing tables. If it contains tables, the *Create WebFOCUS Repository* option will not be performed and a message displays. In this case, you can provide information for a new empty database, create the tables using WebFOCUS utilities post-installation, or in the case that you are using an 8.1.x or 8.0.x database, follow the post-installation steps required to update the database to an 8.2.01 level. For more information, see [Upgrading Content From Release 8.1.x or 8.0.x to Release 8.2 Version 01M](#) on page 77.
 - ☐ If you want to use a web or application server other than Apache Tomcat, then uncheck the *Configure Apache Tomcat* option. The *Configure WebFOCUS Client* area will appear and you must enter the port number that is currently used by your web server in the corresponding field.
- d. Click *Next* to accept the remaining default installation components and configuration settings.

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

WebFOCUS

- ✓ Welcome to WebFOCUS
- ✓ License Agreement
- ✓ Choose Install Type
- ✓ License Code
- ✓ Choose Install Set
- ✓ Select Program Folder
- ✓ Choose Destination Folder
- ✓ Select Component to Install
- **Configure Database**
 - Advanced Configuration
 - Pre-Installation Summary
 - Installing...
 - Run Verification Utility
 - Install Complete

Database Configuration for: Apache Derby

DataBase Name: WebFOCUS82

DB Server Node: 127.0.0.1

Port: 1528

User Id: webfocus

Password: ●●●●●●●●

JDBC Driver: org.apache.derby.jdbc.ClientDriver

JDBC Path: C:\ibi\derby\lib\derbyclient.jar

Browse...

InstallAnywhere

Cancel Previous Next

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* to continue the installation.

The Pre-Installation Summary window opens.

11. 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 8.2 dialog box opens. As WebFOCUS is being installed, the Installing WebFOCUS 8.2 dialog box informs you about the installation tasks that are being performed.

The Install Complete window opens, listing the installation directory.

12. Click *Done* to exit the installation.

Procedure: How to Install the Custom Version of the WebFOCUS Client (GUI Installation Mode)

This section describes how to perform a custom installation for the WebFOCUS Client on UNIX using the GUI installation mode.

To use the GUI installation, ensure that the installer has access to an X Windows Server (through the DISPLAY variable). If an X Windows Server is available, you must set a DISPLAY environment variable before you start the installer. For example:

```
DISPLAY=xserver_host:0.0
export DISPLAY
TERM=xterm
export TERM
```

where:

xserver_host

Is the host name or IP Address of a machine that is running an X Server.

1. Download and launch the WebFOCUS 8.2 installation file for UNIX, then double-click the file.
2. Choose the appropriate language from the drop-down list and click *OK*.

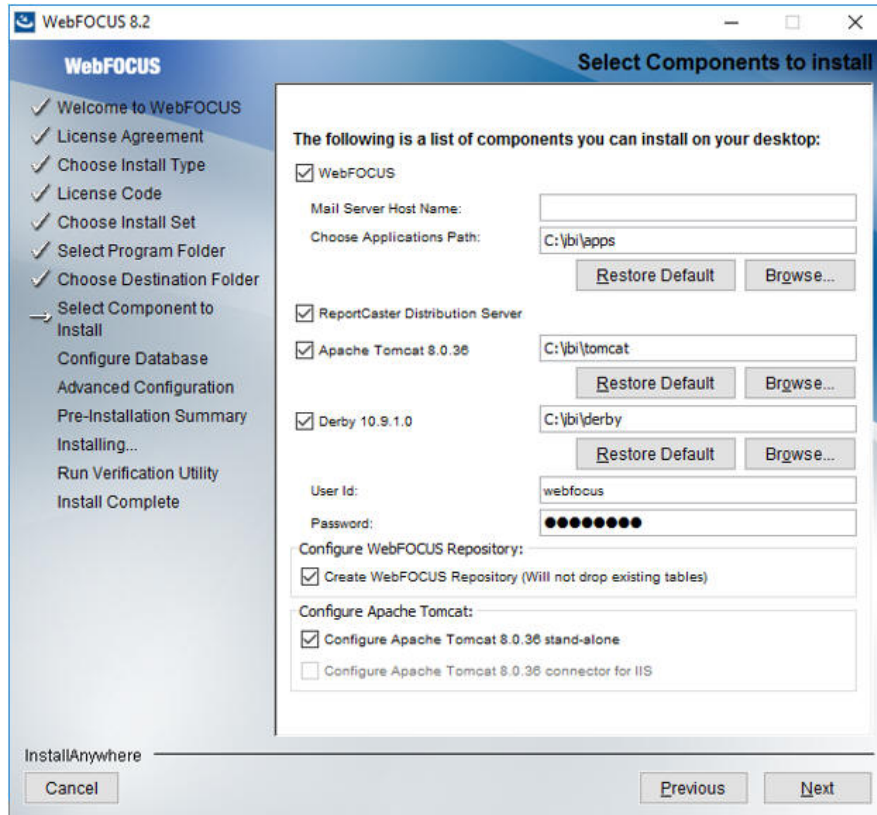
The Welcome to WebFOCUS 8.2 window opens, recommending that you quit all programs before continuing with the installation.

3. Click *Next*.

The License Agreement dialog box opens.

4. Read the license agreement, select the *I accept the terms of the License Agreement* radio button, and click *Next*.
The License Code dialog box opens.
5. Type your WebFOCUS license code and site code in the corresponding fields, and click *Next*.
The Choose Install Set dialog box opens.
6. Select *Custom* and click *Next*.
The Select Program Folder dialog box opens.
7. Type a destination folder for the installation or accept the default value.
Note: Do not include any spaces in the path. In addition, provide a path to a unique destination folder. If you provide a path to an existing directory, WebFOCUS will prompt you to delete the existing directory or choose a different target folder.
8. Click *Next*.

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



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

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

- ☐ If you clear the options to install and configure Tomcat, an application server needs to be configured post-installation.
- ☐ If you clear the option to install Derby, or Derby is preinstalled, continue to the next substep.

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

Note:

- ☐ If you want to use an existing WebFOCUS repository that already has tables defined, clear the *Create WebFOCUS Repository* option. After the installation is completed, you must drop and recreate the existing tables in the repository if you plan on working with a new WebFOCUS repository. Alternatively, you can run the `WFRPosUtilCMDLine.sh` file with the `CREATE_INSERT` mode to update your database and create the required tables and columns.
 - ☐ If you select the *Create WebFOCUS Repository* option, the installation checks the database to see if it contains existing tables. If it contains tables, the *Create WebFOCUS Repository* option will not be performed and a message displays. In this case, you can provide information for a new empty database, create the tables using WebFOCUS utilities post-installation, or in the case that you are using an 8.1.x or 8.0.x database, follow the post-installation steps required to update the database to an 8.2.01 level. For more information, see [Upgrading Content From Release 8.1.x or 8.0.x to Release 8.2 Version 01M](#) on page 77.
 - ☐ If you want to use a web or application server other than Apache Tomcat, then uncheck the *Configure Apache Tomcat* option. The *Configure WebFOCUS Client* area will appear and you must enter the port number that is currently used by your web server in the corresponding field.
- d. Click *Next* to accept the remaining default installation components and configuration settings.

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

The screenshot shows the 'Database Configuration for: Apache Derby' dialog box. On the left is a sidebar with the 'WebFOCUS' logo and a list of installation steps. The 'Configure Database' step is highlighted with a right-pointing arrow. The main area contains several text input fields for configuration: 'DataBase Name' (WebFOCUS82), 'DB Server Node' (127.0.0.1), 'Port' (1528), 'User Id' (webfocus), 'Password' (masked with dots), 'JDBC Driver' (org.apache.derby.jdbc.ClientDriver), and 'JDBC Path' (C:\bi\derby\lib\derbyclient.jar). A 'Browse...' button is located below the JDBC Path field. At the bottom, there is a 'Cancel' button on the left and 'Previous' and 'Next' buttons on the right. The 'InstallAnywhere' logo is visible in the bottom left corner of the dialog frame.

WebFOCUS

- ✓ Welcome to WebFOCUS
- ✓ License Agreement
- ✓ Choose Install Type
- ✓ License Code
- ✓ Choose Install Set
- ✓ Select Program Folder
- ✓ Choose Destination Folder
- ✓ Select Component to Install
- **Configure Database**
- Advanced Configuration
- Pre-Installation Summary
- Installing...
- Run Verification Utility
- Install Complete

Database Configuration for: Apache Derby

DataBase Name: WebFOCUS82

DB Server Node: 127.0.0.1

Port: 1528

User Id: webfocus

Password: ●●●●●●●●

JDBC Driver: org.apache.derby.jdbc.ClientDriver

JDBC Path: C:\bi\derby\lib\derbyclient.jar

Browse...

InstallAnywhere

Cancel Previous Next

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.

WebFOCUS **Advanced Configuration**

- ✓ Welcome to WebFOCUS
- ✓ License Agreement
- ✓ Choose Install Type
- ✓ License Code
- ✓ Choose Install Set
- ✓ Select Program Folder
- ✓ Choose Destination Folder
- ✓ Select Component to Install
- ✓ Configure Database
- **Advanced Configuration**
- Pre-Installation Summary
- Installing...
- Run Verification Utility
- Install Complete

Web/Application Server Alias and Context Root Settings:

WebFOCUS Application Context:

WebFOCUS Help Context:

WebFOCUS Reporting Server Information:

WebFOCUS Reporting Server Host:

WebFOCUS Reporting Server Port:

WebFOCUS ReportCaster Information:

Distribution Server Host:

Distribution Server Port:

☒ Start Distribution Server

Web/App Server Ports:

Tomcat HTTP Port:

Tomcat Server Shutdown Port: Tomcat AJP Port:

InstallAnywhere

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.

Note: The Web/App Server Ports area will appear only if you chose to install and configure Tomcat.

12. Click *Next*.

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.

The Install Complete window opens, listing the installation directory.

14. Click *Done* to exit the installation.

Procedure: How to Install a Stand-Alone ReportCaster Distribution Server

Note: The WebFOCUS Client must be installed before running the stand-alone ReportCaster Distribution Server installation.

To install a stand-alone ReportCaster Distribution Server on a separate machine from the WebFOCUS Client:

1. Sign in to the machine from which the installation will be invoked.

Note: The installer file (installWebFOCUS8201.bin) must be accessible from this machine.

2. Create a work directory and change to that directory.
3. Execute the installer file, using the following command:

```
./installWebFOCUS8201.bin -i console
```

The installation will provide a series of command-line prompts.

The WebFOCUS License Agreement displays in sections.

4. Press Enter to move through the license information.
5. At the DO YOU ACCEPT THE TERMS OF THIS LICENSE AGREEMENT prompt, type Y and press Enter.
6. At the Choose Install Type prompt, type 2 for Full Install and press Enter.
7. At the WebFOCUS License Code prompt, type in your license code and press Enter to continue.
8. At the WebFOCUS Site Code prompt, type in your site code and press Enter to continue.
9. At the Choose Install Set prompt, type 2 for a custom installation and press Enter.
10. At the Choose Destination Locations prompt, type a destination folder for the installation and press Enter, or press Enter to accept the default.

Note: Do not include spaces in the path.

11. At the Select Component to Install prompt, type Y or N and press Enter for each of the following components, or press Enter to accept the default (Y).

☐ **Install WebFOCUS.** Type N.

☐ **Install ReportCaster Distribution Server.** Type Y.

The installer will display the message:

You have chosen to install ReportCaster Distribution Server only, WebFOCUS will not be installed

Select an existing database from the list of databases provided. Select the same database which the WebFOCUS Client will be using.

In the Database Configuration pane, provide the necessary information for the existing database.

12. Press Enter to continue the installation.

The Advanced Configuration prompts display.

13. At the Distribution Server Host prompt, type a host name and press Enter, or press Enter to accept the default.
14. At the Distribution Server Port prompt, type a server port and press Enter, or press Enter to accept the default.
15. At the Start Distribution Server prompt, type N and press Enter.

The configurations for the Distribution Server and Database are displayed.

Note: If any of the Advanced Configuration parameters are incorrect, type *back* to reenter values for the settings.

16. Press Enter to complete the installation.

Troubleshooting the Installation

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

1. Set the following environment variable from the command line or, optionally, set it globally in a profile:

```
_JAVA_OPTIONS="-Xms512m -Xmx1024m" ; export_JAVA_OPTIONS
```

2. Run the installation program.

Upgrading From an Earlier 8.2.x Release to Release 8.2 Version 01M

Due to changes in the WebFOCUS Release 8.2 Version 01M repository database structure, a database update is required to enable you to use an existing Release 8.2.x database with Release 8.2 Version 01M.

Upgrade Installation Steps

The database update is performed during the upgrade installation. The installation checks the database version used for the WebFOCUS repository to determine if a database update is required.

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

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

```
Update process SUCCEEDED
```

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

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

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

```
Version checker process FAILED to connect to database  
ERROR:connecting to DB, DBCHECK:connect_error-not going to execute:  
/home/user/ibi/WebFOCUS82/utilities/dbupdate/db_inplace_update.sh
```

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

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

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

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

1. Ensure that the database is running.
2. Run the *db_inplace_update.sh* utility. The *db_inplace_update* database utility is stored in the */home/user/ibi/WebFOCUS82/utilities/dbupdate* folder.

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

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

3. Type the database repository user name and password, when prompted.
- Note:** Credentials used for the database update utility need privileges to allow table changes.
4. After a successful database update, clear the application server cache and then start the application server.
 5. Confirm that the connection to WebFOCUS is functional and that the content is correct.
 6. Add the new Manager roles, using the Role Update Utility in the WebFOCUS Administration Console.
 - a. Sign in to WebFOCUS as an administrator.
 - b. From the Menu bar, click *Administration*, and then click *Administration Console*.
 - c. In the Configuration panel, click *Role Update Utility*.

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

- d. Under the following Roles, click *Add*, to add them to your environment:

- ☐ WebFOCUSManager
- ☐ WebFOCUSManagerDomainRestrictions
- ☐ WebFOCUSManagerFolderRestrictions
- ☐ WebFOCUSManagerRestrictions

☐ WebFOCUSManagerServerAccess

7. Run the following utility to update roles and user groups, and include new templates that are available for portal development:

`/home/user/ibi/WebFOCUS82/utilities/WFReposUtil/update_repos.sh`

You will get prompted to provide WebFOCUS administrator credentials.

This utility imports the following Change Management packages:

☐ `/home/user/ibi/WebFOCUS82/features/bip/managers_group_and_rules.zip`

☐ `/home/user/ibi/WebFOCUS82/features/bip/bip_page_templates_Vnn.zip`, where *nn* is the version of the package.

Logs are created in the `/home/user/ibi/WebFOCUS82/logs` folder under the following names:

☐ `cm_import_bip_page_templates_<date_time>.log`

☐ `cm_import_managers_group_and_rules_<date_time>.log`

8. Close the Administration Console.

Reference: Troubleshooting the Upgrade Installation

- ☐ If the database update fails, you must ensure that the database is running and that the db owner is allowed to make changes to the database tables.
- ☐ Run the `/home/user/ibi/WebFOCUS82/utilities/dbupdate/db_check_version.sh` utility to verify if the database was updated.
- ☐ In case the application server cannot load the WebFOCUS web application, review the application server logs and WebFOCUS logs, such as the `event.log` for errors.
 - ☐ WebFOCUS logs are created in the `/home/user/ibi/WebFOCUS82/logs` folder.
 - ☐ Log names for the `dbupdate` and `dbcheck` utilities are named `db_inplace_update_<timestamp>.log` and `db_check_version__<timestamp>.log`.
- ☐ If the database update was successful, and the application server fails to start and `db_check_version` indicates that the database is not up to date, ensure that the application server cache is cleared and attempt to restart the application server and connect to WebFOCUS.

Upgrading Content From Release 8.1.x or 8.0.x to Release 8.2 Version 01M

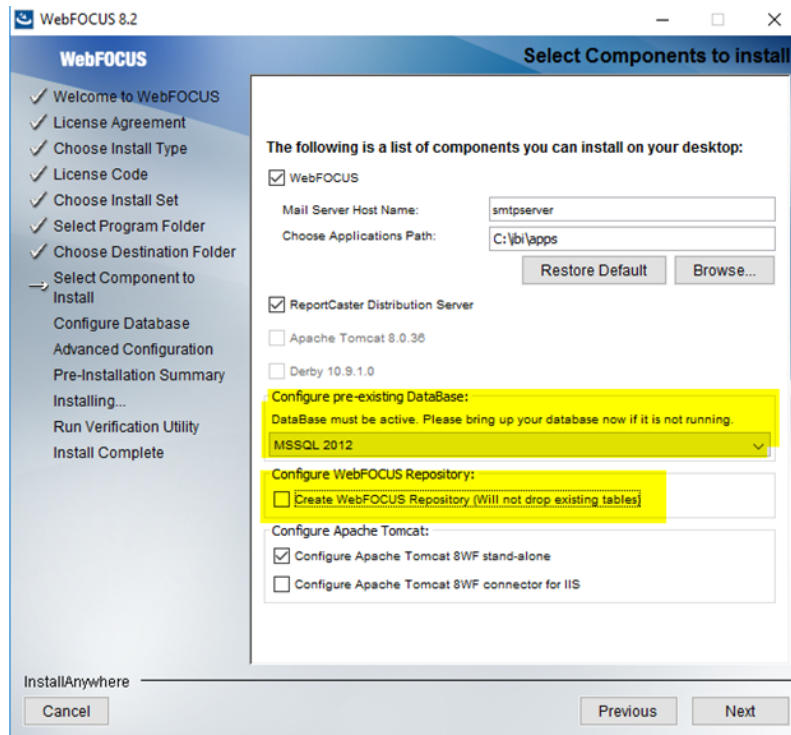
The following procedure describes how to upgrade content and applications from WebFOCUS Release 8.1.x or 8.0.x to WebFOCUS Release 8.2 Version 01M.

Procedure: How to Upgrade Content From Release 8.1.x or 8.0.x to Release 8.2 Version 01M

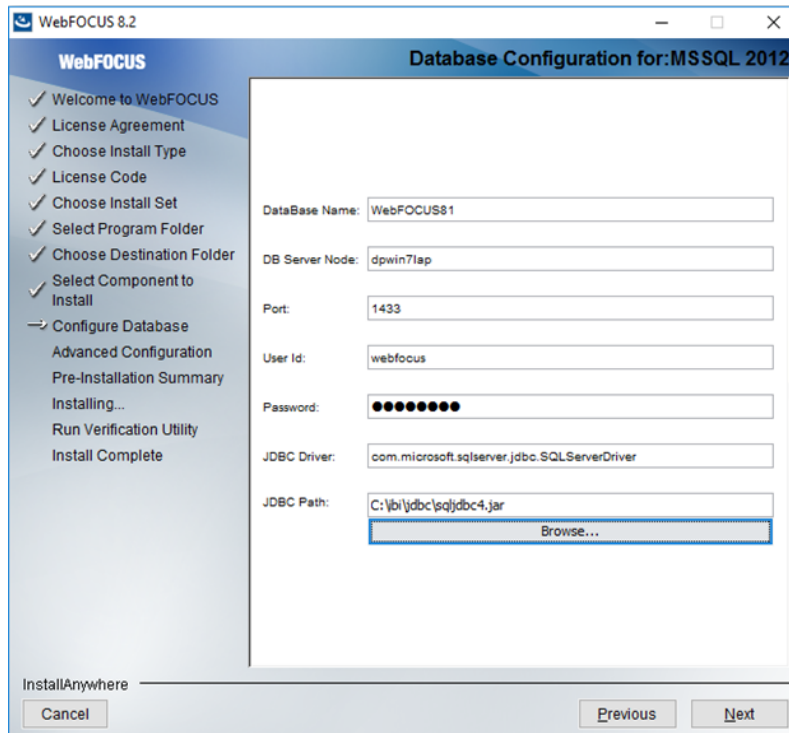
1. Make a backup of your database repository, following your corporate best practices.
2. Ensure the collation of the database, including all tables and columns, is case sensitive.
3. Ensure the database is running.
4. Perform a new full installation of WebFOCUS Release 8.2.01M.

Note: During the installation, you will point to the existing 8.1.x or 8.0.x database repository that you plan to use with WebFOCUS Release 8.2.01M.

