



™

TIBCO JasperReports® Server Community Project Upgrade Guide

Software Release 8.0

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CHAPTER 1 INTRODUCTION

TIBCO JasperReports® Server builds on TIBCO JasperReports® Library as a comprehensive family of Business Intelligence (BI) products, providing robust static and interactive reporting, report server, and data analysis capabilities. These capabilities are available as either stand-alone products, or as part of an integrated end-to-end BI suite utilizing common metadata and provide shared services, such as security, a repository, and scheduling. The server exposes comprehensive public interfaces enabling seamless integration with other applications and the capability to easily add custom functionality.



This section describes functionality that can be restricted by the software license for JasperReports Server. If you don't see some of the options described in this section, your license may prohibit you from using them. To find out what you're licensed to use, or to upgrade your license, contact TIBCO.

The heart of the TIBCO Jaspersoft® BI Suite is the server, which provides the ability to:

- Easily create new reports based on views designed in an intuitive, web-based, drag and drop Ad Hoc Editor.
- Efficiently and securely manage many reports.
- Interact with reports, including sorting, changing formatting, entering parameters, and drilling on data.
- Schedule reports for distribution through email and storage in the repository.
- Arrange reports and web content to create appealing, data-rich TIBCO Dashboards that quickly convey business trends.

For users interested in multi-dimensional modeling, we offer Jaspersoft® OLAP, which runs as part of the server.

While the Ad Hoc Editor lets users create simple reports, more complex reports can be created outside of the server. You can either use Jaspersoft® Studio or manually write JRXML code to create a report that can be run in the server. We recommend that you use Jaspersoft Studio unless you have a thorough understanding of the JasperReports file structure.

You can use the following sources of information to learn about JasperReports Server:

- Our core documentation describes how to install, administer, and use JasperReports Server and Jaspersoft Studio. Core documentation is available in PDF format on the [TIBCO Product Documentation website](#). You can also access PDF and HTML versions of these guides online from the [Documentation section](#) of the Jaspersoft Community website.
- Our Ultimate Guides document advanced features and configuration. They also include best practice recommendations and numerous examples. You can access PDF and HTML versions of these guides online from the [Documentation section](#) of the Jaspersoft Community website.

- Our [Online Learning Portal](#) lets you learn at your own pace, and covers topics for developers, system administrators, business users, and data integration users. The Portal is available online from the Professional Services section of our [website](#).
- Our free samples, which are installed with JasperReports Library, Jaspersoft Studio, and JasperReports Server, are available and documented online. Please visit our [GitHub repository](#).
- If you have a subscription to our professional support offerings, please contact our Technical Support team when you have questions or run into difficulties. They're available on the web at and through email at <http://support.tibco.com> and js-support@tibco.com.

JasperReports Server is a component of both a community project and commercial offerings. Each integrates the standard features such as security, scheduling, a web services interface, and much more for running and sharing reports. Commercial editions provide additional features, including Ad Hoc views and reports, advanced charts, dashboards, Domains, auditing, and a multi-organization architecture for hosting large BI deployments.

1.1 Server Upgrade Distributions

The following distribution package is available for JasperReports Server upgrade:

Distribution Package	Description
WAR File Distribution Zip	<p>Supports upgrade from version 7.1 or later.</p> <p>Supports all certified application servers.</p> <p>Supports all certified repository databases.</p> <p>Supports Windows, Linux, Mac, and other platforms.</p> <p>File name is: TIB_js-jrs-cp_8.0.0_bin.zip</p>

1.1.1 Upgrade Paths

Your current version determines your upgrade path:

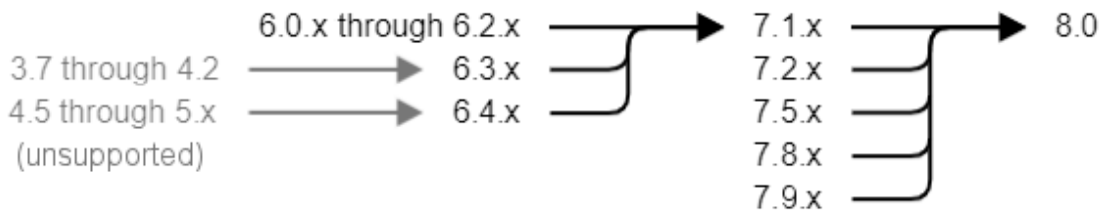


Figure 1-1 Paths for Upgrading to Version 8.0

If you are upgrading from 7.9, use the instructions in [Chapter 2, “Upgrading from 7.9 to 8.0,” on page 9](#). If you are starting from 7.1.x to 7.5.x, use the instructions in [Chapter 3, “Upgrading from 7.1 - 7.5 to 8.0,” on page 17](#).