5. During the installation of WebFOCUS Release 8.2.01M, specify the type of database repository, as well as the database repository information for the earlier database repository that you are using. Specifically, in the Select Components to install dialog box, under Configure pre-existing Database, select the type of database repository that you are using, such as MS SQL or Oracle. In addition, ensure the *Create WebFOCUS Repository* option is not selected, as shown in the following image.



6. In the Database Configuration dialog box, type the database repository name, connection, and configuration information. An example of this information is shown in the following image.



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

Once completed, the new installation of WebFOCUS Release 8.2.01M is available in the /home/user/ibi/WebFOCUS82 directory.

7. Stop your application server, for example, Apache Tomcat.
8. Ensure that your database repository, for example MS SQL, where your WebFOCUS 8.0.x or 8.1.x database repository is stored, is running.
9. Rename the /home/user/ibi/WebFOCUS82/utilities/lib/versions/8200/IBFSCommands.jar file.
10. Run the /home/user/ibi/WebFOCUS82/utilities/dbupdate/db_inplace_update utility.

Note:

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

- ☐ You will be prompted for the location of the IBFSCCommands.jar file. Point to the IBFSCCommands.jar file used in the release in which the WebFOCUS repository was created. For example, if you are using 8.1.x, point to the /home/user/ibi/WebFOCUS81/utilities/lib/ folder.

Note: If you install WebFOCUS Release 8.2.01M on a different machine, that does not have access to the earlier version of WebFOCUS, you must copy the IBFSCCommands.jar file from the earlier version of WebFOCUS to the machine with WebFOCUS Release 8.2.01M, and point to this location when running the database repository update utility.

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

11. If you are updating an 8.0.x database for use with Release 8.2.01M, you need to run the following utilities after db_inplace_update:

/home/user/ibi/WebFOCUS82/utilities/bip/portalconversion.sh

/home/user/ibi/WebFOCUS82/utilities/bip/favoritesmigration.sh

12. After a successful database update, clear the application server cache and then start the application server.
13. Confirm that the connection to WebFOCUS is functional and that the content is correct.
14. Add the new Manager roles, using the Role Update Utility in the WebFOCUS Administration Console.
 - a. Sign in to WebFOCUS as an administrator.
 - b. From the Menu bar, click *Administration*, and then click *Administration Console*.
 - c. In the Configuration panel, click *Role Update Utility*.

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

- d. Under the following Roles, click *Add*, to add them to your environment:

- ☐ WebFOCUSManager
- ☐ WebFOCUSManagerDomainRestrictions
- ☐ WebFOCUSManagerFolderRestrictions
- ☐ WebFOCUSManagerRestrictions
- ☐ WebFOCUSManagerServerAccess

15. Run the following utility to update roles and user groups, and include new templates that are available for portal development:

```
/home/user/ibi/WebFOCUS82/utilities/WFReposUtil/update_repos.sh
```

You will be prompted to provide WebFOCUS administrator credentials.

This utility imports the following Change Management packages:

- ❑ /home/user/ibi/WebFOCUS82/features/bip/managers_group_and_rules.zip
- ❑ /home/user/ibi/WebFOCUS82/features/bip/bip_page_templates_Vnn.zip, where *nn* is the version of the package.

Logs are created in the /home/user/ibi/WebFOCUS82/logs folder under the following names:

- ❑ cm_import_bip_page_templates_<date_time>.log
- ❑ cm_import_managers_group_and_rules_<date_time>.log

16. Clear the application server cache.
17. Restart the application server.
18. Connect to WebFOCUS and ensure the database is working properly.

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

Proceed with steps 8 through 15.

Troubleshooting

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

Issue 1: The database repository update fails immediately.

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

Issue 2: The application server fails to start.

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

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

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

- ❑ WebFOCUS logs are created in the WebFOCUS82\logs folder.
- ❑ Log names for the dbupdate and db check utilities are named db_inplace_update_<timestamp>.log and db_check_version_<timestamp>.log.

Creating the WebFOCUS UOA Repository

WebFOCUS 8.2 has a new architecture whereby all WebFOCUS web-tier content is stored in an RDBMS database. This database is referred to as the WebFOCUS UOA repository.

Procedure: How to Create the WebFOCUS UOA Repository

Note: To override the default tablespace when creating the Oracle UOA repository, follow these steps after the WebFOCUS Client and ReportCaster installations are complete.

1. Generate the Oracle DDL file as follows:
 - a. Run `install_directory/utilities/WFReposUtil/WFReposUtilCreateDDL.sh`.
This will create a file called `ddl-generation.sql` in the `install_directory/utilities/WFReposUtil` directory.
2. Update the `ddl-generation.sql` file:
 - a. For appropriate SQL statements, specify the Oracle tablespace in which the UOA repository tables are to be created and loaded.
3. Using an external tool, load the UOA repository tables to input SQL statements from the updated `ddl-generation.sql` file.
4. Run `install_directory/utilities/WFReposUtil/WFReposUtilLoad.sh` to load the required WebFOCUS UOA information into the UOA repository.
5. Verify that the UOA repository tables were created and loaded in the Oracle tablespace specified in the `ddl-generation.sql` file.

Configuring Web and Application Servers

The WebFOCUS environment will comprise a WebSphere Network Deployment that has a WebSphere cluster with two members. This means that when the WebFOCUS web applications are installed, they must be installed to the WebSphere cluster, not to the individual WebSphere application server instances.

Procedure: How to Configure Web and Application Servers

To configure web and application servers:

1. Verify that the WebSphere JPA 2.0 Feature Pack is installed from the WebSphere Admin Console for each of the two WebSphere application servers in the WebSphere cluster.

In the list of application servers, the version for each of the WebSphere application servers to be used for WebFOCUS should reflect that JPA 2.0 is installed, as shown in the following image.
2. From the WebSphere Admin Console, add the Oracle JDBC driver to the Java Setting of the WebSphere Application Server instance.
 - a. Navigate to *Application Servers*, *{Server Instance}*, *Server Infrastructure*, *Java* and *Process Management*, *Process Definition*, and then *Java Virtual Machine*.
 - b. Under *General Properties*, add the fully qualified path to the Oracle JDBC driver to Classpath, as shown in the following image.

Select	Name ▾	Node ▾	Host Name ▾	Version ▾	Cluster Name ▾	Status 🔍
You can administer the following resources:						
<input type="checkbox"/>	vashti	hpa31Node01	hpa31.ibi.com	ND 7.0.0.17 JPA 2.0 Feature 1.0.0.0		?

General Properties

Classpath

```
/qa/tss/jdbc_drivers/ora111/ojdbc6.jar
```

3. Install the WebFOCUS web applications packaged with WebFOCUS 8.2 to the WebSphere Network Deployment Cluster Node:

`install_directory/webapps/webfocus.war (context root /ibi_apps)`
`install_directory/webapps/ibi_help.war (context root /ibi_help)`
4. Generate and propagate the web server plug-in.
5. Start the WebFOCUS web applications and application server.

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 WebFOCUS82 directory. For example:

`install_directory/ibi/WebFOCUS82`

The WebFOCUS82 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.

`features`

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

`ibi_html`

Contains Java tools, templates, and other files used by 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 and demos.

`temp`

Contains space used during internal processing.

`Uninstall_WebFOCUS82`

Contains files used by the uninstall program.

`utilities`

Contains tools for configuration, migration, and other tasks.

`webapps`

Contains the WebFOCUS and ReportCaster web applications.

ReportCaster Distribution Server Directories

The default directory for the Distribution Server is:

`install_directory/ibi/WebFOCUS82/ReportCaster`

The directory contains the following subdirectories:

`bin`

Contains application and other executable files.

`cfg`

Contains configuration and NLS resource files.

`lib`

Contains ReportCaster libraries.

`log`

Contains configuration and error messages.

`resources`

Contains resources.

samples

Contains sample API files.

temp

Contains space for internal processing.

trc

Contains the trace files.

Note: ReportCaster web components are installed with WebFOCUS Client.

File Permissions for WebFOCUS Client Directories

WebFOCUS sometimes runs as part of your web server and application server. Therefore, the web and application servers require full access to WebFOCUS directories.

Procedure: How to Configure File Permissions for WebFOCUS Client Directories

1. Determine which user IDs run web server and application server processes.
 - ❑ If you installed using the same ID that runs the web and application server processes, then file permissions should default correctly.
 - ❑ If web and application servers run as different user IDs, determine which user IDs run your web and application server processes.
2. Grant those IDs full access to WebFOCUS Client directories and their subdirectories:

```
/install_directory/ibi/apps
/install_directory/ibi/WebFOCUS82
```

- ❑ If WebFOCUS Client directories are owned by a group whose only member is the owner of the files, then add the other IDs to this group and change permissions to 775.
- ❑ If WebFOCUS Client directories are owned by a general group that has many members, change group ownership to a group containing only the necessary IDs and change permissions to 775.

Permissions can be further restricted to 770 for sensitive directories, like config.

Note: Communication between WebFOCUS Client and the WebFOCUS Reporting Server is through TCP/IP, not the file system. However, if WebFOCUS Client and the WebFOCUS Reporting Server are installed on the same machine as the same user, they may share the same approot directory, `/install_directory/ibi/apps` by default. If this is the case, both WebFOCUS Client and Reporting Server processes require access to this directory.

Uninstalling the WebFOCUS Client

Prior to uninstalling the WebFOCUS Client software, ensure that all related servers are stopped (for example, application server, HTTP server, and ReportCaster). You can use the following options to uninstall the WebFOCUS Client:

- ❑ Delete the WebFOCUSnn folder from the disk. This is the preferred method for uninstalling the software.
- ❑ The uninstall script, Uninstall_WebFOCUS82, located in the usr/ibi/WebFOCUS82/Uninstall_WebFOCUS82/ directory. Note that this process is slower.
- ❑ A silent uninstall, using the command line, by adding the option *-i silent* after the uninstall executable file. For example:

```
usr/ibi/WebFOCUS82/Uninstall_WebFOCUS82/Uninstall_WebFOCUS82.sh -i silent
```



Chapter 5

Configuring Web and Application Servers

This chapter explains how to configure your web and/or application server for WebFOCUS.

The following abbreviation is used for the path to the ibi directory where you install WebFOCUS components on your system:

[/install_directory/](#)

Substitute the actual directory on your system when reviewing procedures and examples in this document.

The configuration is not difficult, but there are many options, so be sure to read this chapter carefully. Only subsections will apply to your environment, so you should be careful to determine which sections apply.

Note: The terms web server and HTTP server are used somewhat interchangeably in this section because Apache HTTP Server and IBM HTTP Server are web servers.

In this chapter:

- ☐ [Configuration Overview](#)
 - ☐ [Configuring IBM WebSphere](#)
 - ☐ [Configuring Oracle WebLogic](#)
 - ☐ [Manually Configuring Apache Tomcat With or Without Apache HTTP Server](#)
 - ☐ [Installing and Configuring JBoss EAP 6.0.x or 6.2.x](#)
-

Configuration Overview

You have several configuration options for WebFOCUS. This section addresses web server and application server deployment.

Important: For a split-tier environment, see [Configuring WebFOCUS in a Split Web-Tier and Application Server-Only Environment](#) on page 117.

❑ **Web Server and Application Server.** (Aliases and web applications). In a standard configuration, you create aliases to traditional static web content in the WebFOCUS ibi/apps directory and deploy a web application on your application server (webfocus.war). This is supported when both a web (HTTP) 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.

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 117.

❑ **Application Server Only.** (All web applications). In an application server only configuration, you deploy all WebFOCUS content through web applications (WAR files). In this configuration, you deploy approot.war in addition to webfocus.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 117.

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

The following is an overview of the steps needed to configure the web or 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. Configure the application server to support WebFOCUS graphics. To do this, you must either set the DISPLAY variable to an X Windows Server or set the Java VM headless option (-Djava.awt.headless=true).
3. Add the WebFOCUS repository JDBC driver to your application server CLASSPATH.
4. 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:

`install_directory/ibi/WebFOCUS82/webapps/webfocus.war`

It is also provided as the following expanded directory:

`install_directory/ibi/WebFOCUS82/webapps/webfocus`

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

The default deployment parameters for WebFOCUS are:

Context Root/ Path	Doc base or location
/ibi_apps	<i>install_directory/ibi/WebFOCUS82/webapps/webfocus.war</i>
/ibi_help	<i>install_directory/ibi/WebFOCUS82/webapps/ibi_help.war</i>
/approot	<i>install_directory/ibi/WebFOCUS82/webapps/approot.war</i>

5. Ensure your web server routes requests for the web application context root (/ibi_apps, /ibi_help, and /approot) to the application server.
6. Verify the configuration using the tools in the WebFOCUS Administration Console, as explained in [WebFOCUS Post-Installation Tasks](#) on page 117.

Note: If you are installing multiple instances, completely install and configure a single instance, and then refer to [Additional WebFOCUS Repository Topics and Tasks](#) on page 167 for instructions on configuring the second instance.

Documented Configurations

The following configurations are explained in this chapter:

- ❑ **IBM WebSphere** Application Server with or without IBM HTTP Server, see [Configuring IBM WebSphere](#) on page 90.
- ❑ **Oracle WebLogic 12c** with or without Apache HTTP Server, see [Configuring Oracle WebLogic](#) on page 99.
- ❑ **Apache Tomcat** with or without Apache HTTP Server, see [Manually Configuring Apache Tomcat With or Without Apache HTTP Server](#) on page 100.

For other web and/or application servers, review the information for the servers above and consult your third party documentation for the corresponding steps.

Note: If you changed the default names for the WebFOCUS context root (/ibi_apps), substitute accordingly.

Configuring IBM WebSphere

This topic explains how to modify the IBM WebSphere Application Server for use with WebFOCUS.

It is assumed that WebSphere components are installed and configured and that a WebSphere Application Server has been created for use with WebFOCUS.

The WebFOCUS web application (webfocus.war) requires a shared library in order to override certain libraries provided by WebSphere.

Procedure: How to Create the WebSphere Application Server Shared Library

1. Create a new directory to use for the shared library. This directory must be accessible by the WebSphere Application Server user. For example:

```
mkdir -p /home/ibi/shared
```

2. Copy the following files from the ../ibi/WebFOCUS82/webapps/webfocus/WEB-INF/lib/ directory to the directory created in step 1.

☐ jackson-all-*.jar

☐ http*.jar

☐ javax.persistence*.jar

☐ openjpa-*.jar

☐ eclipselink-*.jar

☐ commons-*.jar

For example:

```
cp /home/ibi/WebFOCUS82/webapps/webfocus/WEB-INF/lib/jackson-all*.jar /home/ibi/shared
```

3. Sign in to the WebSphere Console.

4. Expand *Environment* and then expand *Shared Libraries*, as shown in the following image.

Shared Libraries

Use this page to define a container-wide shared library that can be used by deployed applications.

Scope: Cell=unxrh6Cell03

☒ Show scope selection drop-down list with the all scopes option

Scope specifies the level at which the resource definition is visible. For detailed information on what scope is and how it works, [see the scope settings help](#).

Cell=unxrh6Cell03

Preferences

New... Delete

Select	Name	Description
You can administer the following resources:		
<input type="checkbox"/>	IBI Jackson 1.9	Jackson 1.9 Library
<input type="checkbox"/>	IBI Shared 15215	
<input type="checkbox"/>	IBI Shared 383	Jackson.jar for confid 383
<input type="checkbox"/>	IBI Shared 408	Jackson.jar for confid=408
<input type="checkbox"/>	IBI Shared 414	Jackson.jar for confid=414
<input type="checkbox"/>	IBI Shared 512	
<input type="checkbox"/>	tiw57000_shared	
Total 7		

5. From the Scope drop-down list, select the scope for your environment and then click *New*.

The Shared Libraries dialog box opens, as shown in the following image.

The screenshot shows the 'Shared Libraries' dialog box with the 'New...' tab selected. The 'Configuration' section is active, showing the 'General Properties' tab. The 'Scope' is set to 'cells:unxrh5Cell03'. The 'Name' is 'IBI_Shared_Library'. The 'Description' is 'IBI Shared Library'. The 'Classpath' is '/home/ibi/shared'. The 'Native Library Path' is empty. The 'Class Loading' section has the checkbox 'Use an isolated class loader for this shared library' checked. At the bottom are buttons for 'Apply', 'OK', 'Reset', and 'Cancel'.

6. Provide the following values:
 - ☐ Name: IBI_Shared_Library
 - ☐ /home/ibi/shared
 - ☐ Select *Use an isolated class loader for this shared library*.
7. Click *OK* and then click *Save*.

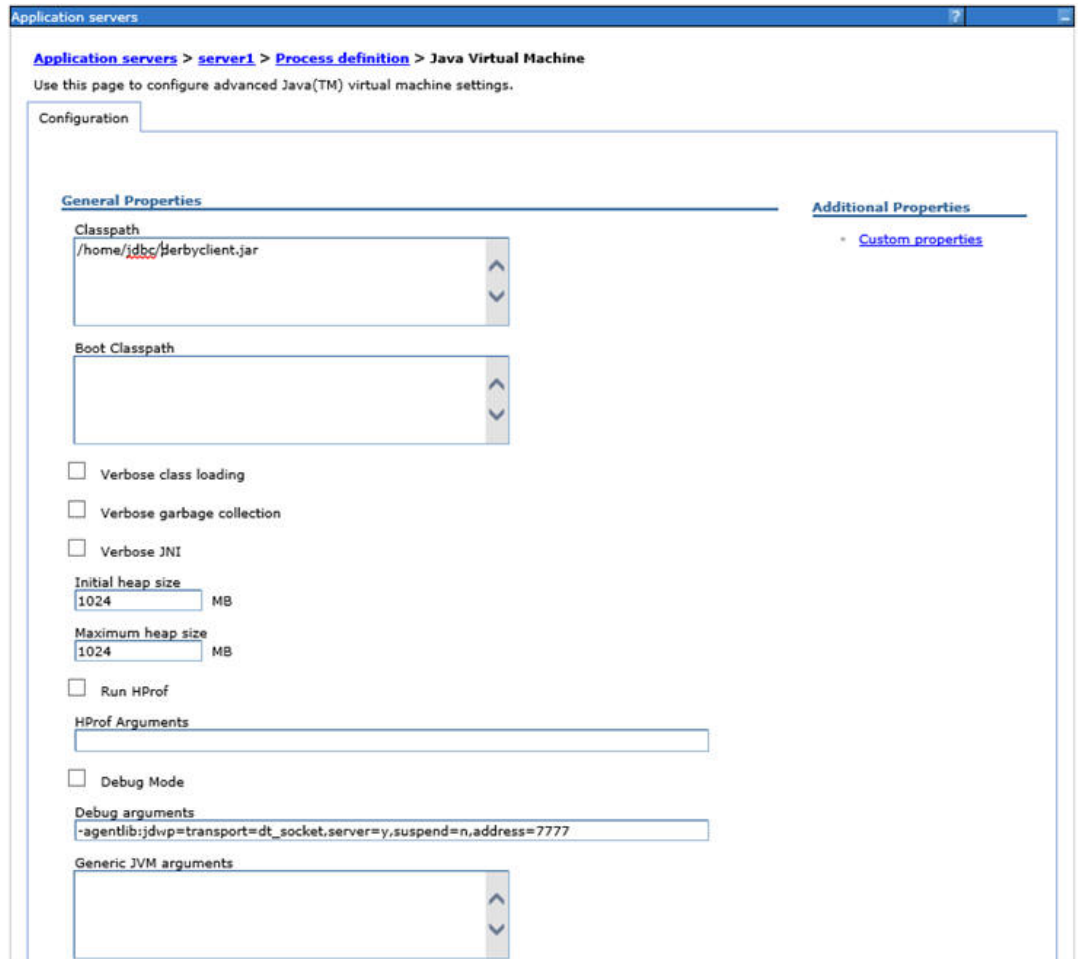
Procedure: How to Update the WebSphere Application Server Java Settings

The following additional settings are required by WebFOCUS.

1. Sign in to the WebSphere Console.

2. Expand Servers, Server Types, WebSphere application servers, your server, Server Infrastructure, Java and Process Management, Process definition, Additional Properties, and Java Virtual Machine.