For upgrading other versions, see the table below. Versions prior to 6 are no longer supported and must be upgraded to version 6.3 first. You may also need to upgrade in several steps through an intermediate version. In the following table:

- samedb = Follow the steps equivalent to [Chapter 2, “Upgrading from 7.9 to 8.0,” on page 9](#).
- newdb = Follow the steps equivalent to [Chapter 3, “Upgrading from 7.1 - 7.5 to 8.0,” on page 17](#).

To > From:	6.1.x	6.2.x	6.3.x	6.4.x	7.1.x	7.2.x	7.5.x	7.8.x	7.9.x	8.0x
6.0.x	samedb	newdb	newdb	newdb	newdb					
6.1.x		samedb	newdb	newdb	newdb					
6.2.x			samedb	newdb	newdb					
6.3.x				samedb	newdb	newdb				
6.4.x					samedb	newdb	newdb			
7.1.x						samedb	newdb	newdb	newdb	newdb
7.2.x							samedb	newdb	newdb	newdb
7.5.x								samedb	newdb	newdb
7.8.x									newdb samedb	newdb
7.9x										newdb samedb

1.1.2 About Bundled Apache Ant

We recommend Apache Ant version 1.9.4, which is bundled with the War File Distribution ZIP. The Ant scripts used for upgrade come with Windows and Linux batch scripts pre-configured to use the bundled version of Apache Ant.

If you want to run your own version of Apache Ant, version 1.8.1 or later is required.

The bundled Apache Ant includes an additional jar. This jar (ant-contrib.jar) enables conditional logic in Ant. If you're running your own Ant you should copy the ant-contrib.jar to your <Ant_HOME>/lib folder.



On Linux and Solaris, the Ant commands may not be compatible with all shells. If you get errors, use the `bash` shell explicitly. For more information, see the information on the bash shell in the Troubleshooting appendix of the *JasperReports Server Community Project Installation Guide*.

CHAPTER 2 UPGRADING FROM 7.9 TO 8.0

This chapter describes the recommended procedure for upgrading to JasperReports Server 8.0 from version 7.9. The examples show you how to upgrade using the js-upgrade shell scripts.

This chapter contains the following sections:

- [Upgrade Steps Overview](#)
- [Upgrading with Customizations](#)
- [Back Up Your JasperReports Server Instance](#)
- [Preparing the JasperReports Server 8.0 WAR File Distribution](#)
- [Configuring Buildomatic for Your Database and Application Server](#)
- [Upgrading to JasperReports Server 8.0](#)
- [Starting and Logging into JasperReports Server 8.0](#)
- [Additional Tasks to Complete the Upgrade](#)

2.1 Upgrade Steps Overview

These are the general steps used in this section:

1. Identify your customizations.
2. Back up your current JasperReports Server instance.
3. Download and set up the new 8.0 JasperReports Server WAR file distribution zip.
4. Run the js-upgrade script as described in [2.6, “Upgrading to JasperReports Server 8.0,” on page 12](#).

If your current instance of JasperReports Server has modifications or extensions, keep track of these and re-integrate them into your 8.0 instance after upgrading.

2.2 Upgrading with Customizations

If your current instance of JasperReports Server has modifications or extensions, keep track of these and re-integrate them into your 8.0 instance after upgrading. See [Appendix A, “Planning Your Upgrade ,” on page 27](#) to determine if any customizations you've made to your existing version of JasperReports Server are affected by changes to the updated version.

2.3 Back Up Your JasperReports Server Instance

First back up your JasperReports Server WAR file and `jasperserver` database so you can restore them if necessary. Perform these steps from the command line in a Windows or Linux shell.

This backup example is for Tomcat with the PostgreSQL or MySQL database. For other databases, consult your DB administration documentation for backup information.