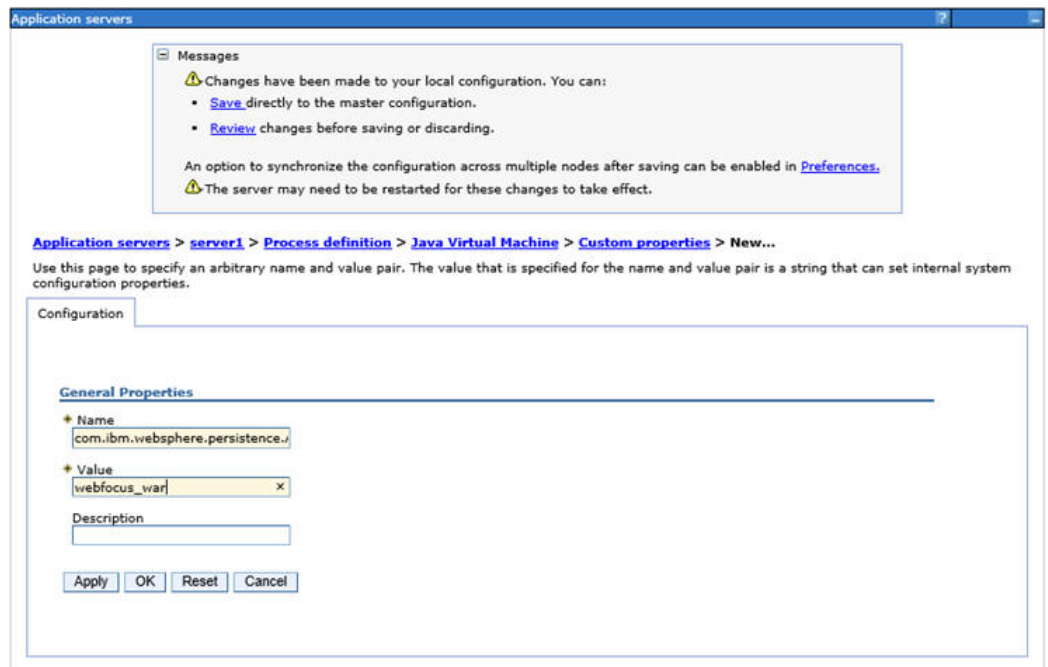
The Application servers Java Virtual Machine dialog box opens, as shown in the following image.



3. Update the following settings:
 - ☐ In the Classpath field, add the full path and name of the JDBC driver jar files required to access the WebFOCUS Repository database. If there is more than one, type one per line.
 - ☐ Change Initial Heap Size to at least 1024 (minimum, setting is in MB).

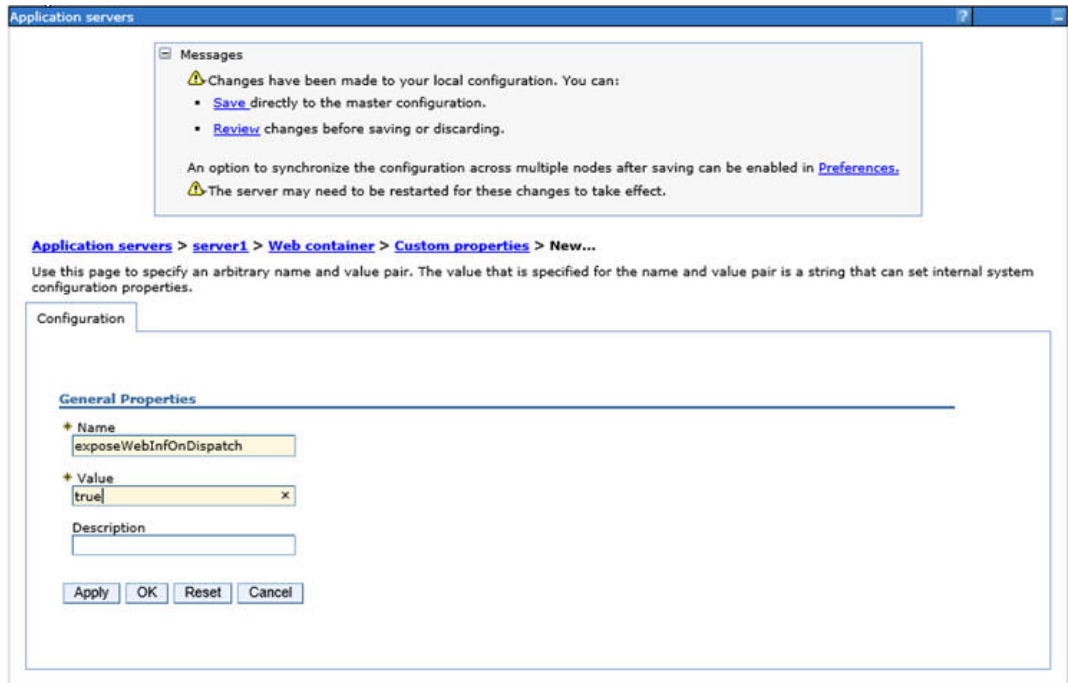
- ☐ Change Maximum Heap Size to at least 1024 (minimum, setting is in MB).
- 4. Click OK.
- 5. Expand *Servers, Server Types, WebSphere application servers, your server, Java and Process Management, Process definition, Java Virtual Machine, Custom properties, and New.*

The Application servers General Properties dialog box opens, as shown in the following image.



- 6. Update the following settings:
 - ☐ Name: com.ibm.websphere.persistence.ApplicationsExcludedFromJpaProcessing
 - ☐ Value: webfocus_war. This needs to match the name of the application when deployed. Modify this value to match the value you plan to use when deploying the webfocus.war web application.
- 7. Click OK.
- 8. Expand *Servers, Server Types, WebSphere application servers, your server, Container Settings, Web Container Settings, Web container, Custom properties, and New.*

The Application servers General Properties dialog box opens, as shown in the following image.



9. Update the following settings:

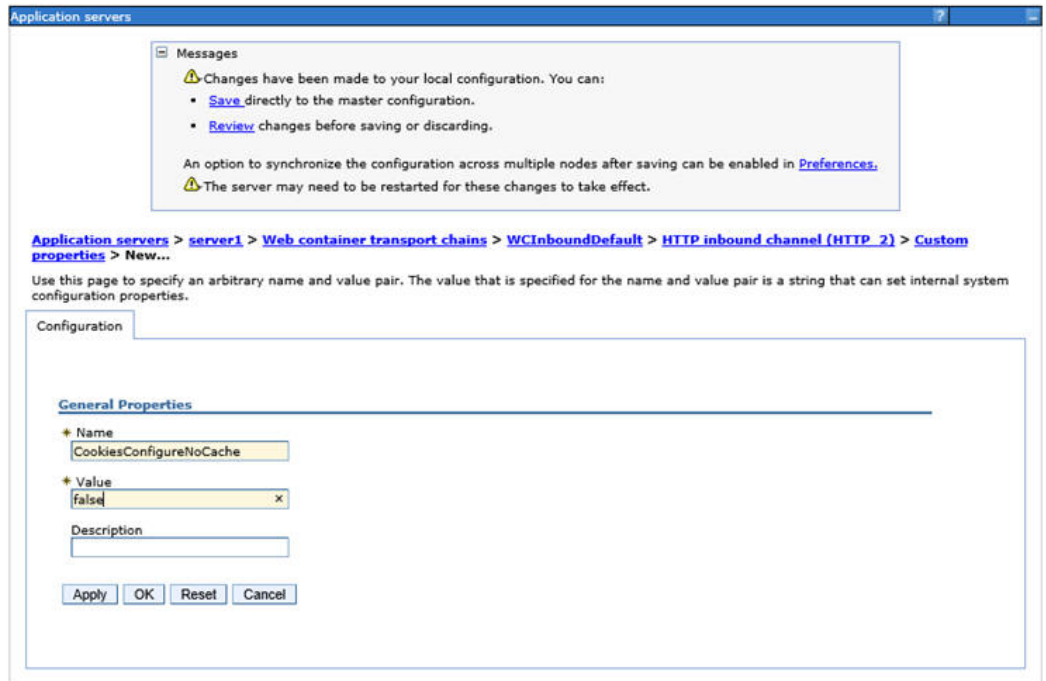
☐ Name: exposeWebInfOnDispatch

☐ Value: true

10. Click OK.

11. Expand Servers, Server Types, WebSphere application servers, your server, Container Settings, Web Container Settings, Web container transport chains, WCIInboundDefault, HTTP inbound channel, Custom properties, and New.

The Application servers General Properties dialog box opens, as shown in the following image.



12. Update the following settings:

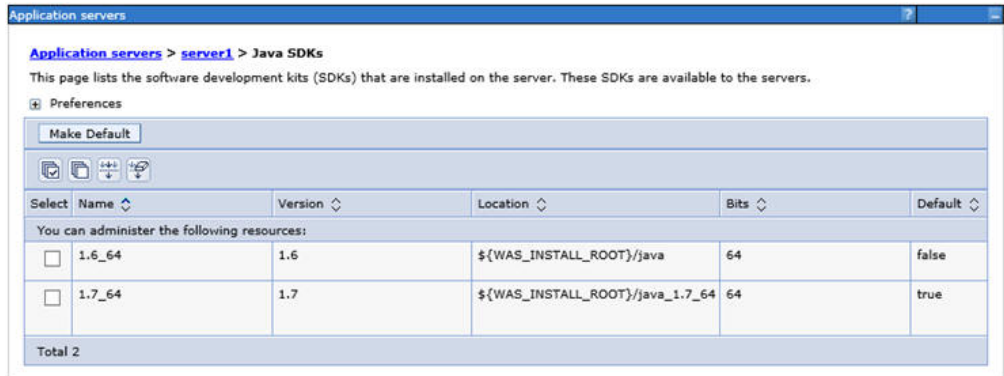
- ☐ Name: CookiesConfigureNoCache
- ☐ Value: false

13. Click **OK** and then click **Save**.

Procedure: How to Verify the WebSphere Application Server is Configured to Run Java 1.7 or 1.8

1. Sign in to the WebSphere Console.
2. Expand *Servers, Server Types, WebSphere application servers, your server, Server Infrastructure, and Java SDKs*.

The Application servers Java SDKs dialog box opens, as shown in the following image.

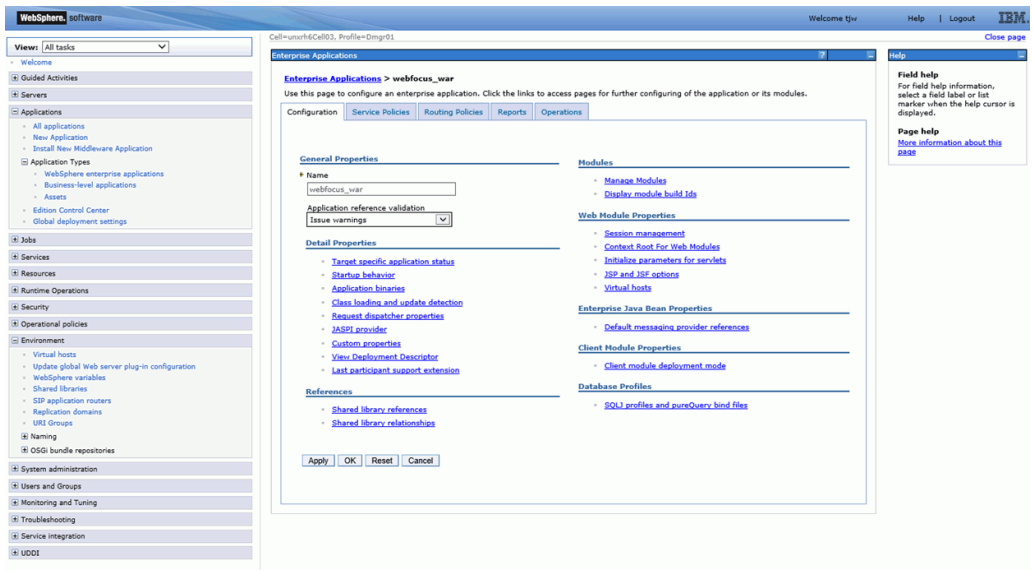


3. Verify that either the Java 1.7 or 1.8 (if present) SDK is set to true. If not, contact your WebSphere Administrator and request your server be updated to utilize 1.7 or 1.8.

Procedure: How to Assign the IBI_Shared_Library to the WebFOCUS Web Application (webfocus.war)

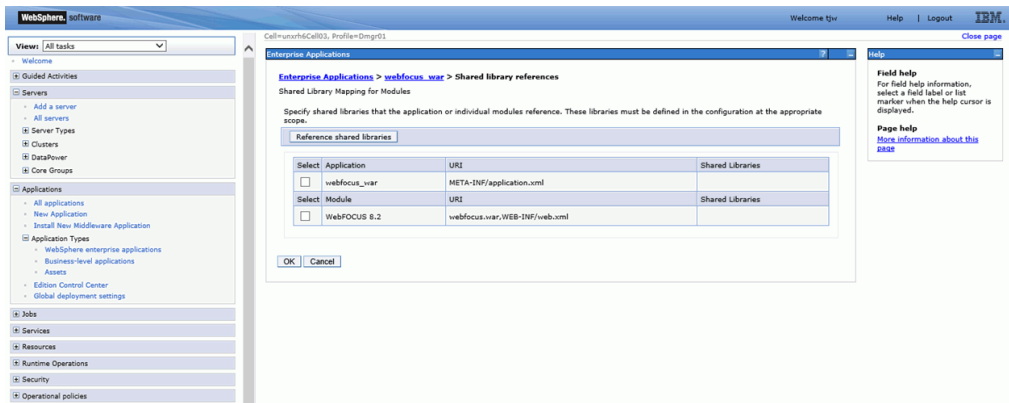
The following procedure assumes that the webfocus.war file has been deployed.

1. Sign in to the WebSphere Console.
2. Select *Applications, Application Types, WebSphere enterprise applications*, and your WebFOCUS web application, as shown in the following image.



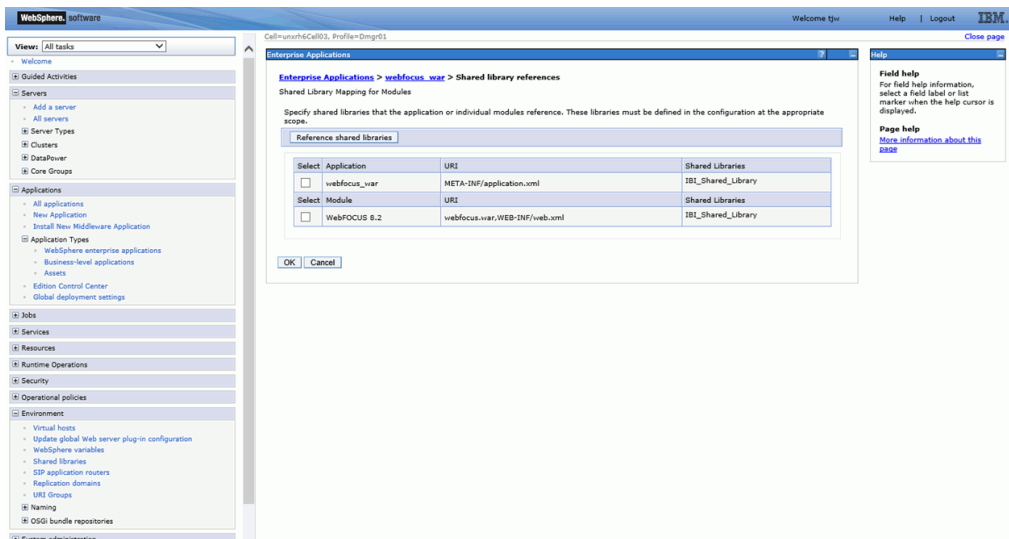
3. Select *Shared library references*.

The Shared library references panel displays, as shown in the following image.



4. Select one of the entries in the table and click *Reference shared libraries*.

Values populate in the Shared Libraries column, as shown in the following image.



- From the Available list, select *IBI_Shared_Library*, click the right arrow, and then click *OK*. Repeat for the second entry.
- Click *OK*, and then click *Save*.
- Restart the WebSphere Application Server.

Note: It is not sufficient to only restart the WebFOCUS web application.

Configuring Oracle WebLogic

This section describes the pre-requisites and post-requisites for configuring the Oracle WebLogic® Application Server for use with WebFOCUS and ReportCaster. It is assumed that WebLogic components are installed and configured. For additional information, see the WebLogic documentation.

Java Version Requirement

As of WebFOCUS 8.2, Java Version 7 is the minimum version required. The WebLogic server used to run the WebFOCUS Client must be configured to use a release of Java Version 7 or 8 that is supported by the WebLogic version being used. Consult the WebLogic server documentation for supported Java releases and how to modify your Java version, if required.

Update Java Settings

Consult the WebLogic server documentation for instructions on where to place the updated settings in your environment.

- ❑ Java 7 minimum memory settings: `-Xms1024m -Xmx1024m -XX:PermSize=256m -XX:MaxPermSize=384m`
- ❑ Java 8 minimum memory settings: `-Xms1024m -Xmx1024m`
- ❑ Classpath: Add the full path and name of the JDBC driver jar files required to access the WebFOCUS Repository database.
- ❑ UNIX/Linux graphics: In order to display graphics, your DISPLAY variable must point to an available X server, or you can set the JAVA variable `-Djava.awt.headless=true`.
- ❑ Temp directory: To avoid potential conflicts, your Java temporary directory should point to a unique location. Create an empty directory on a local filesystem that is writeable to the user that the WebLogic Server is running as, and then set the Java variable – `Djava.io.tmpdir=/fullpath/yourprivatetmpdir`.

For example, if you are on a Linux system using a standalone WebLogic domain and the `startWebLogic.sh` script to start it, you could insert the following into the `bin/setDomainEnv.sh` script beginning on the second line:

```
USER_MEM_ARGS="-Xms1024m -Xmx1024m -XX:PermSize=256m -XX:MaxPermSize=384m"
PRE_CLASSPATH="/path/ibi/derby/lib/derbyclient.jar"
DISPLAY=yourxserver:0.0
JAVA_OPTIONS="-Djava.io.tmpdir=/fullpath/yourprivatetmpdir"
```

WebLogic Post-Installation Step

Prior to deploying the webfocus.war web archive to WebLogic, you must perform the following steps.

1. Create a file called weblogic.xml in the ../ibi/WebFOCUS82/webapps/webfocus/WEB-INF directory with the following:

```
<?xml version="1.0" encoding="UTF-8"?>
<wls:weblogic-web-app
xmlns:wls="http://xmlns.oracle.com/weblogic/weblogic-web-app"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://java.sun.com/xml/ns/javaee
http://java.sun.com/xml/ns/javaee/ejb-jar_3_0.xsd
http://xmlns.oracle.com/weblogic/weblogic-web-app
http://xmlns.oracle.com/weblogic/weblogic-web-app/1.4/weblogic-web-
app.xsd">

  <wls:container-descriptor>
    <wls:prefer-application-packages>
      <wls:package-name>org.bouncycastle.util</wls:package-name>
      <wls:package-name>org.apache.commons</wls:package-name>
      <wls:package-name>org.opensaml</wls:package-name>
      <wls:package-name>org.eclipse.persistence</wls:package-name>
    </wls:prefer-application-packages>
  </wls:container-descriptor>
</wls:weblogic-web-app>
```

2. Recreate the webfocus.war web archive and call the new archive ibi_apps.war, the following assumes the jar command is in your path and that you want to use /ibi_apps as your WebFOCUS context root:
 - a. cd ../ibi/WebFOCUS82/webapps/webfocus
 - b. jar cf ../ibi_apps.war .
3. Deploy the ibi_apps.war archive in place of the webfocus.war.

Manually Configuring Apache Tomcat With or Without Apache HTTP Server

Note: If you chose the option for the WebFOCUS installation to install Tomcat, you can skip this chapter.

This section explains how to install and configure Apache Tomcat, with or without Apache HTTP web server. There are two configurations available when using Apache Tomcat:

- ☐ Tomcat can be used as both a web server and application server where all processing is done by Tomcat. This is referred to as a Tomcat stand-alone configuration.
- ☐ Tomcat can be used as an application server for Java processing, while Apache HTTP Server can handle the traditional static web content.

Note: You can also use Tomcat for all WebFOCUS processing and use the HTTP Server only to forward requests through a firewall. This is the recommended configuration.

This section contains information for installing and configuring Tomcat and setting up the connection between the HTTP and Tomcat Servers. If you are using the HTTP Server, it should already be installed. Apache HTTP Server 2 is recommended, but 1.3 should work.