Back up your JasperReports Server War File:

1. Create a folder where you can save your `jasperserver` war file, for example `C:\JS_BACKUP` or `/opt/JS_BACKUP`.
2. Copy `<tomcat>/webapps/jasperserver` to `<path>/JS_BACKUP`

Back up your jasperserver Database:

1. Create a folder (if you did not do so in the step above) where you can save your `jasperserver` database, for example `C:\JS_BACKUP` or `/opt/JS_BACKUP`.
2. Run the following commands for PostgreSQL or MySQL:

- PostgreSQL

```
cd <path>/JS_BACKUP
pg_dump --username=postgres jasperserver > js-db-dump.sql
```

- MySQL

```
cd <path>/JS_BACKUP
```

Windows: `mysqldump --user=root --password=<password> jasperserver > js-db-dump.sql`

Linux: `mysqldump --user=root --password=<password> --host=127.0.0.1 jasperserver > js-db-dump.sql`



For MySQL, If you receive an error about packet size, see the Troubleshooting appendix of the *JasperReports Server Community Project Installation Guide*.

Back up your JasperReports Server Keystore:

1. Create a folder (if you did not do so already) where you can save your server's keystore, for example `C:\JS_BACKUP` or `/opt/JS_BACKUP`.
2. As the user who originally installed the server, copy `$HOME/.jrsks` and `$HOME/.jrsksp` to `<path>/JS_BACKUP`. Remember that these files contain sensitive keys for your data, so they must always be transmitted and stored securely.

2.4 Preparing the JasperReports Server 8.0 WAR File Distribution

Use the buildomatic `js-upgrade` scripts included in the 8.0 WAR file distribution ZIP release package to carry out the upgrade. The WAR file distribution comes in a compressed ZIP file named `TIB_js-jrs-cp_8.0.0_bin.zip`.

Follow these steps to obtain and unpack the WAR file distribution ZIP file:

1. Download the WAR file distribution from [the Jaspersoft community site \(http://community.jaspersoft.com\)](http://community.jaspersoft.com).
2. Extract all files from `TIB_js-jrs-cp_8.0.0_bin.zip`. Choose a destination, such as a `C:\Jaspersoft` folder on Windows, `/home/<user>` on Linux, or `/Users/<user>` on Mac.

After you unpack the WAR File Distribution, the resulting location will be known as:

```
<js-install-8.0>
```

2.5 Configuring Buildomatic for Your Database and Application Server

This upgrade procedure uses the `js-upgrade-samedb-ce` shell script.



For Unix, the bash shell is required for the `js-upgrade` scripts. If you're installing to a non-Linux Unix platform such as IBM AIX, FreeBSD or Solaris, you need to download and install the bash shell. See the Troubleshooting appendix of the *JasperReports Server Community Project Installation Guide* for more information.

This section shows example configurations for the PostgreSQL and MySQL databases.

2.5.1 Example Buildomatic Configuration

The `default_master.properties` file handles the upgrade configuration. We provide a sample configuration file for each database. You must specify your database credentials and application server location, and rename the file to `default_master.properties`.

2.5.1.1 PostgreSQL Example

To configure `default_master.properties` for PostgreSQL:

1. Locate the `postgresql_master.properties` sample configuration file.

Database	Master Properties File
PostgreSQL	<code><js-install-8.0>/buildomatic/sample_conf/postgresql_master.properties</code>

2. Copy the file to `<js-install-8.0>/buildomatic`
3. Rename the file `default_master.properties`
4. Edit `default_master.properties` for your database and application server.

Database	Sample Property Values
PostgreSQL	<pre>appServerType=tomcat (or wildfly, etc.) appServerDir=c:\\Apache Software Foundation\\Tomcat 9.0 (for example) dbUsername=postgres dbPassword=postgres dbHost=localhost</pre>

2.5.1.2 MySQL Example

To configure `default_master.properties` for MySQL:

1. Locate the `mysql_master.properties` sample configuration file:

Database	Master Properties File
MySQL	<code><js-install-8.0>/buildomatic/sample_conf/mysql_master.properties</code>

2. Copy the file to <js-install-8.0>/buildomatic
3. Rename the file default_master.properties
4. Edit default_master.properties for your database and application server.

Database	Sample Property Values
MySQL	<pre>appServerType=tomcat (or wildfly, etc.) appServerDir=c:\\Apache Software Foundation\\Tomcat 9.0 (for example) dbUsername=root dbPassword=password dbHost=localhost</pre>

2.6 Upgrading to JasperReports Server 8.0

Now that your buildomatic scripts are configured, you can complete the upgrade.



- Make sure you've backed up your `jasperserver` database before proceeding.
- Make sure you've backed up your old JasperReports Server WAR file before proceeding.

1. Stop your application server.
2. Start your database server.
3. Make sure that the user running the upgrade commands is the same user that installed the server.
4. Run the following commands:

Commands	Description
<code>cd <js-install-8.0>/buildomatic</code>	
<code>js-upgrade-samedb-ce.bat</code>	(Windows) Upgrade jasperserver war file, upgrade jasperserver database to 8.0, add 8.0 repository resources into the database
<code>./js-upgrade-samedb-ce.sh</code>	(Linux) Upgrade jasperserver war file, upgrade jasperserver database to 8.0, add 8.0 repository resources into the database

If you are prompted to create a new keystore, this means that the server's original keystore was not found in the user's home directory. Proceed with caution:

- In general, it is recommended to exit the upgrade procedure and make sure the keystore is in the proper location, then rerun the upgrade.
- If you continue and create a new keystore, then the upgrade will proceed but your repository will be corrupted and users unable to login. In this case, you will need to manually export the server's repository with a custom key, then import the key before importing the repository, as described in [A.2.3, "Encryption Keys,"](#) on page 29.

2.6.1 js-upgrade Test Mode

Use the `test` option to run the `js-upgrade` script in test mode. For example, on Windows, enter:

```
cd <js-install-8.0>/buildomatic
js-upgrade-samedb-ce.bat test
```

In test mode, the `js-upgrade` scripts check your `default_master.properties` settings and validate your application server location and its ability to connect to your database. Test mode can help you debug issues like an incorrect database password without altering your system.

2.6.2 Output Log Location

The `js-upgrade` script creates an output log that captures both standard and error output. If problems occur during script execution, or you just want to remember which options you chose, open the output log file located here:

```
<js-install-8.0>/buildomatic/logs/js-upgrade-<date>-<number>.log
```

2.6.3 Errors

If you encounter errors running the `js-upgrade` script, first look at the output log to see if you can spot the errors. For help, refer to the Troubleshooting appendix of the *JasperReports Server Community Project Installation Guide*. The information in this appendix applies to both `js-upgrade` scripts and `js-install` scripts.

If you need to modify values in your `default_master.properties` file, you can simply edit the file. When you run the `js-upgrade` script again, it uses the new values.

2.7 Starting and Logging into JasperReports Server 8.0

Start your application server. Your database should already be running.

2.7.1 Clearing Your Browser Cache

Before you log in, make sure you and your end users clear the browser cache. JavaScript files, which enable the UI elements of JasperReports Server, are typically cached by the browser. Clear the cache to ensure that the newer files are used.

2.7.2 Logging into JasperReports Server

Log in using the following URL, user IDs, and passwords:

URL: `http://localhost:8080/jasperserver`

User ID	Password	Description
<code>jasperadmin</code>	<code><your-password></code>	Administrator for the default organization

Your JasperReports Server instance has now been upgraded to 8.0. If you have startup or login problems, refer to the Troubleshooting appendix of the *JasperReports Server Community Project Installation Guide*.

2.8 Additional Tasks to Complete the Upgrade

Perform these tasks with the application server shut down.

2.8.1 Handling JasperReports Server Customizations

If you made modifications to the original JasperReports Server application, these configurations are typically found in the `WEB-INF/applicationContext-*.xml` set of files.

You'll need to manually copy configuration changes, like client-specific security classes or LDAP server configurations, from your previous environment and integrate them with your upgraded environment.

2.8.2 Clearing the Application Server Work Folder

Application servers have work folders where JasperReports Server files are compiled and cached and other objects are stored. When you update the WAR file, the buildomatic `deploy-webapp-ce` target should automatically clear the application server's `work` directory, but it's a good practice to double-check. A permission problem, or some other problem, could prevent the clearing of the work folder.

To clear the work folder in Tomcat:

1. Change directory to `<tomcat>/work`.
2. Delete all the files and folders in this directory.

2.8.3 Clearing the Application Server Temp Folder

JasperReports Server uses caching to speed operations within the application. Caching files are created and stored in the application server, usually in a `temp` folder. Clear this `temp` folder to avoid any post-upgrade conflicts. Typically, the `temp` folder used by an application server corresponds to the path referenced by the `java.io.tmpdir` Java system property. For Apache Tomcat the `temp` folder is `<tomcat>/temp`.