Steps are the following:

1. If it is not installed, install Tomcat 8.
2. Set environment variables and create contexts to deploy WebFOCUS web applications, as explained in [Preparing Tomcat for WebFOCUS Configuration](#) on page 101.
3. If you are using Apache HTTP Server to serve WebFOCUS content, create aliases, as explained in [Configuring Apache HTTP Server](#) on page 105.
4. If you are using Apache HTTP Server, configure communications between Tomcat and the HTTP Server, as explained in [Connecting Apache HTTP and Tomcat Servers](#) on page 105.
5. Verify the configuration, as explained in [Verifying the WebFOCUS Configuration With Tomcat and Apache HTTP Server](#) on page 108.

Preparing Tomcat for WebFOCUS Configuration

To prepare Tomcat for WebFOCUS, you need to choose how to create WebFOCUS graphs and add the ReportCaster JDBC driver.

Procedure: How to Configure Tomcat for WebFOCUS Graphs

To generate graphs, WebFOCUS Servlets either need access to an X Server or they can use the Java VM headless option. You can set either by editing the catalina.sh file.

- ❑ **DISPLAY.** If an X Windows Server is available, you should set a DISPLAY environment variable. Open the following file in a text editor:

`/tomcat_home/bin/catalina.sh`

Near the beginning of the file just after the commented section, add the appropriate DISPLAY definition. For example:

```
DISPLAY=xserver_host:0.0
export DISPLAY
TERM=xterm
export TERM
```

where:

`xserver_host`

Is the host name or IP Address of a machine that is running an X server.

Note: Graphs are not actually displayed on the machine you set to DISPLAY, but WebFOCUS Servlets must access this X Server to generate graphs. After finishing this chapter, be sure to review the tests to verify graphs in [Verifying and Troubleshooting Server Side Graphics \(PCHOLD\)](#) on page 126.

- ❑ **Headless.** If an X Windows Server is not available, you can set the headless Java VM option. However, be aware that headless does not support GIF files or the older WebFOCUS graph engine (GRAPH32). Open the following file in a text editor:

```
/tomcat_home/bin/catalina.sh
```

You can add the headless option by setting the \$JAVA_OPTS variable. Near the beginning of the file, just after the commented section, add the following line:

```
export JAVA_OPTS="${JAVA_OPTS} -Djava.awt.headless=true"
```

Procedure: How to Set the Tomcat CLASSPATH for the WebFOCUS Repository

Before a WebFOCUS application can connect to the WebFOCUS repository, you must first add the location of a JDBC driver to the CLASSPATH in setclasspath.sh.

1. Open the following file in a text editor:

```
/tomcat_home/bin/catalina.sh
```

2. Find the line that sets CLASSPATH. For example:

```
CLASSPATH=/home/oracle/oracle/ojdbc6.jar
```

Note: If there is more than one jar file, it should be appended, separated by a colon (:).

3. Append a colon followed by the path to the JDBC drivers for your repository. Include any ZIP or JAR files. For example:

```
CLASSPATH="$JAVA_HOME"/lib/tools.jar:/home/oracle/oracle/  
ojdbc6.jar
```

Note: You must include the full path including the file name. Specifying a directory is not sufficient.

4. Save and close the editor.

Deploying WebFOCUS Web Applications With 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:

`/install_directory/ibi/WebFOCUS82/webapps/webfocus`

When it receives a request for the WebFOCUS context root:

`http://TomcatHost:tomcatHTTPport/ibi_apps`

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

- ❑ When using Tomcat as the application server and Apache HTTP Server as the web server, create only the following context on Tomcat:

Context (path): `/ibi_apps`

Directory (DocumentBase): `/install_directory/ibi/WebFOCUS82/webapps/webfocus`

The approot context is then created as aliases on the HTTP Server. The HTTP Server is then configured to send requests for ibi_apps to Tomcat. However, this assumes the HTTP Server handles some WebFOCUS content directly. If you want the HTTP Server to only forward requests through a firewall, do not create aliases on the HTTP Server, but instead configure Tomcat to handle all WebFOCUS content.

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

Context (path)	Directory (DocumentBase)
<code>/ibi_apps</code>	<code>/install_directory/ibi/WebFOCUS82/webapps/webfocus</code>
<code>/ibi_help</code>	<code>/install_directory/ibi/WebFOCUS82/webapps/ibi_help</code>
<code>/approot</code>	<code>/install_directory/ibi/apps</code>

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

Procedure: How to Create Contexts

There are several ways to create contexts:

- ❑ You can manually create individual XML files for each web application or context under `tomcat_home/conf/Catalina/localhost`.

- ❑ You can edit `server.xml` to define contexts.
- ❑ You can copy `webfocus.war` to `/tomcat_home/webapps` and then rename it to `ibi_apps.war`.
- ❑ You can use the Tomcat web-based tools.

This procedure explains how to create contexts using the web-based tools. When you create a context for a web application, the web application is deployed.

To create contexts for Tomcat 8, Information Builders recommends creating or editing XML files in the following directory to define the contexts:

`/tomcat_home/conf/Catalina/localhost`

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 deployed the expanded directories, the new web applications should be used automatically, but you should remove the following work directories and then restart Tomcat.

`/tomcat_home/work/Catalina/localhost/ibi_apps`

`/tomcat_home/work/Catalina/localhost/ibi_help`

Note: The `redirect.war` file is available for redirecting custom applications with URLs containing `rcaster` as the ReportCaster context root. If you are planning to deploy this file, you should also remove the following work directory and then restart Tomcat:

`/tomcat_home/work/Catalina/localhost/rcaster`

- ❑ 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 Tool or remove the corresponding files and directories of the context. For example:

`/tomcat_home/conf/Catalina/localhost/ibi_apps.xml`

`/tomcat_home/work/Catalina/localhost/ibi_apps`

`/tomcat_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.

Configuring Apache HTTP Server

Tomcat can be used with or without Apache HTTP Server.

- ❑ If you are using Tomcat without the HTTP Server, you should have created the `approot` alias as a Tomcat context. If you are not using the HTTP Server, proceed to [Verifying the WebFOCUS Configuration With Tomcat and Apache HTTP Server](#) on page 108.
- ❑ If you are using Tomcat with the HTTP Server, you need to create aliases and configure communications between the HTTP Server and Tomcat.

To create aliases, edit the `httpd.conf` configuration file as explained below making sure to replace `install_directory` with the correct path on your machine. If you changed the default names for the WebFOCUS aliases and context root (`/ibi_apps`), substitute accordingly.

Procedure: How to Modify the Apache `httpd.conf` File

1. Using a text editor, open the `httpd.conf` file located in the `/apache_home/conf` directory.
2. Add the following lines in the Alias section making sure to use the correct `install_directory` on your machine:

- ❑ Point an alias to the apps directory.

```
Alias /approot/ "/install_directory/ibi/apps/"
```

For example:

```
Alias /approot/ "/home/iadmin/ibi/apps/"
Alias /icons/ "/usr/apache2/icons/"
```

3. Save and close the file.
4. Restart the HTTP Server.

Connecting Apache HTTP and Tomcat Servers

There are many different ways to connect from Apache HTTP Server to Tomcat. This section addresses JK1.2, `mod_jk`. If you wish to use another approach, such as ProxyPass or JK2, refer to Apache and Tomcat documentation.

The following files are needed for Apache to connect to Tomcat when using JK1.2:

`mod_jk.so`

Provides binary instructions for Apache to connect to Tomcat. See [How to Download or Build the mod_jk.so File](#) on page 106.

`workers.properties`

Provides configuration information needed by the `mod_jk.so` binary. See [How to Create the mod_jk.conf File](#) on page 108.

`mod_jk.conf`

Tells Apache to load the `mod_jk.so` binary and use settings in `workers.properties`. See [How to Create the workers.properties File](#) on page 107.

`httpd.conf`

Tells Apache to Include `mod_jk.conf`. See [How to Edit httpd.conf to Use JK1.2](#) on page 108.

Additional documentation on using the JK1.2 connector is available at:

<http://tomcat.apache.org/connectors-doc/index.html>

Procedure: How to Download or Build the `mod_jk.so` File

The `mod_jk.so` binary must be compiled specifically for your platform and Apache HTTP Server release (1.3 or 2.0). Binaries and source code can be downloaded from:

<http://jakarta.apache.org/tomcat/connectors-doc/index.html>

1. Test the WebFOCUS web application by going to the following URL in a browser:

http://TomcatHost:TomcatHTTPport/ibi_apps/diagnostics/about.jsp

A page should appear displaying information about the current build. For example:

Version:WEB82

If the page fails to load, restart Tomcat, and ensure it can compile JSP files. In some environments, the very first time a JSP file is compiled you might receive an error.

2. If you are using Tomcat as both web and application server, proceed to [Verifying the WebFOCUS Configuration With Tomcat and Apache HTTP Server](#) on page 108.

The binaries you download will have a long name indicating the platform and Apache release. You should rename this file to `mod_jk.so`.

If a binary is not available for your platform, you can download the source code and compile it. If you do an online search, you should be able to find information on compiling `mod_jk.so`. The compiled file may have a different name, such as `libmod_jk.so`.

The `mod_jk.so` file should be placed on your system in a directory to which the HTTP Server has at least read permissions.

Procedure: How to Create the `workers.properties` File

1. If the file does not exist, create the following file in a directory to which Apache HTTP Server has at least read permissions:

`workers.properties`

For example:

`/apache_home/conf/tomcat/workers.properties`

2. Open the file in a text editor to edit or add the following text to the file replacing text in italics with absolute paths:

```
workers.tomcat_home=tomcat_home
workers.java_home=java_homeps=/
worker.list=ajp13
worker.ajp13.port=8009
worker.ajp13.host=localhost
worker.ajp13.type=ajp13
```

where:

tomcat_home

Is the installation directory for Apache Tomcat. Use an absolute path.

java_home

Is the installation directory for the Java JDK. Use an absolute path.

8009

Is the Ajp13 port defined in `server.xml`. 8009 is the default, but if you changed this, provide the new value.

Procedure: How to Create the mod_jk.conf File

1. If the file does not exist, create the following file in a directory to which Apache HTTP Server has read access:

`mod_jk.conf`

For example:

`/apache_home/conf/tomcat/mod_jk.conf`

2. Open the file in a text editor to edit or add the following text to the file replacing `PATH_TO/` with absolute paths to the file in question:

```
<IfModule !mod_jk.c>
    LoadModule jk_module /PATH_TO/mod_jk.so
</IfModule>
JkWorkersFile "/PATH_TO/workers.properties"
JkLogFile "/PATH_TO/tomcat/jk1.2/mod_jk.log"
JkLogLevel emerg
JkMount /ibi_apps ajp13
JkMount /ibi_apps/* ajp13
```

Note: If you changed the default context roots, substitute accordingly.

Procedure: How to Edit httpd.conf to Use JK1.2

1. Using a text editor, open the httpd.conf file located in the `/apache_home/conf` directory.
2. Add the following line to the end of the file specifying where the mod_jk.conf file is located on your system:

`Include /PATH_TO/mod_jk.conf`

Verifying the WebFOCUS Configuration With Tomcat and Apache HTTP Server

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:

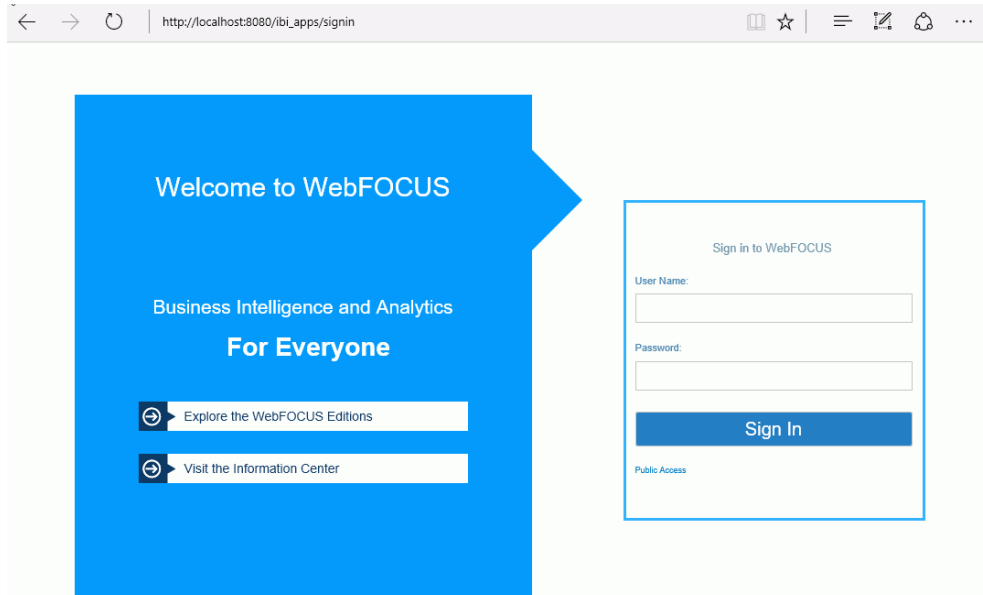
`http://hostname:port/ibi_apps`

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. 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.



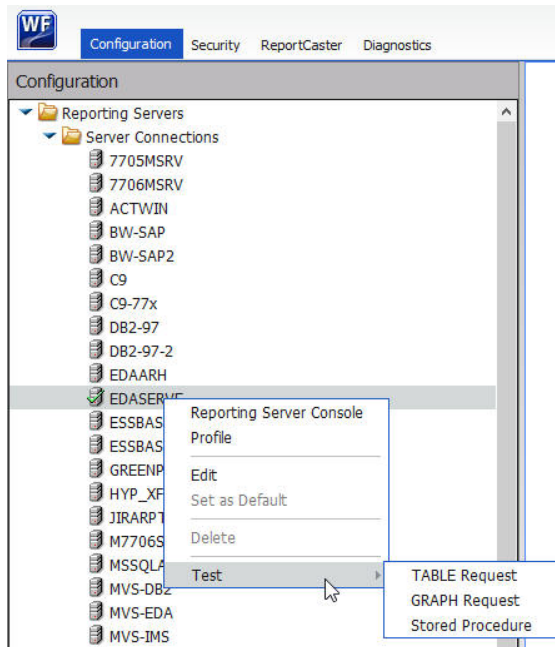
4. Click *Administration* in the top pane, and then select *Administration Console*, as shown in the following image.



The WebFOCUS Administration Console opens.

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

- Right-click a node, select *Test*, and then select *TABLE Request*, *GRAPH Request*, or *Stored Procedure*, as shown in the following image.



- 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
```

- If you are using Tomcat stand-alone, proceed to [Post-Installation Verification and Configuration](#) on page 117.

Installing and Configuring JBoss EAP 6.0.x or 6.2.x

This topic describes how to install and configure JBoss EAP 6.0.x or EAP 6.2.x with WebFOCUS.

Procedure: How to Install and Configure JBoss

- To install JBoss from a zip file, unzip the file, as follows:

```
unzip jboss-eap-6.0.x.zip
```

This will create a subdirectory in the form `jboss-eap-6.0`.

2. Create an administration user, as follows:

```
cd install_dir/bin
./add-user.sh admin password
```

where *install_dir* refers to `/dir/jboss-eap-6.x/jboss-as`. This procedure assumes use of the standalone configuration.

3. If installing on a system that is running other JBoss instances or if the following ports are in use, edit the *install_dir*/standalone/configuration/standalone.xml file and change the following port assignments:

Note: There are additional ports listed in the standalone.xml file. If you are deploying WebFOCUS, only the services they support do not run and they are not used.

- ☐ 8080 - HTTP port
- ☐ 8443 - HTTPS port
- ☐ 8009 - AJP port
- ☐ 4447 - Remote port
- ☐ 9990 - Management HTTP port
- ☐ 9999 - Management native port

4. If you are using Derby, the JBoss installation already contains the Derby JDBC driver. The default standalone configuration sets `java.awt.headless=true`. If you need to add another JDBC driver, change the headless setting, or change other JVM settings, edit the *install_dir*/bin/standalone.conf file. Search for `JAVA_OPTS` to headless setting or other JVM properties.
5. Start JBoss so that all ports listen on all interfaces. Otherwise, by default, they will only listen on 127.0.0.1. As an alternative to all interfaces, you can specify a specific IP address to listen on, as follows.

```
cd install_dir/bin
./standalone.sh -b 0.0.0.0 -bmanagement=0.0.0.0
```

Note: To stop JBoss, press Ctrl+C.

Reconfigure the WebFOCUS Web Application Files

JBoss is delivered with log4j that is not compatible with WebFOCUS and conflicts with `ibi_help`. As a result, the WebFOCUS web applications need to be modified to use isolated class loaders and parent last class loading. The following modifications are required and assumes that you are in the `ibi/WebFOCUS82/webapps` directory. Note that the xml files created in each step are not identical.

APPROOT

```
mv approot.war approot-orig.war mkdir approot
cd approot
jar xf ../approot-orig.war cd WEB-INF
```

Create the jboss-classloading.xml file with the following:

```
<?xml version="1.0" encoding="UTF-8"?>
<classloading xmlns="urn:jboss:classloading:1.0" name="approot.war"
domain="approot.war" export-all="NON_EMPTY" import-all="true"
parent-first="false"
/>
```

```
cd ..
jar cf ../approot.war .
cd ..
```

IBI_HTML

```
mv ibi_html.war ibi_html-orig.war mkdir ibi_html
cd ibi_html
jar xf ../ibi_html-orig.war cd WEB-INF
```

Create the jboss-classloading.xml file with the following:

```
<?xml version="1.0" encoding="UTF-8"?>
<classloading xmlns="urn:jboss:classloading:1.0" name="ibi_html.war"
domain="ibi_html.war" export-all="NON_EMPTY" import-all="true"
parent-first="false"
/>
```

```
cd ..
jar cf ../ibi_html.war .
cd ..
```

IBI_HELP

```
mv ibi_help.war ibi_help-orig.war
cd ibi_help/WEB-INF (exploded directory already exists)
```

Create the jboss-classloading.xml file with the following:

```
<?xml version="1.0" encoding="UTF-8"?>
<classloading xmlns="urn:jboss:classloading:1.0" name="ibi_help.war"
domain="ibi_help.war" export-all="NON_EMPTY" import-all="true"
parent-first="false"
/>
```

```
cd ..
jar cf ../ibi_help.war .
cd ..
```

WebFOCUS will create the new war file as `ibi_apps.war` to pick up the correct context root, rather than add additional JBoss syntax to the xml files:

```
cd webfocus/WEB-INF (exploded directory already exists)
```

Create the `jboss-classloading.xml` file with the following:

```
<?xml version="1.0" encoding="UTF-8"?>
<classloading xmlns="urn:jboss:classloading:1.0" name="ibi_apps.war"
domain="ibi_apps.war" export-all="NON_EMPTY" import-all="true"
parent-first="false"
/>
```

Create the `WEB-INF/jboss-deployment-structure.xml` file with the following:

```
<jboss-deployment-structure>
  <deployment>
    <!-- Exclusions allow you to prevent the server from automatically
adding some dependencies -->
    <exclude-subsystems>
      <subsystem name="jpa" />
    </exclude-subsystems>
    <exclusions>
      <module name="org.apache.log4j" />
      <module name="org.apache.commons" />
      <module name="org.apache.http" />
      <module name="javaee.api" />
      <module name="javax.persistence.api" />
      <module name="org.hibernate" />
    </exclusions>
    <dependencies>
      <module name="javax.activation.api" export="true"/>
      <module name="javax.annotation.api" export="true"/>
      <module name="javax.ejb.api" export="true"/>
      <module name="javax.el.api" export="true"/>
      <module name="javax.enterprise.api" export="true"/>
      <module name="javax.enterprise.deploy.api" export="true"/>
      <module name="javax.inject.api" export="true"/>
      <module name="javax.interceptor.api" export="true"/>
      <module name="javax.jms.api" export="true"/>
      <module name="javax.jws.api" export="true"/>
      <module name="javax.mail.api" export="true"/>
      <module name="javax.management.j2ee.api" export="true"/>
      <module name="javax.resource.api" export="true"/>
      <module name="javax.rmi.api" export="true"/>
      <module name="javax.security.auth.message.api"
export="true"/>
    </dependencies>
  </deployment>
</jboss-deployment-structure>
```

```

<module name="javax.security.jacc.api" export="true"/>
<module name="javax.servlet.api" export="true"/>
<module name="javax.servlet.jsp.api" export="true"/>
<module name="javax.transaction.api" export="true"/>
<module name="javax.validation.api" export="true"/>
<module name="javax.ws.rs.api" export="true"
    services="export"/>
<module name="javax.xml.bind.api" export="true"/>
<module name="javax.xml.registry.api" export="true"/>
<module name="javax.xml.soap.api" export="true"/>
<module name="javax.xml.ws.api" export="true"/>
<module name="javax.api" export="true"/>
</dependencies>
</deployment>
</jboss-deployment-structure>

```

Edit the file `web.xml` and comment out the distributable tag by changing:

```
<distributable></distributable>
```

to the following:

```

<!-- <distributable></distributable> -->
cd ..
jar cf ../ibi_apps.war .
cd ..

```

Deploying and Undeploying the WebFOCUS Web Application Files

In JBoss EAP 6.0.x or 6.2.x, you can either use the Administration Console or the command line to deploy the WebFOCUS web application files. Using the Console requires transferring the war files to the system running the browser. The following demonstrates using the command line interface.

Deploy (the applications start as soon as they are deployed):

```

cd install_dir/bin
./jboss-cli.sh --connect --controller=localhost:9999 (or the new Management
native port if it was modified)
[standalone@localhost:9999 /] deploy
WF_install_dir/ibi/WebFOCUS82/webapps/approot.war
[standalone@localhost:9999 /] deploy
WF_install_dir/ibi/WebFOCUS82/webapps/ibi_html.war
[standalone@localhost:9999 /] deploy
WF_install_dir/ibi/WebFOCUS82/webapps/ibi_help.war
[standalone@localhost:9999 /] deploy
WF_install_dir/ibi/WebFOCUS82/webapps/ibi_apps.war
[standalone@localhost:9999 /] exit

```

Undeploy (the applications are stopped when they are undeployed):

```
cd install_dir/bin
[standalone@localhost:9999 /] undeploy approot.war
[standalone@localhost:9999 /] undeploy ibi_html.war
[standalone@localhost:9999 /] undeploy ibi_help.war
[standalone@localhost:9999 /] undeploy ibi_apps.war
[standalone@localhost:9999 /]
exit
```

Post-Installation Verification and Configuration

This chapter explains verification and common configuration procedures.

In this chapter:

- ❑ [WebFOCUS Post-Installation Tasks](#)
- ❑ [WebFOCUS Repository Post-Installation Tasks](#)

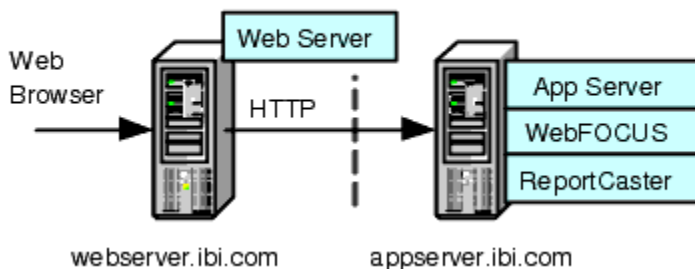
WebFOCUS Post-Installation Tasks

This chapter explains verification and common configuration procedures for the WebFOCUS Client.

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



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*.

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 *install_directory/ibi/WebFOCUS82/webapps* directory, which are designed to serve static content from the file system to the browser:

- ☐ *aproot.war*. Serves content from the *install_directory/ibi/apps* directory.
- ☐ *ibi_html.war*. Serves content from the *install_directory/ibi/WebFOCUS82/ibi_html* directory.

Deploy one or both of these applications to address the following split web-tier and stand-alone application server configurations:

- ☐ The web server is unable to access the static content because it is located on the application server machine.
- ☐ There is no web server and you wish to use an application server by itself.

Note: Tomcat can be used by itself without these applications because it can map a directory on the file system to a context path.

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/WebFOCUS82/config*, which contains the configuration file *aprootConfig.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/WebFOCUS82/logs/wfaproot.log* and *install_directory/ibi/WebFOCUS82/logs/wfibihtml.log*, respectively.

The content server applications roll the log files over daily by appending the date to the log file and creating a new one (for example, *wfibihtml.log.2016-01-01*). You can increase the log level by editing *install_directory/ibi/WebFOCUS82/config/aprootConfig.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"/>
```

3. Edit the WebFOCUS log4j.xml file located inside the ibi_html.war file and replace the fully qualified path specified by the File parameter, as follows:

```
<param name="File" value="${IBIARLOG}/wfibihtml.log"/>
```

4. Add the following -D options in the manner appropriate for the Java VM for your application server.

The settings below are slightly different in a clustered web-tier environment.

```
-DIBIARCFG=install_directory/ibi/WebFOCUS82/config
-DIBIARLOG=install_directory/ibi/WebFOCUS82/logs
```

WebFOCUS Client Verification and Configuration

To configure the WebFOCUS Client, edit files either through a text editor or the WebFOCUS Administration Console. The WebFOCUS Administration Console also provides tools to verify the installation.

For NLS configuration information, see the *WebFOCUS Security and Administration* manual.

Accessing the WebFOCUS Welcome Page

WebFOCUS 8.2 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:

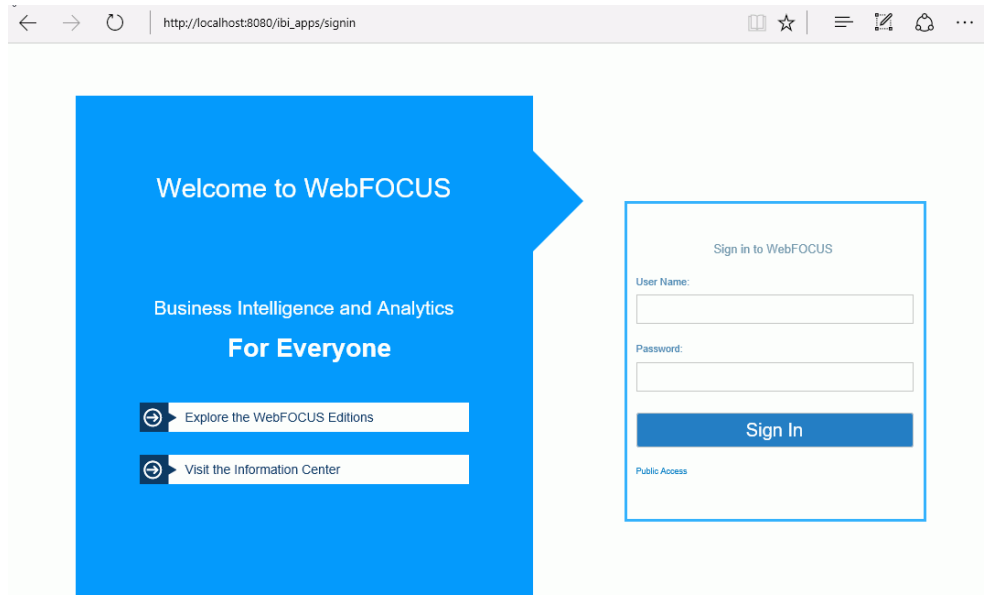
`http://hostname:port/ibi_apps/`

where:

`hostname:port`

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

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



Note: If you receive a *page not found* error, ensure that your application server is started and that you have deployed the WebFOCUS application. For more information on configuring your application server, see [Installing the WebFOCUS Client](#) on page 57.

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.



You can change the default credentials using the Security Center facility. Click *Administration* from the top menu, and then select *Security Center*. For more information, see the *WebFOCUS Security and Administration* manual.

Accessing the WebFOCUS Administration Console

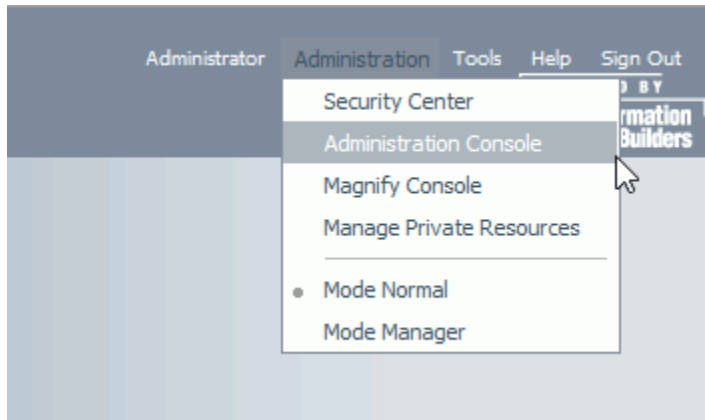
You can access the WebFOCUS Administration Console from the WebFOCUS Welcome page, or you can access the WebFOCUS Administration Console directly from the browser by supplying its URL.

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.

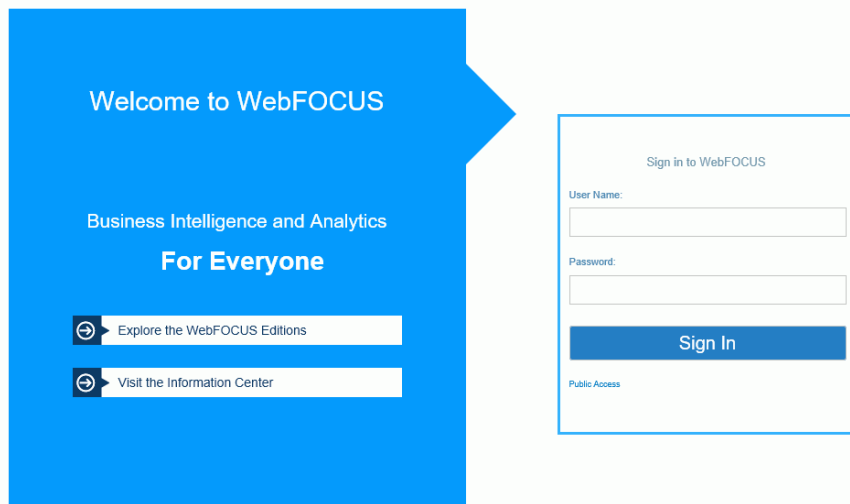
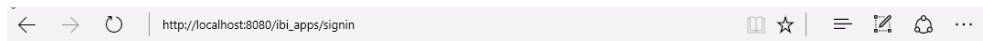
2. Sign in to the WebFOCUS Welcome page, then click *Administration* from the top menu and select *Administration Console*, as shown in the following image.



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.

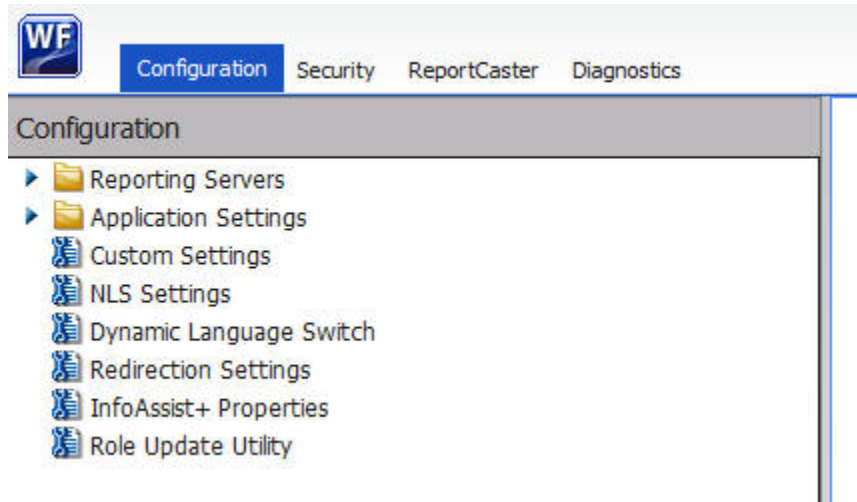


If a sign-in page does not appear, ensure that your web server and application server are started and configured.

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.



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.

Procedure: How to Run the Verification Tool

1. Select the *Diagnostics* tab.
2. Click *Client Verification*.
3. Review the test results and troubleshoot accordingly.

For troubleshooting assistance, see [Troubleshooting WebFOCUS and ReportCaster](#) on page 145.

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:

`/install_directory/ibi/WebFOCUS82/client/wfc/etc/odin.cfg`

This file contains node blocks defining WebFOCUS Reporting Servers that the client accesses. A node block is a set of parameters that define a server, listener, or other communication component.

When you installed the WebFOCUS Client, you specified a default WebFOCUS Reporting Server that the client accesses.

To change connection information for the default server or define additional servers, use the procedures that follow.

Procedure: How to Define WebFOCUS Reporting Servers

1. On the left pane of the WebFOCUS Administration Console, expand *Reporting Servers*.
2. Expand *Server Connections*.

The left pane displays all defined WebFOCUS Reporting Servers. To edit parameters of a defined WebFOCUS Reporting Server, right-click the node and select *Edit*.

3. To define an additional node, right-click *Server Connections* and select *New*.
4. Enter a unique name for the new node. Use this name when you wish to access the server.

This page lets you choose to define a single server (*Client*), *CLM Processing*, or a *Cluster* node. A cluster node is a node that consists of multiple servers. When the client accesses the cluster, it chooses one of the servers in that cluster. This is used for load balancing and failover. The best way to use clusters is through the Cluster Manager component that you can optionally add to your WebFOCUS environment.

5. Click *Next*.
6. Complete the *HOST* and *PORT* fields.

The remaining fields are optional in most environments.

Note: Setting the User ID and Password here is not recommended and may not have the desired result.

7. Click *Save*.
8. On the top of the page, click *Clear Cache* so your changes take effect.

Procedure: How to Set the Default WebFOCUS Reporting Server

When you make a connection from client to server without specifying a server, the default server is used. The default server and many other settings are set in the following file:

`/install_directory/ibi/WebFOCUS82/client/wfc/etc/cgivars.wfs`

1. From the Administration Console, select the *Configuration* tab, expand *Reporting Servers*, and then expand *Server Connections*.
2. Right-click the node name and select *Set as Default*.
3. On the Administration Console menu bar, click *Clear Cache*.

Enabling Active Technologies

Although most WebFOCUS Client features are configured through the WebFOCUS Administration Console, some features are enabled and configured through the WebFOCUS Reporting Server. If you license Active Technologies, you must provide the Active Technologies license code in the WebFOCUS Reporting Server Web Console.

Procedure: How to Enable Active Technologies

1. Sign in to the WebFOCUS Reporting Server Web Console.
This console was introduced in [How to View the Web Console and Test the Server](#) on page 49.
2. Click the *Workspace* tab.
3. Click *License* on the ribbon.
4. Type your Active Technologies license in the *license_active_report* field, and click *Save and Restart Server*.

Active Technologies for Adobe 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:

```
export CLASSPATH=/ibi/srv82/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:

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

Verifying and Troubleshooting Server Side Graphics (PCHOLD)

This section explains how to verify and troubleshoot the most common type of graphs. By default, WebFOCUS graphs are generated through the web or application server using a Java-based graph engine installed with WebFOCUS Client. This is known as Server Side Graphics or PCHOLD. Using this approach, a complete graph file is created on the web or application server and then sent to a browser.

For the graph engine to create Server Side Graphics, you must configure your application server, as explained in [Configuring Web and Application Servers](#) on page 87. To do this, you either set the DISPLAY environment variable or use the headless Java VM option:

❑ **DISPLAY**

If an X Windows Server is available, set a DISPLAY variable to the X Windows Server and ensure the X Server accepts the connection. This supports all WebFOCUS graph options. For more information, see [How to Use Server Side Graphics by Settings DISPLAY](#) on page 127.

❑ **Headless Java VM Option** - GIF files are not supported.

See [How to Use Server Side Graphics With the Headless Java Option](#) on page 128 for more information.

Procedure: How to Use Server Side Graphics by Settings DISPLAY

The DISPLAY variable of your application server must be set to an X server. See [Configuring Web and Application Servers](#) on page 87 for information on setting DISPLAY. This can be set in the .profile of the user ID that runs the application server or the application server startup script. For example:

```
export DISPLAY=xserverHostname:0.0
```

```
export TERM=xterm
```

If your UNIX machine does not have an X server, you can install an X Server on a Windows machine and set DISPLAY to that Windows machine.

In addition, the X Server must accept requests from the web and/or application server. On some UNIX platforms, the X Server is set by default to refuse connections, even when DISPLAY is set to localhost:0. On these machines, one solution is to sign in to the physical machine and start an X session. Then, open a shell and use the xhost command to specify hosts that will connect to the X server. For example:

```
xhost +localhost
```

The xhost command is installed with your X Windows environment and may not be in your PATH by default. After issuing the xhost command, leave this user logged on so that an X session remains running. To protect the machine, lock the display instead of logging off. If a different user needs to sign in to the physical machine or the machine is rebooted, the xhost command should be reissued on sign in and an X session left running.

Procedure: How to Use Server Side Graphics With the Headless Java Option

If an X Server is not available, the headless option can be set. This is a Java VM option and not a WebFOCUS specific feature. It is set at the application server level:

```
-Djava.awt.headless=true
```

Review your application server documentation and see [Configuring Web and Application Servers](#) on page 87. After setting Java options, completely restart your application server.

Note: If you change the default WebFOCUS Graph settings to use SSG_EXTERNAL=YES, then it should also be set through the WebFOCUS Administration Console under *Configuration* and *Graph* in the *IBIJAVACMD* field.

Configuring a Reverse Proxy for Apache Tomcat

If you are planning to use a reverse proxy configuration with an Apache Tomcat application server, you must configure a setting in the server.xml file to ensure that all URL calls use the address of the web-facing proxy server as opposed to the internal server.

Procedure: How to Modify the Apache Tomcat Server.xml File

To modify the server.xml file:

1. Navigate to the following directory:

```
/tomcat_home/conf
```

where:

```
tomcat_home
```

Is the location on your system where Apache Tomcat is installed.

2. Edit the server.xml file.
3. Search for the Coyote/JK2 AJP 1.3 connector block.
4. Add the proxyName and proxyPort parameters, as shown in the following example:

```
<!-- Define a Coyote/JK2 AJP 1.3 Connector on port 8009 -->
<Connector port="8009" enableLookups="false" redirectPort="8443"
    debug="0" protocol="AJP/1.3" proxyName="WEB-FACING_PROXY_SERVER"
    proxyPort="WEB_FACING_PROXY_PORT"/>
```

5. For the proxyName parameter value, specify the host name of the web-facing proxy server.
6. For the proxyPort parameter value, specify the port number of the web-facing proxy server.
7. Save the changes to the server.xml file.
8. Restart the Apache Tomcat application server.

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

This section explains how to create the WebFOCUS Repository.

Caution:

- ❑ If you specified an existing repository during the Distribution Server installation, this utility will erase all of its data. If you wish to preserve this information, run the extract utility, as explained in the *Migration* manual.
- ❑ This utility drops, creates, and/or updates tables using the connection information you specified during the installation. To change this information, see [ReportCaster Configuration](#) on page 135.

Procedure: How to Create the WebFOCUS Repository Tables

To create the Repository tables:

1. Ensure that the database server is available and/or started.
2. From qshell, navigate to the following WebFOCUS Utility directory:
`installation_directory/ibi/WebFOCUS82/Utilities/WFReposUtil`
3. Execute the following command:
`WFReposUtilCMDLine.sh`

The following prompt is displayed:

```
Please select mode option for WFReposUtil:
1\) create           - create non-existing tables
2\) create_or_extend - create tables or add missing columns to tables
3\) insert           - insert data into tables
4\) create_insert    - combo of above
5\) update           - update table data
6\) drop             - drop tables
7\) extract          - export database data to xml files
8\) create_ddl       - generate SQL scripts but not execute them
Q\) Quit
  Enter selection [default=4] :
```

4. Select the default option and press Enter.

If you are installing WebFOCUS for the first time, select option 3. This will load initial values into the WebFOCUS Repository, which are required to begin using the product. This is the default value.

5. You are prompted to choose a logging level for the utility

Please select logging level option for WFReposUtil:

```
1) off
2) severe
3) warning
4) info
5) config
6) fine
7) finer
8) finest
Q) To Quit
```

If selected, the log file named WFReposUtilCmdLine.log will be created in the following directory:

```
/installation_directory/ibi/WebFOCUS82/Utilities/WFReposUtil
```

This utility uses the connection and sign-in information provided during the installation of WebFOCUS. The utility creates .sql files that contain the instructions.

Note:

- ❑ If the utility cannot connect to the database, ensure that the proper path to the JDBC driver appears in the following CLASSPATH value:

```
/installation_directory/ibi/WebFOCUS82/ReportCaster/bin/classpath
```

- ❑ If the WebFOCUS installation program installed and configured Derby, this driver may be located as follows:

```
/installation_directory/ibi/derby/lib/derbyclient.jar
```

If you are using a DB2 repository, then an appropriate driver may be located as follows:

```
/QIBM/ProdData/HTTP/Public/jt400/lib/jt400.jar
```

Consult your database documentation for additional information.

- ❑ If you can connect to the database, but cannot create tables, ensure the ID you entered for the database during the WebFOCUS installation has create permissions. You can change this user ID, as explained in [Post-Installation Verification and Configuration](#) on page 117.

WebFOCUS ReportCaster Post-Installation Tasks

This section explains ReportCaster post-installation tasks.

In this chapter:

- ☐ [ReportCaster Verification](#)
 - ☐ [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 145.

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. If you require SSL, use *https* instead of *http*.

The WebFOCUS Sign In page opens.

Note: If you receive a *page not found* error, ensure that your application server is started and that you have deployed the WebFOCUS application. For more information on configuring your application server, see [Installing the WebFOCUS Client](#) on page 57.

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 opens.

You can change the default credentials using the Security Center facility. To do this, click *Administration* from the top menu and then click *Security Center*. For more information, see the *WebFOCUS Security and Administration* manual.

Starting and Stopping the ReportCaster Distribution Server

This section describes how to start and stop the ReportCaster Distribution Server.

Procedure: How to Start the Distribution Server From the OMVS Shell

To start the Distribution Server, use the following procedure:

1. Navigate to the following directory:

[/install_directory/ibi/WebFOCUS82/ReportCaster/bin](#)

2. Type the following command and press Enter:

```
./schbkr &
```

When the Distribution Server starts, you receive output similar to the following, depending on which components you installed:

```
Console is listening on port: 8200
Reader ready
Dispatcher ready
Console ready
```

When the Console Ready line appears, the Distribution Server is started.

Note: The Distribution Server will start in Console mode if it cannot connect to the repository, or if your repository is for an earlier release. ReportCaster must use a valid 8.2 Repository.

Procedure: How to Stop the Distribution Server

To stop the Distribution Server, do the following:

1. Navigate to the following directory:

```
/install_directory/ibi/WebFOCUS82/ReportCaster/bin
```

2. Type the following command and press Enter:

```
./stopit
```

3. Wait a few minutes. It may take some time for the Distribution Server to stop. Then, issue the following to confirm the Distribution Server has stopped:

```
netstat -a | grep 8200
```

where:

```
8200
```

Is the port for the Distribution Server.

If you receive a response that says LISTEN:

```
tcp          0      0  *:8200          *:*              LISTEN
```

Then the Distribution Server has not yet stopped. Wait a few minutes and try again. If it still has not stopped, you can manually kill the process. To do this, sign in as root and issue

```
netstat -nlp | grep 8200
```

Then, kill the process that appears at the end of the line.

Procedure: How to Start the Distribution Server for Production

When running the Distribution Server in production, you should start it using the nohup command. This ensures that the Distribution Server remains running if you close telnet or SSH sessions. To do this:

- 1. Navigate to the following directory:
`/install_directory/ibi/WebFOCUS82/ReportCaster/bin`
- 2. Type the following command and press Enter:
`nohup ./schbkr &`

Output is written to an nohup.out file.

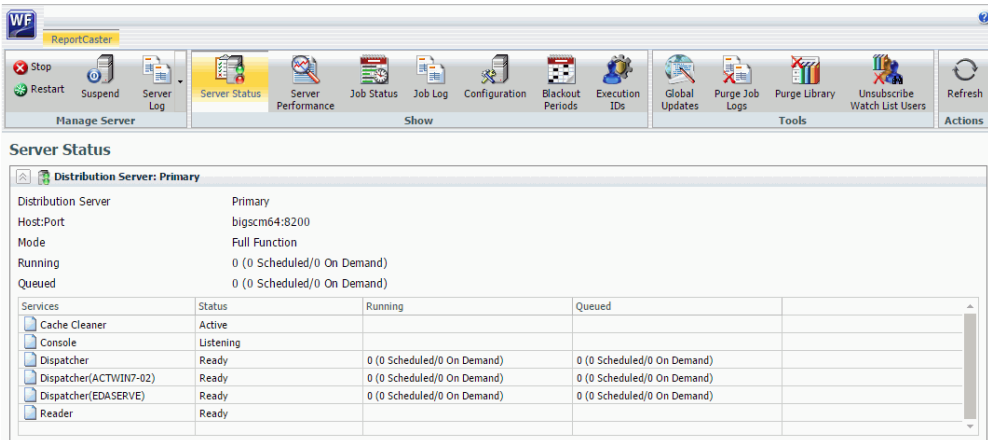
Verifying ReportCaster

After the ReportCaster Distribution Server is started, test the ReportCaster configuration by accessing ReportCaster interfaces.

Procedure: How to Verify ReportCaster Distribution Server Startup

- 1. Start the ReportCaster Distribution Server and all related components, if they are not started.
- 2. Sign in to the WebFOCUS Business Intelligence (BI) Portal, then select *ReportCaster Status* from the Tools menu.

The ReportCaster Console opens, as shown in the following image.



3. Verify that the Distribution Server is started on the host and port specified in your configuration.

ReportCaster Configuration

ReportCaster configuration parameters are managed within the ReportCaster Console Configuration tab. For additional ReportCaster configuration information, see the *ReportCaster* manual.

Changing Configuration Parameters With Scripts

Several scripts allow you to change Distribution Server configuration settings. The Distribution Server cannot start unless it can connect to the repository. If you cannot start the Distribution Server, use these scripts to correct connection settings. The scripts are installed in:

`/install_directory/ibi/WebFOCUS82/ReportCaster/bin`

The following scripts are available:

Script	Purpose
<code>dbname</code>	Changes the DB Name parameter. This parameter is only needed when using a DB2 repository on z/OS.
<code>dbpass</code>	Changes the password used to access the repository.
<code>dbuser</code>	Changes the user ID used to access the repository.
<code>repclass</code>	Changes the JDBC class used to access the repository driver. See Additional WebFOCUS Repository Topics and Tasks on page 167 for information on this value.
<code>repurl</code>	Changes the JDBC URL used to access the repository. See Additional WebFOCUS Repository Topics and Tasks on page 167 for information on this value.

To run a script, execute it at a shell prompt with the first argument being the value you wish to set.

Warning: If a value contains a semicolon (;), you must place that value between quotation marks (" ").

Example: Running Configuration Scripts

If during the installation you typed the wrong user ID and password to access the repository, you can change them as follows.

1. Navigate to the following directory:

```
/install_directory/ibi/WebFOCUS82/ReportCaster/bin
```

2. Execute the following to change the user ID used to access the repository:

```
./dbuser userID
```

where:

```
userID
```

Is the correct user ID to access the repository.

3. Execute the following to change the password used to access the repository:

```
./dbpass password
```

where:

```
password
```

Is the correct password to access the repository.

The other scripts (for example, repurl, repclass) are executed in the same fashion. If your URL or CLASS contains a semicolon (;), place the URL or CLASS between quotation marks when running the scripts.

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
```

You must restart the Distribution Server to enable this change.

Configuring ReportCaster Failover and Workload Distribution

The Distribution Server Failover feature allows you to configure a backup Distribution Server that can resume ReportCaster operations when there is an interruption (planned or unplanned) in the primary Distribution Server service. The primary Distribution Server is monitored to verify that it is operational. If there is an interruption in service, the failover Distribution Server is triggered to take over the role of the primary server.

The Workload Distribution feature allows ReportCaster to distribute scheduled jobs across multiple Distribution Servers, providing an efficient and fast way to process large numbers of ReportCaster schedules. Multiple Distribution Servers can be installed on one or more hosts. One instance is designated as the Workload Manager, while the others are designated as Workers. The WebFOCUS Repository will be shared by the Workload Manager and the Workers. Workload Distribution is set up through the ReportCaster Configuration tool. All servers will share one set of configuration information, and the Workload Manager will push any configuration changes to the Workers.

For your application of ReportCaster, you can configure either Failover or Workload Distribution, or both at the same time. The following procedure includes instructions to configure both, but notes when to skip to the appropriate steps if you are only configuring one or the other.

Procedure: How to Configure Distribution Server Failover

To configure distribution server failover:

1. Open the ReportCaster Console and click *Configuration* in the top pane.
2. Click the *Distribution Servers* folder in the left pane.
3. Click the button to the right of the Secondary Distribution Server field.

The Secondary Distribution Server dialog box opens.

4. Select the *Enabled* check box.

5. Enter the host name and port number of the Secondary server.
6. Click *OK*.
7. Click *Save* and then *OK* when you are prompted to save.
8. Install the Distribution Server on the specified host with the specified port number for that host.

***Procedure:* How to Configure Workload Distribution**

To configure workload distribution:

1. Open the ReportCaster Console and click *Configuration* in the top pane.
2. Click the *Distribution Servers* folder in the left pane.
3. Click the button to the right of the Workload Distribution field.

The Workload Distribution dialog box opens.

4. Select the *Enabled* check box.
5. Click *Add*.
6. Double-click the *Worker Name*, *Worker Distribution Server Host*, and *Worker Distribution Server Port* fields to add the new Worker Distribution Server.

Repeat this step for each Worker Distribution Server instance that you want to add.

7. Click *OK*.
8. Click *Save* and then *OK* when you are prompted to save.
9. Install the Distribution Server on each of the specified hosts with the specified port number for that host.

Adding Support for UTF-8 to the Distribution Server

Support for UTF-8 can be added to the Distribution Server by adding `-Dfile.encoding=UTF8` to the Distribution Server Java command. If the Distribution Server is being run from the command line, modify the `schbkr` script file and add `-Dfile.encoding=UTF8` to the Java command.

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 ibi/WebFOCUS82/webapps/webfocus/WEB-INF/conf folder.

The following code is an example of a second AxisServletListener.

```
<transportReceiver name="https"
class="org.apache_1_6_2.axis2.transport.http.AxisServletListener">
<parameter name="port">8443</parameter>
</transportReceiver>
```

For more information, see

<http://axis.apache.org/axis2/java/core/docs/servlet-transport.html>

Configuring ReportCaster for Graphs

In order for ReportCaster to distribute graphs, you must either set DISPLAY or use the headless option. This is similar to the Server Side Graphics configuration discussed in [Verifying and Troubleshooting Server Side Graphics \(PCHOLD\)](#) on page 126.

Procedure: How to Configure ReportCaster for Graphs

The procedure for distributing graphs will depend on whether you have an X Windows Server.

To distribute graphs, do one of the following:

- ☐ If you have an X Windows Server, you can set the DISPLAY variable to the X Server host name. Ensure that the X Server accepts the connection. You can set this by editing the following file:

[/install_directory/ibi/WebFOCUS82/ReportCaster/bin/schbkr](#)

Add a line to export the DISPLAY variable. For example:

```
#!/bin/ksh
export DISPLAY=localhost:0
CLASSPATH=/usr/local/drivers/ojdbc15.jar:
/home/wf82/ibi/WebFOCUS82/ReportCaster/lib/SCHScheduler.jar
export CLASSPATH
java ibi.broker.SCHScheduler /home/wf82/ibi/WebFOCUS82/ReportCaster
```

- ☐ If you do not have an X server, you can set the headless Java option when the Distribution Server starts. However, this does not support GIF graphs or the older GRAPH32 engine. To set this, edit the following file:

```
/install_directory/ibi/WebFOCUS82/ReportCaster/bin/schbkr
```

This is current file.

```
#!/bin/ksh
. /users/mktrgm/ibi/WebFOCUS82/ReportCaster/bin/classpath
"/users/mktrgm/installsoft/JavaJDKLinuxx64/jdk1.8.0_102/bin/java" -
Dreportcaster.home=$DSINSTALL -Dcaster.service=false -DDSINSTALL_PROD=
$DSINSTALL_PROD ibi.broker.SCHScheduler $DSINSTALL $CMD_LINE_ARGS
```

Place the headless option after the java command as shown in the following example.

```
#!/bin/ksh
. /users/mktrgm/ibi/WebFOCUS82/ReportCaster/bin/classpath
"/users/mktrgm/installsoft/JavaJDKLinuxx64/jdk1.8.0_102/bin/java" -
Djava.awt.headless=true -Dreportcaster.home=$DSINSTALL -Dcaster.service=false -
DDSINSTALL_PROD=$DSINSTALL_PROD ibi.broker.SCHScheduler $DSINSTALL $CMD_LINE_ARGS
```

Business Intelligence Portal Verification and Security

This chapter explains how to verify and secure WebFOCUS Business Intelligence Portal.

If you do not use WebFOCUS Business Intelligence Portal, proceed to [Troubleshooting WebFOCUS and ReportCaster](#) on page 145.

In this chapter:

- ❑ [Verifying and Configuring WebFOCUS Business Intelligence Portal](#)
-

Verifying and Configuring WebFOCUS Business Intelligence Portal

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

BI Portal enables you to build complete, modern websites with multi-levels of navigation. You can have as many levels as you like.

Content is dynamic and end users experience the click-and-drag behavior that they are familiar with in popular online portals. This is a key feature, as end users do not need to learn anything new.

While at work, people should have the same satisfying experiences that they have every day when reading news, reading email, and performing other activities. With BI Portal, the result is zero product training and a high usage rate.

With this product, a portal is easy to build. BI Portal uses the same familiar ribbon interface as the WebFOCUS InfoAssist report development tool. Building a portal is just a matter of a few clicks and click-and-drag actions. With BI Portal, anyone who can build a report using InfoAssist can develop an impressive portal without any knowledge of web design. For more information on BI Portal, see the *Business Intelligence Portal* manual. For questions regarding licensing, contact your Information Builders branch representative.

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

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

WebFOCUS Business Intelligence Portal Verification

It is recommended to access the BI 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. If you require SSL, use https instead of http.

The WebFOCUS Sign In page opens.

3. Sign in as an administrator. The default user name and password are *admin* and *admin*, respectively.

By default, BI Portal accounts are created and administered from within the Security Center interface and are not related to the accounts used for the WebFOCUS Reporting Server. This default sign-in behavior can be customized using the procedures and steps detailed in the *WebFOCUS Security and Administration* manual.

The WebFOCUS Business Intelligence Portal Welcome page opens in your web browser.

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. Set a new password and email address for the admin account as follows. If you use both Report Library and Managed Reporting, this is required.
 - a. Select *Security Center* from the Administration menu.

The Security Center opens.
 - b. Right-click a user name and select *Edit* from the context menu.

The Edit User dialog box opens, as shown in the following image.

- c. Enter an email address to use for the administrator in the EMail Address field.
- d. Click *Set Password*.

The Set Password dialog box opens.

- e. Set and confirm the password. If you use ReportCaster, this should match the password you set for the ReportCaster Administrator in [Verifying ReportCaster](#) on page 134.
- f. Click *OK*.

You are returned to the Edit User dialog box.

- g. Click *OK*.

You are returned to the Security Center dialog box.

- h. Click *Close*.

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

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 [How to Verify the WebSphere Application Server is Configured to Run Java 1.7 or 1.8](#) on page 96.

Troubleshooting WebFOCUS and ReportCaster

This chapter contains information for tracking errors and debugging problems.

Since much of 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 87.

If you encounter any problems with ReportCaster, read the entire [ReportCaster Troubleshooting Tips](#) on page 152 section 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 call your local Information Builders representative.

In this chapter:

- ☐ [WebFOCUS Troubleshooting Tips](#)
 - ☐ [ReportCaster Troubleshooting Tips](#)
-

WebFOCUS Troubleshooting Tips

Troubleshooting WebFOCUS requires considering 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
- ☐ X Windows Server when creating graphics by setting DISPLAY
- ☐ WebFOCUS Reporting Server
- ☐ ReportCaster Context Root

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 all components are started and listening on their expected ports. The WebFOCUS web application may take some time to load.
3. Ensure you typed 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:

```
/install_directory/ibi/srv82/wfs/etc/edasprof.prf
```

This may be the problem if you receive a *Resource not found* message.

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 appear, such as *file not found*.
7. Turn on tracing through the WebFOCUS Administration Console.
8. Clear the cache in your application server after completing the upgrade installation. For example, if you are using Apache Tomcat, the cache can be cleared by manually deleting any subdirectories that correspond to the context roots that you deployed (for example, */ibi_apps*, */ibi_html*, and */ibi_help*), which are located in the following directory:

```
/tomcat_home/work/Catalina/localhost
```
9. In the WebFOCUS Administration Console, click *Diagnostics* on the left and use the available options to troubleshoot.
10. Restart all components, especially your web and/or application servers.

Web Browser Issues

If you are planning to use WebFOCUS products, note that browsers released after the production date of a WebFOCUS version are subject to certification. Certification is done with the current release level of WebFOCUS and App Studio. For additional information, see *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

JVM Support Issue with IBM WebSphere Application Server

WebFOCUS 8.2 requires Java VM Version 7 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. Select the *Diagnostics* tab.
3. Select *JVM Property Info*.

The version is listed under `java.runtime.version`.

☐ From a browser, type the following URL:

http://hostname:port/ibi_apps/diagnostics/properties.jsp

The version is listed under `java.vm.version`.

Web and Application Server Debugging

Ensure your web and application servers are configured as explained in *Configuring Web and Application Servers* on page 87.

Since WebFOCUS relies on processing by the Java VM, web server, and application server (or servlet container), 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.

Java Memory Issues

Setting some Java VM options can improve performance and correct problems with the application server. The most common settings 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.

If you run into performance problems or receive out of memory exceptions, you can adjust these sizes. The following are the most common Java VM options related to memory settings. Replace the ### with the size you wish to set:

`-Xss###M`

Sets the Java thread stack size.

`-Xmx###M`

Sets the maximum Java heap size.

`-Xms###M`

Sets the initial Java heap size. This should be at least 1024 MB (1 GB).

The size is normally set in Megabytes, for example:

`-Xms1024M`

`-Xmx2048M`

To view your current Java VM memory settings, access the WebFOCUS Administration Console. In the left pane of the console, select the *Diagnostics* tab and then select *JVM Property Info*.

The Java VM memory settings for your environment are displayed in the right pane, as shown in the following image.

Memory Information (K)

Type	Pool Name	Current Used	Peak Used	Initial	Committed	Maximum	Threshold Count
Heap	*	427,524	~	524,288	779,776	932,352	~
	PS Eden Space	241,433	290,816	131,584	254,976	283,136	n/a
	PS Survivor Space	16,209	44,534	21,504	33,792	33,792	n/a
	PS Old Gen	169,881	169,881	349,696	491,008	699,392	0
Non-Heap	*	171,193	~	2,496	175,680	0	~
	Code Cache	55,040	55,390	2,496	55,872	245,760	0
	Metaspace	104,448	104,448	0	107,520	0	0
	Compressed Class Space	11,704	11,704	0	12,288	1,048,576	0

Note: To set Initial Heap and Maximum Heap size, use the following JVM startup parameters:
 -Xms256m will set the Initial Heap size to 256Mb
 -Xmx256m will set the maximum Heap size to 256Mb
 -XX:MaxPermSize=128m will set the maximum Perm Gen Size to 128Mb

Note: For Development environments, you can set Xms to a value less than Xmx, so memory is acquired dynamically.
 In a production environment, it is recommended that Xms be equivalent to Xmx, and that this value is 1/4 of available memory.
 If deploying multiple versions of WebFOCUS within the same JVM, MaxPermSize should be 128m, per deployed WebFOCUS application.

System Properties:

awt.toolkit	sun.awt.X11.XToolkit
catalina.base	/bigscm/592/bi/tomcat
catalina.home	/bigscm/592/bi/tomcat
catalina.useNaming	true
common.loader	"\${catalina.base}/lib","\${catalina.base}/lib/*-jar","\${catalina.home}/lib","\${catalina.home}/lib/*-jar"
file.encoding	ISO-8859-1

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.

Character Set Issues

WebFOCUS and ReportCaster expect an ISO8859-1 based character set. However, some systems may default to using Unicode (ISO 10646/UTF-8) instead. If this is the case, some characters, such as subscripts, may appear as a question mark (?) or other unexpected symbols in your reports. To correct this, set the LANG environment variable to specify the correct ISO8859-1 character set for your language. On Solaris systems, also set the LC_ALL environment variable to specify the correct ISO8859-1 character set. For example, English on Solaris is:

```
export LANG=en_US.ISO8859-1
export LC_ALL=en_US.ISO8859-1
```

Set the LANG and LC_ALL variables so they are available to the Java VM running your application server and Distribution Server. Where to set this varies depending on your application server, but you can normally export and set the variables in the application server startup script. For the Distribution Server, you can export and set this in schbkr script.

Using the jar Utility

A jar 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.war file contents.

Procedure: How to Edit the WebFOCUS Web Application

The WebFOCUS web application is provided as both an expanded directory and a WAR file:

```
/install_directory/ibi/WebFOCUS82/webapps/webfocus.war
```

```
/install_directory/ibi/WebFOCUS82/webapps/webfocus
```

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. Navigate to the webfocus directory. For example:

```
/install_directory/ibi/WebFOCUS82/webapps/webfocus
```

5. 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 "../".

6. Redeploy the WebFOCUS web application to your application server.

You can edit the ReportCaster web application in the same fashion.

Procedure: How to Execute the jar Utility

The options for using the jar commands are useful to know.

- ❑ To create a new jar file:

```
jar cvf FileToCreate.war FileToAdd1 FileToAdd2
```

You can add all files and subdirectories using an *:

```
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
```

Silent Installation Path Issues

A path issue can generate an error during the silent installation of a distribution server.

When running the silent parameter file, you may see the following messages:

```
./install[924]: var_asgn_file: not found.
```

To solve this problem, you must add . (dot) to your UNIX PATH statement.

This is an example of the syntax:

```
export PATH=.:$PATH
```

Verifying the setting should show new path as:

```
.: /usr/java7/jre/bin:/usr/bin
```

You should then be able to run the silent installation.

ReportCaster Troubleshooting Tips

ReportCaster relies on communications between the following components:

- ☐ Web browser (for user interfaces)
- ☐ ReportCaster Web components
- ☐ ReportCaster Distribution Server
- ☐ Database server
- ☐ 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. All components can run on one machine or components 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.

The ReportCaster Distribution Server starts in Console mode if it cannot connect to the repository. The ReportCaster Distribution Server will also start in Console mode if it can connect to the repository but the tables are not created. The Scheduler log file indicates why the Distribution Server started in Console mode. If you need to change repository parameters, refer to [ReportCaster Configuration](#) on page 135.

Note: The ReportCaster web components, WebFOCUS Reporting Server, and ReportCaster Distribution Server must all be the same release number.

Distribution Server Traces

Normally, you should turn the Distribution Server traces on and off using the ReportCaster Server Configuration interface. However, if the interface is not available, you can execute the following utility:

```
/install_directory/ibi/WebFOCUS82/ReportCaster/bin/traces
```

The trace files appear in */install_directory/ibi/WebFOCUS82/ReportCaster/trc*. In addition, check the log files in */install_directory/ibi/WebFOCUS82/ReportCaster/log* for more information.

Remember to turn traces off after solving problems.

Troubleshooting Web Browser Errors

To use the ReportCaster Development and Administration interface, end users must have Java 7 or higher installed on their machines. The web browser of the user must be configured to use this Java VM to process applets.

Be aware that when end users schedule reports, the default time they see is in part determined by the system time and Java VM on the end user machines. If this is incorrect, try updating the end-user Java VM plug-ins to Java 1.8.0_102. Earlier Java releases might not adjust for the recent changes in U.S. daylight savings time.

Troubleshooting ReportCaster Servlet Errors

Review the installation and configuration instructions in [Installing the WebFOCUS Client](#) on page 57 and [Configuring Web and Application Servers](#) on page 87.

- ☐ Ensure your web and application servers are running.
- ☐ Ensure the WebFOCUS web application is installed and configured. The ReportCaster components are part of the WebFOCUS web application installed with the WebFOCUS Client.

[/install_directory/ibi/WebFOCUS82/webapps/webfocus](#)

Troubleshooting ReportCaster Distribution Server Errors

Review the installation and configuration instructions in [Installing the WebFOCUS Client](#) on page 57, [WebFOCUS Repository Post-Installation Tasks](#) on page 129 and [WebFOCUS ReportCaster Post-Installation Tasks](#) on page 131 .

- ☐ Ensure the ReportCaster Distribution Server is running.
- ☐ Ensure the WebFOCUS web application knows where the Distribution Server is. The AGENT_NODE and AGENT_PORT parameters specify the host name and TCP Port for the Distribution Server in files installed with WebFOCUS Client:

[/install_directory/ibi/WebFOCUS82/client/wfc/etc/cgivars.wfs](#)

[/install_directory/ibi/WebFOCUS82/webapps/webfocus/WEB-INF/web.xml](#)

If the parameters are incorrect in these files, correct them. If you deployed the expanded webfocus directory, redeploy the directory. If you deployed the webfocus.war file, use the jar command to place this web.xml file into the WEB-INF directory inside the webfocus.war file, and then redeploy the webfocus.war file. See [Using the jar Utility](#) on page 150 for more information.

- ❑ Ensure Java JDK 7 is properly installed and configured.
- ❑ Check the settings in the following file:

`/install_directory/ibi/WebFOCUS82/ReportCaster/install.cfg`

This file records the information provided when you installed the Distribution Server. To change this information, use the ReportCaster Server Configuration interface or the scripts described in [ReportCaster Configuration](#) on page 135.

Troubleshooting Repository Errors

Review the installation and configuration instructions in [Installing the WebFOCUS Client](#) on page 57 and [WebFOCUS ReportCaster Post-Installation Tasks](#) on page 131.

- ❑ Ensure the database server is running.
- ❑ Ensure the database and tables exist.
- ❑ Ensure that the Distribution Server machine contains the correct information to connect to the database. You can set this information using the ReportCaster Server Configuration interface.
- ❑ Ensure the JDBC driver is installed on the WebFOCUS Client and ReportCaster Distribution Server machines.
- ❑ Ensure your application server 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:

`/install_directory/ibi/WebFOCUS82/webapps/webfocus/WEB-INF/lib`

If you deployed the expanded directory, redeploy it. If you deployed the webfocus.war file, use the jar command to insert the driver files or create a new web application as explained in [Using the jar Utility](#) on page 150. Then redeploy the WAR file.

- ❑ Ensure the Distribution Server has the correct CLASSPATH to the JDBC driver in:

`/install_directory/ibi/WebFOCUS82/ReportCaster/bin/classpath`

Troubleshooting ReportCaster Context Root

Applications containing a hardcoded reference to rcaster or a ReportCaster specific context root will encounter an error. There is a new war file for customers that will redirect to the new ibi_apps without having to change their code.

Redirecting Web Applications With the ReportCaster Context Root

In WebFOCUS 8.2, the WebFOCUS and ReportCaster web applications have been combined into one web application. In prior releases, the two applications were deployed separately with unique context roots whose default values were `ibi_apps` and `rcaster`. In WebFOCUS 8.2, there is only one context root for WebFOCUS and ReportCaster with a default value of `ibi_apps`.

However, customers who have web applications that contain hardcoded references to `rcaster` in the URL or a ReportCaster specific context root will be affected. To resolve this, deploy the `redirect.war` file to redirect URLs that reference `rcaster` or a ReportCaster specific context root to the single context root.

Troubleshooting Reporting or Delivery Errors

Review the WebFOCUS and ReportCaster documentation and 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.

Magnify Configuration

This section describes how to configure Magnify.

In this appendix:

- ❑ [Installing Magnify on UNIX and z/OS](#)
 - ❑ [Prerequisites](#)
 - ❑ [Optimizing the Magnify Environment](#)
 - ❑ [Security](#)
-

Installing Magnify on UNIX and z/OS

The UNIX and z/OS installation is text-based, meaning you are prompted for various information on a text line as you move through the installation.

During the installation, after typing the WebFOCUS license code, you are prompted for the Magnify license code. Enter the license code and continue with the WebFOCUS installation as usual.

Once Magnify is installed, you are ready to perform the configuration tasks.

Prerequisites

Magnify requires an application server (for example, Tomcat or WebSphere) in order to read and write to index libraries. It can be installed on a Windows (64-bit preferred) or UNIX/Linux-based server, using the same language as the WebFOCUS Client.

Processing should be at least a dual-core machine. However, four CPUs are generally recommended. Moreover, a minimum of 8GB in memory is required, while 16GB is usually recommended. Depending on the size of the data, storage space should be anywhere between 250GB to 1TB or higher (it is usually estimated as three times the size of the expected data set).

Note: This all varies depending on the type of search-based application being proposed. Indexing frequency, volume of data, and concurrent usage affect how storage space and memory are allocated. Therefore, the use of a split-tier environment is recommended for a Magnify platform where the Reporting Server, Magnify, and each data source are each provided with their own dedicated resources. Magnify does scale in order to accommodate any environment.

The following are the prerequisites to configuring and using Magnify:

- ❑ WebFOCUS 8.2 Client (with a Magnify license)
- ❑ Application Server (for example, Tomcat or WebSphere)
 - Note:** For more information, see the *WebFOCUS Security and Administration* manual.
- ❑ Java Development Kit (JDK) version 7 or higher
- ❑ iWay Service Manager 5.5 SP1 or higher. (We recommend using SP2.)

Optimizing the Magnify Environment

When indexing large documents, we recommend that you change the application server limits for files that it accepts through an HTTP POST operation.

For example, in the Tomcat application server, the `maxPostSize` parameter can be updated in `/path/tomcat/conf/server.xml` to remove the limit, as follows:

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

The default value for `maxPostSize` is 2097152 (2 megabytes). If this limit is exceeded, the following error is written in the Tomcat log:

```
java.lang.IllegalStateException: Post too large
at org.apache.catalina.connector.Request.parseParameters(Request.java:2368)
at org.apache.catalina.connector.Request.getParameter(Request.java:1005)
```

Security

Magnify integrates with most enterprise security frameworks to control accessibility to sensitive information. Security can be configured in many ways to address varied security strategies. Security plug-ins extend the ability of Magnify to authenticate users and authorize the data to which they can have access.

Magnify security is maintained through the WebFOCUS Client Security architecture. Accessing a secure report requires login credentials. When Magnify uses Lucene, security rules added to the indexed data trigger an external security program (security exit) that determines user authentication and data authorization.

Additional Graph Configuration Options

This appendix explains how to configure WebFOCUS graph options. For ReportCaster to distribute graphics in a PDF, you must review the HOLD options.

In this appendix:

- ❑ [Graph Options](#)
 - ❑ [Graph Invocation and Generation Options](#)
 - ❑ [PCHOLD \(Server Side\) Graphics Overview](#)
 - ❑ [Configurations for HOLD Graphics](#)
-

Graph Options

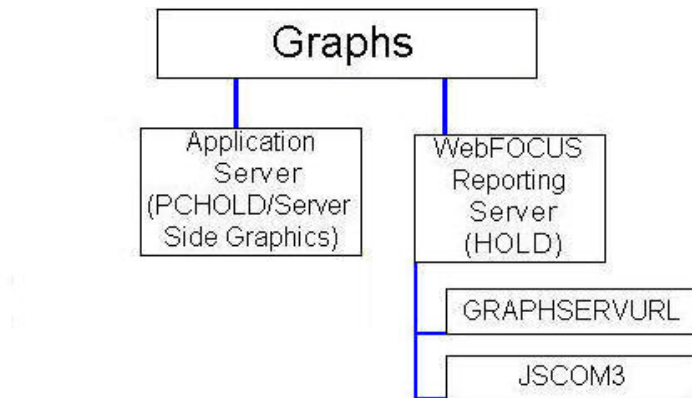
Server-side WebFOCUS graphs are generated by a Java-based graph engine installed with WebFOCUS components. GRAPH53 is the server-side WebFOCUS graph engine. It contains support for many different graph types and advanced 3D graph options. HTML5 graphs are also available. HTML5 graphs are created as Java code that runs directly in the browser,

Graph Invocation and Generation Options

There are several ways to create WebFOCUS graphs.

- ❑ Using FORMAT JSCHART to generate HTML5 graphs. HTML5 graphs are delivered to the browser as java code and run in the browser.
- ❑ On the web or application server (Server Side Graphics/PCHOLD), as explained in [PCHOLD \(Server Side\) Graphics Overview](#) on page 162.

- ❑ On the WebFOCUS Reporting Server (HOLD), as explained in [HOLD Graphs Overview](#) on page 163.



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.

In order for the application server to generate the graphs, you must configure the application server environment. You can set the DISPLAY environment variable to an X Windows Server or you can use set the Java VM headless option.

For information on DISPLAY versus headless and their configuration steps, see [Configuring Web and Application Servers](#) on page 87 and [Verifying and Troubleshooting Server Side Graphics \(PCHOLD\)](#) on page 126.

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.

❑ **GRAPHSESVURL**

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.

GRAPHSESVURL 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 GRAPHSESVURL is not set in `cgivars.wfs` or a procedure. It can also be used if GRAPHSESVURL is overridden in a procedure. It is not used if you set an `IBIJAVAPATH` environment variable.

Configurations for HOLD Graphics

When using PCHOLD, a procedure is invoked on the WebFOCUS Reporting Server and the server accesses data sources to determine values. These values are usually passed back to the WebFOCUS Client on the web or application server and the client uses the graph engine to create graphics.

When using HOLD, after a procedure is invoked and the values determined, the WebFOCUS Reporting Server uses the graph engine to create the graphics itself or makes an HTTP call to the web server.

Using a HOLD can be specified in a procedure, as shown in the following example.

Example: Creating a Sample Procedure for HOLD

To test whether HOLD works in your environment, create a procedure like the following:

```
APP HOLD BASEAPP
GRAPH FILE CAR
SUM SALES
BY COUNTRY
ON GRAPH HOLD AS HOLDTEST FORMAT PNG
END
```

Save this procedure in the `ibisamp` directory on the WebFOCUS Reporting Server machine. For example:

```
/install_directory/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 `GRAPHSESVURL` 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 GRAPHSESVURL= " "
```

Configuring GRAPHSESVURL

No special configuration is needed to use `GRAPHSESVURL`, provided you have deployed the WebFOCUS web application to your application server. `GRAPHSESVURL` 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 GRAPHSESVURL=http://hostname:port/ibi_apps/IBIGraphServlet
```

where:

```
hostname:port
```

Are the host name and port of the web server or application server.

`GRAPHSESVURL` 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 `GRAPHSESVURL` and use `JSCOM3` or `IBIJAVAPATH` for a specific procedure by setting `GRAPHSESVURL` to nothing:

```
SET GRAPHSEVRURL= " "
```

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 GRAPHSEVRURL and IBIJAVAPATH is not set.

To use JSCOM3, you must set the \$JDK_HOME variable to your Java JDK installation directory. JSCOM3 is configured to automatically use headless. If you wish to use DISPLAY, you need to disable headless for JSCOM3 and set the DISPLAY variable.

For more information, see [How to Verify or Enable the JSCOM3 Listener](#) on page 50.

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:

```
/install_directory/ibi/srv82/home/graph
```

```
/install_directory/ibi/WebFOCUS82/ibi_html/javaassist/images/tdg/template
```


This appendix optionally applies to WebFOCUS Managed Reporting and ReportCaster users. It contains:

- ❑ Reference information about repositories ([Repository JDBC Concepts](#) on page 167 and [Repository Connection Information](#) on page 170).
- ❑ Sizing information for creating tablespaces ([Sizing Guidelines](#) on page 175).
- ❑ MySQL database installation and configuration information ([MySQL Repository Set Up](#) on page 177).

In this appendix:

- ❑ [Repository JDBC Concepts](#)
 - ❑ [Repository Connection Information](#)
 - ❑ [Sizing Guidelines](#)
 - ❑ [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).

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, the credentials are set in the WebFOCUS configuration file, `install.cfg`. If you need to change these values, you can edit this file. The WebFOCUS Administration Console allows you to change the password.

JDBC Driver

The JDBC driver is a class name used to access the driver. This varies depending on the driver.

During the Distribution Server installation, this is determined and set.

- ☐ For Derby, Oracle, SQL Server, MySQL, and DB2, the installation automatically writes the JDBC driver class name for the standard driver.
- ☐ For other databases and drivers, you are prompted to provide the JDBC driver class name. This value is stored in the WebFOCUS configuration file, `install.cfg`. If you need to change this value, you can edit this file.

JDBC Path

A JDBC driver is usually packaged as one or more JAR or ZIP files. Each target data source has its own JDBC driver, so you would use the Oracle JDBC driver to access Oracle and the SQL Server JDBC driver to access SQL Server. Some vendors may also require different drivers for different database releases.

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:

```
/install_directory/ibi/WebFOCUS82/ReportCaster/bin/classpath
```

- ❑ For the application server, you set your application server CLASSPATH variable to include the driver file or files.

Note: You can also copy driver files into the WEB-INF/lib directory located inside the webfocus.war file or WebFOCUS82 directory before you deploy the web application.

You must always specify the driver file or files, not just the directory containing the driver. You enter the JDBC driver file name in the JDBC Path field.

During the 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, install.cfg, and in ../utilities/setenv/utluservars.sh. If you need to change the value, you can edit these files.

Or you can edit the file using the repurl script and/or repclass script. For example,

```
repurl jdbc_url repclass class_name
```

JDBC Class

The JDBC class is a value used to access the JDBC driver. The JDBC class value varies depending on the driver.

During the WebFOCUS Client installation, the JDBC class value is determined and set based on the database selection.

- ❑ For Oracle, SQL Server, MySQL, and DB2, the installation automatically writes the JDBC CLASS for the standard driver.
- ❑ For other databases and drivers, you are prompted to provide the JDBC CLASS.

The JDBC class value is stored in the WebFOCUS configuration file, `install.cfg`. You can edit this file if you need to alter the JDBC driver information and provide a different JDBC class value.

JDBC URL

The JDBC URL is a value used to access the driver and repository. This varies depending on the driver and other connection information.

During the WebFOCUS Client installation, the JDBC URL is set based on the selected database.

- ❑ For Oracle, SQL Server, MySQL, and DB2, you are prompted for specific information needed to access your repository. This varies depending on the type of database and may include the host name or port where your database resides. The installation uses this information to create the JDBC URL.
- ❑ For other databases and drivers, you must provide the JDBC URL.

The JDBC URL value is stored in the WebFOCUS configuration file, `install.cfg`. You can edit this file if you need to alter the JDBC driver information and provide a different JDBC URL value.

Repository Connection Information

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

- ❑ For DB2, see [DB2 Connection Information](#) on page 171.
- ❑ For Derby, see [Derby Connection Information](#) on page 172.
- ❑ For MySQL, see [MySQL Connection Information](#) on page 172.
- ❑ For Oracle, see [Oracle Connection Information](#) on page 173.
- ❑ For SQL Server, see [SQL Server 2016, 2014, 2012, and 2008 Connection Information](#) on page 174.
- ❑ For other repositories, refer to the documentation for your JDBC driver.

DB2 Connection Information

When using a DB2 repository, the connection information varies depending on the operating systems and the driver. The most common DB2 JDBC driver is the DB2 Universal JDBC driver.

During the WebFOCUS Client installation, you are prompted for:

- ☐ Database Name.
- ☐ Database Server Node (host name).
- ☐ Location Name.
- ☐ Port (50000 by default).
- ☐ Credentials for the account that will own the repository.
- ☐ JDBC Driver (com.ibm.db2.jcc.DB2Driver).
- ☐ JDBC Path (db2jcc.jar and db2jcc_license_cisuz.jar).

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

- ☐ CLASS:

`com.ibm.db2.jcc.DB2Driver`

- ☐ URL

- ☐ For Universal DB2 JDBC (UDB) Type 4 Driver:

`jdbc:db2://hostname:port/DBName`

where:

`DBName`

Is the database name for the repository.

`LOCName`

Is the DB2 location name.

`hostname`

Is the host name for the DB2 server.

`port`

Is the port for the DB2 server. The default is 324.

- ❑ For Universal DB2 JDBC (UDB) Type 2 Driver:

`jdbc:db2:DBName`

Derby Connection Information

In Derby, you create a database and user ID within a Derby Database Server.

During the WebFOCUS Client installation, you are prompted for:

- ❑ Database name for the repository (WebFOCUS82, by default).
- ❑ Database Server Node (*hostname*, by default).
- ❑ Port (1527, by default).
- ❑ Account to access the repository (webfocus, by default).
- ❑ Database password to access the repository (webfocus, by default).
- ❑ JDBC Driver (org.apache.derby.jdbc.ClientDriver).
- ❑ JDBC Path (derbyclient.jar).
- ❑ ClassName: org.apache.derby.jdbc.ClientDriverConnection URL:
`jdbc:derby://<host>:<port>/<database>`

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

- ❑ CLASS:
`org.apache.derby.jdbc.ClientDriver`

- ❑ URL:
`jdbc:derby://<host>:<port>/<database>`

If you install multiple instances of the WebFOCUS Client, you need multiple repositories. To maintain multiple repositories in the same Derby Database Server, create a unique database for each instance.

MySQL Connection Information

In MySQL, you create a database and user ID within a MySQL Database Server. These steps are described in [MySQL Repository Set Up](#) on page 177.

During the WebFOCUS Client installation, you are prompted for:

- ☐ Database name for the repository.
- ☐ Database Server Node (host name).
- ☐ Port (3306, by default).
- ☐ Account and password to access the repository.
- ☐ JDBC Driver (com.mysql.jdbc.Driver).
- ☐ JDBC Path (mysql-connector-java-*nn*-bin.jar where *nn* is the version number).

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

- ☐ CLASS:

```
com.mysql.jdbc.Driver
```

- ☐ URL:

```
jdbc:mysql://<server>:<port3306>/<database>
```

If you install multiple instances of the WebFOCUS Client, you need multiple repositories. To maintain multiple repositories in the same MySQL Database Server, create a unique database for each instance.

Oracle Connection Information

In Oracle, the account determines which tables and tablespaces are accessible within an Oracle Instance (ORASID). Your DBA should set up access to Oracle for you.

During the WebFOCUS Client installation, you are prompted for:

- ☐ Database Server Node (host name).
- ☐ Port (1521, by default).
- ☐ Credentials for the account that will own the repository.
- ☐ Oracle Instance (ORASID) for the repository.
- ☐ JDBC Driver (oracle.jdbc.OracleDriver).
- ☐ JDBC Path (ojdbc17.jar for Java 7).

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

- ❑ CLASS (Oracle 12c or higher):

`oracle.jdbc.OracleDriver`

- ❑ URL:

`jdbc:oracle:thin:@hostname:port:oraid`

If you install multiple instances of the WebFOCUS Client, you need multiple repositories. To maintain multiple repositories in the same Oracle Instance (ORASID), each repository must have a unique account (owner).

SQL Server 2016, 2014, 2012, and 2008 Connection Information

In Microsoft SQL Server, you create a database and user ID within a SQL Server Database Server.

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).
- ❑ JDBC Path (latest version of sqljdbc4.jar or sqljdbc41 is required. sqljdbc42.jar is not supported).

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

- ❑ CLASS:

`com.microsoft.sqlserver.jdbc.SQLServerDriver`

- ❑ URL:

`jdbc:sqlserver://hostname:port;DatabaseName=databasename`

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.

Procedure: How to Enable TCP/IP in SQL Server 2016, 2014, 2012, and 2008

SQL Server 2016, 2014, 2012, and 2008 have TCP/IP disabled, by default. Since WebFOCUS and ReportCaster require TCP/IP, you must perform the following steps to enable TCP/IP in SQL Server 2016, 2014, 2012, and 2008.

1. Open the SQL Server Configuration Manager.
2. Under 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 Tablespace

Table Name	Rows	Max Rows Width (bytes)	Notes
BOTACCES (Report Library only)	2,000	292	One record per access list and 1:m with BOTLIST.
BOTADDR	2,000	101	One record per address list and 1:m with BOTDEST.

Table Name	Rows	Max Rows Width (bytes)	Notes
BOTCAT (Report Library only)	20,000	751	One record for each schedule in the library. If the schedule is burst, each burst report is a record.
BOTCDATE	20,000	807	Could have multiple records per record in the BOTSCIT file (an average number might be 20). Added for the custom scheduling interval feature.
BOTDEST	20,000	210	One record per destination.
BOTDIST			
BOTJOURN			
BOTLDATA (Report Library only)	10,000	NA	One record per report in the library (blob).
BOTLIB (Report Library only)	10,000	713	One record per report in the library (blob).
BOTLIST (Report Library only)	20,000	298	One record per destination.
BOTLOG	10,000	228	One record per job run and a 1:m with BOTLOG2.
BOTLOG2	100,000	361	One record per job message.
BOTPACK	10,000	124	One record per schedule.
BOTPARMS	5,000	369	One record per parameter per task.
BOTSBDS	500	625	One record per designated blackout day per group.
BOTSCHEd	10,000	2252	One record per schedule.

Table Name	Rows	Max Rows Width (bytes)	Notes
BOTSCIT	10,000	590	Could have one record per record in the BOTSCHED file. Added for the custom scheduling interval feature.
BOTSIT			
BOTSTATE	1	256	Contains 1 record. Added for the Failover feature.
BOTTASK	15,000	928	One task per schedule (can have multiple tasks per schedule so 1:m relationship with BOTSCHED).
BOTTELL			
BOTTSKEX	15,000	324	One per task.
BOTWATCH	20,000	330	One record per record in the BOTCAT file. Added for the Library Watch List feature.

The following formula for allocating table space sizes is recommended:

Storage needed = number of bytes of user data x overhead factor

For simple tables (one per table space), an overhead factor of 1.75 is recommended.

Note: The BOTLDATA table uses the BLOB data type, so you should size accordingly.

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>

The standard download is sufficient.

The following page includes documentation on installing, configuring, administering, and using MySQL:

<http://dev.mysql.com/doc/mysql/en/index.html>

2. For most platforms, you can download a .tar.gz file and then decompress and extract it to a directory on your system. Then, you need to navigate to the MySQL directory you extracted and execute:

```
scripts/mysql_install_db --user=mysql
```

Be sure to set a password for the root account.

Refer to the MySQL documentation for assistance.

Increasing the max_allowed_packet Parameter Value

When you configure or migrate a MySQL repository for WebFOCUS 8.2, you must increase the size of the max_allowed_packet parameter. MySQL recommends that the value of the max_allowed_packet parameter for MySQL Client and MySQL Server should be increased for applications that use of binary large objects (BLOBs) and character large objects (CLOBs), such as WebFOCUS.

For more information on this topic and how to change the value of the max_allowed_packet parameter for MySQL Client and MySQL Server, see the following website:

<http://dev.mysql.com/doc/refman/5.1/en/packet-too-large.html>

Running MySQL

You can start the MySQL daemon as follows:

1. Navigate to the directory where you installed MySQL.
2. Type the following:

```
./bin/mysqld_safe &
```

You can stop MySQL by running the following:

```
./bin/mysqladmin -p -u root shutdown
```

Administering MySQL

You administer MySQL using a tool that you can launch from the shell:

1. Navigate to the MySQL bin directory.
2. Type the following:

```
mysql -h localhost -u root -p
```

3. Provide the password when prompted.

The following prompt should appear:

```
mysql>
```

From this prompt, you can execute SQL commands and administer the database server.

MySQL documentation is available online at the following website:

<http://dev.mysql.com/doc/mysql/en/index.html>

Creating the WebFOCUS Reporting Database and User

You can use the MySQL command line tool to create a database and user for ReportCaster.

Procedure: How to Create a MySQL Database and User

1. Open and sign in to the MySQL Command Line Tool.
2. At the mysql> prompt, type the following to create a new empty database for WebFOCUS:

```
CREATE DATABASE webfocus8;
```

where:

```
webfocus8
```

Is the name of the database you will use for WebFOCUS repository. This is case-sensitive.

You should receive a response like the following:

```
Query OK, 1 row affected (0.03 sec)
```

3. Optionally, confirm that the database was created by typing the following command at the mysql> prompt:

```
show databases;
```

You should receive a response that includes your new database. For example:

```
+-----+  
| Database |  
+-----+  
| mysql    |  
| webfocus8 |  
| test     |  
+-----+  
3 rows in set (0.00 sec)
```

4. At the `mysql>` prompt, type the following to create a new MySQL user ID and grant it access to the WebFOCUS database:

```
GRANT ALL PRIVILEGES ON  
  wf.* TO 'wfuser'@' %'  
  IDENTIFIED BY 'wfpass';
```

where:

webfocus8

Is the name of the database you will use for WebFOCUS. This is case-sensitive in some environments.

%

Indicates that the database is accessible from any host. To limit which hosts can access the database, provide the host name or IP address of the machine running the WebFOCUS Client and the ReportCaster Distribution Server in place of %. If the application server is on a different machine, you will need to type the command twice to grant access from both hosts.

webfocus8

Is the user ID you are creating. This is case-sensitive in some environments. The user ID and password are part of MySQL and not the operating system.

rcpass

Is the password for the user ID. This is case-sensitive.

If you need to change your password, you can retype the GRANT command to provide the new password. The new values will overwrite any existing password.

5. Optionally, confirm that the user ID was added to the MySQL user table by typing the following command at the `mysql>` prompt:

```
use mysql
```

This selects the default mysql database within the MySQL Database Server.

Ensure that the user ID you created exists and is associated with your database by typing the following command at the `mysql>` prompt:

```
select user,host,db from db;
```

This query returns all user IDs and associated host names with the databases they can access. For example:

```
+-----+-----+-----+
| user  | host  | db      |
+-----+-----+-----+
| wfuser | %     | wf      |
+-----+-----+-----+
```

After making user ID changes, you can ensure they are refreshed by typing the following command at the `mysql>` prompt:

```
FLUSH PRIVILEGES;
```

6. Optionally, specify the database you created for the repository by typing the following command at the `mysql>` prompt:

```
use wf
```

where:

```
wf
```

Is the name of the database you will use for WebFOCUS. This is case-sensitive in some environments.

7. Optionally, confirm there are no tables in the database by typing the following command at the `mysql>` prompt:

```
show tables;
```

If you have not yet created tables, you should receive the following:

```
Empty set (0.00 sec)
```

After creating the repository tables, you can use this to confirm that the tables exist.

Installing the MySQL JDBC Driver

The MySQL JDBC driver is known as MySQL Connector/J 3.1.

1. Download the latest MySQL Connector/J 3.1 from:

<http://www.mysql.com/>

The following page contains links to download MySQL Connector/J 3.1:

<http://dev.mysql.com/downloads/connector/j/3.1.html>

Download the latest ZIP or .tar.gz 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. Place the .tar.gz or ZIP file on your UNIX system. If you use FTP, use binary mode.
3. Extract the MySQL JDBC driver JAR file. This file is located in the archive as:

`mysql-connector-java-3.1.14/mysql-connector-java-3.1.14-bin.jar`

The number in the directory and file name, will match the number in the name of the ZIP file you download. MySQL has an aggressive release cycle, so the number in this file name may vary.

If you downloaded a ZIP file, you can use the jar command to extract the JAR file. For example:

```
jar xvf mysql-connector-java-3.1.14.zip
mysql-connector-java-3.1.14/mysql-connector-java-3.1.14-bin.jar
```

4. 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.

Index

A

Access Files [24, 50](#)
Active Technologies [125](#)
adapters [50](#)
AGENT_NODE parameter [153](#)
AGENT_PORT parameter [153](#)
aliases
 configuring for Apache HTTP Server [105, 108](#)
 configuring for Apache Tomcat [104](#)
 configuring for Tomcat [103](#)
Apache HTTP Server configuration [105](#)
Apache Tomcat configuration [101](#)
APP_PATH settings [146](#)
applet issues [146](#)
application servers [16, 24](#)
 configuring [87](#)
 installation with WebFOCUS components [117](#)
 overview [16](#)
 requirements [30, 33](#)
aproot alias [89](#)
APPROOT directory [45, 83, 89](#)
authentication for ReportCaster Repositories [167](#)

C

CLASSPATH [169](#)
 for Apache Tomcat [102](#)
 for ReportCaster Distribution Server [169](#)

Client for WebFOCUS [17](#)
 verifying [123](#)
communication requirements [32](#)
communication settings for WebFOCUS Client [124](#)
configuration files for WebFOCUS Client [119](#)
configuration verification program [119](#)
configuring aliases
 for Apache HTTP Server [105, 108](#)
 for Apache Tomcat [102](#)
configuring application servers
 Apache Tomcat [105](#)
configuring ReportCaster Failover [137](#)
configuring ReportCaster Workload Distribution [137](#)
configuring WebFOCUS in a split web-tier environment [117](#)
context paths [25, 88](#)
context roots [25, 88](#)

D

data adapters [50](#)
Db2 repositories
 configuring with ReportCaster [36](#)
 JDBC connection parameters [171](#)
 JDBC driver types [171](#)
 JDBC software configuration [36](#)
 requirements [36](#)
 requirements for ReportCaster [37](#)
dbpass script [135](#)

- dbuser script [135](#)
- deploying web applications [88](#)
 - on Apache Tomcat [104](#)
 - on Tomcat [100](#)
- deployment descriptor [25](#)
- Derby repositories
 - JDBC connection parameters [172](#)
- describing data for WebFOCUS [50](#)
- diagnostic tools [123](#), [146](#)
- directory structure [83](#)
 - for ReportCaster Distribution Servers [84](#)
 - for WebFOCUS Clients [83](#)
 - for WebFOCUS Reporting Servers [53](#)
- distributed WebFOCUS configurations [20](#)
- distributing reports [22](#)
- Distribution Server [22](#)
 - requirements [29](#)
 - default port [32](#)
 - directory structure [84](#)
 - disk space requirements [30](#), [32](#)
 - DISPLAY variable [139](#)
 - Failover [137](#)
 - headless Java option [139](#)
 - logs [136](#), [152](#)
 - processing [22](#)
 - requirements [29](#), [36](#)
 - starting [131](#)
 - stopping [131](#)
 - testing [131](#), [134](#)
 - traces [152](#)

- Distribution Server [22](#)
 - troubleshooting [145](#)
 - user IDs [26](#), [35](#)
 - verifying [131](#), [134](#)
 - Workload [137](#)

E

- EDACONF directory [45](#)
- EDAHOME directory [45](#)
- EDAPRFU directory [45](#)
- email
 - distribution [36](#)
 - servers [36](#)

F

- file permissions for WebFOCUS Client [85](#)
- Firefox requirements [31](#)
- FTP distribution [36](#)

G

- GRAPHENGINE setting [161](#)
- graphics options [126](#)
- graphics
 - options [161](#)
- GRAPHSERVURL [163](#), [164](#)

H

- headless Java option [126](#), [139](#)
- HOLD graphics [163](#)

I

ibi_apps context root [88](#)
 ibi_html alias [89](#)
 installation
 verification tool [123](#)
 installing all WebFOCUS components on the
 application server [117](#)
 iWay software [15](#)

J

jar command [150](#)
 JDBC (Java Database Connectivity) [36](#)
 class [169](#)
 class for DB2 [171](#)
 class for MySQL [173](#)
 class for Oracle [173](#)
 class for SQL Server [174](#)
 driver [168](#)
 driver requirements [37](#), [168](#)
 overview [167](#)
 path [169](#)
 path for Derby [172](#)
 requirements [37](#), [167](#)
 URL [170](#)
 URL for DB2 [171](#)
 URL for MySQL [173](#)
 URL for Oracle [173](#)
 URL for SQL Server [174](#)
 JSCOM3 [50](#), [163](#), [165](#)
 server [50](#)

L

license codes for WebFOCUS [44](#)
 load balancing [21](#)

M

Magnify [157](#)
 adding JAXB Library [158](#)
 configuration [157](#)
 JAXB Tomcat Server setting [158](#)
 optimization [158](#)
 prerequisites [158](#)
 security [159](#)
 Managed Reporting [141](#)
 accessing [142](#)
 user IDs [26](#)
 Master Files [24](#), [50](#)
 metadata [50](#)
 Mozilla Firefox requirements [31](#)
 MySQL repositories [177](#)
 configuration [177](#)
 installation [177](#)
 JDBC connection parameters [173](#)
 JDBC driver installation [182](#)
 requirements for ReportCaster [38](#)

N

node blocks [124](#)
 non-interactive installations [54](#)

O

odin.cfg file for WebFOCUS Client [124](#)

Oracle

JDBC connection parameters [173](#)

Server requirements for ReportCaster [38](#)

P

PCHOLD [126](#), [162](#)

Performance Management Framework (PMF) [18](#)

PTH [27](#), [48](#)

R

remote servers [124](#)

repclass script [135](#)

report distribution [22](#)

report processing [18](#)

report scheduling [22](#)

ReportCaster [15](#)

processing [22](#)

requirements [29](#)

servlets [22](#)

tables [22](#)

APIs [22](#)

authentication for repositories [167](#)

Client Servlets [22](#)

communication requirements [32](#)

components [22](#)

default port [32](#)

Development and Administration interface
[134](#)

ReportCaster [15](#)

directory structure [84](#)

disk space requirements [30](#), [32](#)

DISPLAY variable [139](#)

Distribution Server [22](#)

Failover [137](#)

graphics configuration [139](#), [161](#)

headless Java option [139](#)

logs [136](#)

mail server requirements [36](#)

overview [15](#)

ports [32](#)

requirements [29](#)

security [26](#)

starting [131](#)

stopping [131](#)

testing [131](#), [134](#)

traces [152](#)

troubleshooting [145](#)

user IDs [26](#), [35](#)

verifying [134](#)

Workload [137](#)

Reporting Server for WebFOCUS [17](#)

installing [41](#)

testing [47](#)

directory structure [53](#)

reports

scheduling [22](#)

repository tables for ReportCaster [167](#)

repurl script [135](#)

S

secure server file permissions [47](#)

security [26](#)

- PTH [27](#)
- for Magnify [159](#)
- for ReportCaster [26](#)
- for the WebFOCUS Reporting Server [47](#)
- for WebFOCUS [26](#)
- options [26](#)

serial numbers for WebFOCUS [44](#)

server JSCOM3 [163](#), [165](#)

Server Side Graphics [126](#), [162](#)

servlet containers [16](#), [24](#)

- configuring [87](#)
- requirements [30](#)

servlets [16](#)

- configuring on Tomcat [100](#)
- ReportCaster [22](#)
- ReportCaster [88](#)
- WebFOCUS [88](#)

setting DISPLAY [126](#), [139](#)

shell requirements [30](#)

silent installations [54](#)

SMTP (Simple Mail Transfer Protocol)

- requirements [36](#)

split web-tier configuration [117](#)

SQL Server repositories [37](#)

- JDBC connection parameters [174](#)

starting WebFOCUS Reporting Servers [48](#)

stopping WebFOCUS Reporting Servers [52](#)

supported JVMs for applets [146](#)

synonyms [50](#)

T

time zones [36](#)

Tomcat configuration [101](#)

- CLASSPATH setting [102](#)
- jakarta connector for Apache [105](#)

troubleshooting ReportCaster [145](#)

troubleshooting WebFOCUS [145](#)

U

URL servlet calls [111](#)

user ID requirements [33](#)

- for WebFOCUS Reporting Server [33](#)

V

verification tool [123](#)

viewing Web Consoles [49](#)

W

web applications [24](#)

- deploying on Tomcat [100](#)
- editing [150](#)
- deploying [25](#), [88](#)
- deploying [87](#)

web browsers [16](#)

Web Console [119](#)

Web Consoles [49](#)

- web servers [16](#)
 - configuring [87](#)
 - requirements [29](#)
 - WebFOCUS installation requirements [29](#), [33](#)
- WEB-INF directory [25](#)
- web.xml file [25](#)
- WebFOCUS [15](#)
 - installation [15](#)
 - requirements [29](#)
 - server installation [41](#)
 - WebFOCUS Reporting Server installation [41](#)
 - authentication options [26](#)
 - communication requirements [32](#)
 - components [17](#)
 - configurations [19](#)
- WebFOCUS [15](#)
 - disk space requirements [30](#), [32](#)
 - distributed configurations [20](#)
 - operating system requirements [30](#)
 - overview [15](#)
 - processing [18](#)
 - security [26](#)
 - stand-alone configurations [20](#)
 - TCP/IP ports [32](#)
 - troubleshooting [145](#)
 - user ID requirements [30](#)
 - user interfaces [119](#), [141](#)
- welcome page [120](#)
- Workload Distribution [137](#)
- Workspace Web Console [49](#)



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WebFOCUS



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