To clear the temp folder in Apache Tomcat:

1. Change directory to `<tomcat>/temp`
2. Delete all the files and folders in this directory

2.8.4 Clearing the Repository Cache Database Table

In the `jasperserver` database, compiled JasperReports Library resources are cached in the `JIRepositoryCache` table for increased efficiency at runtime. Because the JasperReports Library JAR is typically updated with each new release, old cached items can get out of date and cause errors at runtime. If you encounter errors that mention a JasperReports Library "local class incompatible," check your repository cache table. In summary, you can clear your `jasperserver` database cache table as part of this upgrade process whether or not there are errors.

To manually clear the repository cache database table, run a SQL command similar to one shown below:

```
update JIRepositoryCache set item_reference = null;  
delete from JIRepositoryCache;
```


CHAPTER 3 UPGRADING FROM 7.1 - 7.5 TO 8.0

This chapter describes the recommended procedure for upgrading from the latest version of JasperReports Server 7.1 through 7.5.x to JasperReports Server 8.0. If you're upgrading from version 7.9.x to 8.0, we recommend the procedure in [Chapter 2, “Upgrading from 7.9 to 8.0,” on page 9](#).

If you are upgrading from an earlier version of JasperReports Server, you need to go through an intermediate version before upgrading to 8.0. See [Chapter 4, “Upgrading JasperReports Server 6.4.x or Earlier,” on page 25](#) for more information.

This upgrade procedure uses the JasperReports Server WAR File Distribution ZIP release package and the included buildomatic scripts. Our examples are for upgrading from version 7.5.

This chapter contains the following sections:

- [Upgrade Steps Overview](#)
- [Upgrade Steps Overview](#)
- [Upgrading with Customizations](#)
- [Back Up Your JasperReports Server Instance](#)
- [Exporting Current Repository Data](#)
- [Preparing the JasperReports Server 8.0 WAR File Distribution](#)
- [Configuring Buildomatic for Your Database and Application Server](#)
- [Upgrading to JasperReports Server 8.0](#)
- [Starting and Logging into JasperReports Server 8.0](#)
- [Additional Tasks to Complete the Upgrade](#)
- [Old Manual Upgrade Steps](#)

3.1 Upgrade Steps Overview

These are the general steps used in this section:

1. Plan your upgrade.
2. Back up your current JasperReports Server instance.
3. Export your existing repository data. For example, export your 7.5 data.
4. Download and set up the new 8.0 JasperReports Server WAR file distribution zip.
5. Run the js-upgrade script as described in [3.7, “Upgrading to JasperReports Server 8.0,” on page 20](#).

3.2 Upgrading with Customizations

If your current instance of JasperReports Server has modifications or extensions, keep track of these and re-integrate them into your 8.0 instance after upgrading. See [Appendix A, “Planning Your Upgrade ,” on page 27](#) to determine if any customizations you've made to your existing version of JasperReports Server are affected by changes to the updated version.

3.3 Back Up Your JasperReports Server Instance

First back up your JasperReports Server WAR file and `jasperserver` database so you can restore them if necessary. Perform these steps from the command line in a Windows or Linux shell.

This backup example is for Tomcat with the PostgreSQL or MySQL database. For other databases, consult your DB administration documentation for backup information.

Back up your JasperReports Server War File:

1. Create a folder where you can save your `jasperserver` war file, for example `C:\JS_BACKUP` or `/opt/JS_BACKUP`.
2. Copy `<tomcat>/webapps/jasperserver` to `<path>/JS_BACKUP`

Back up your jasperserver Database:

1. Create a folder (if you did not do so in the step above) where you can save your `jasperserver` database, for example `C:\JS_BACKUP` or `/opt/JS_BACKUP`.
2. Run the following commands for PostgreSQL or MySQL:

- PostgreSQL

```
cd <path>/JS_BACKUP
pg_dump --username=postgres jasperserver > js-db-dump.sql
```

- MySQL

```
cd <path>/JS_BACKUP
```

Windows: `mysqldump --user=root --password=<password> jasperserver > js-db-dump.sql`

Linux: `mysqldump --user=root --password=<password> --host=127.0.0.1 jasperserver > js-db-dump.sql`



For MySQL, if you receive an error about packet size, see the Troubleshooting appendix of the *JasperReports Server Community Project Installation Guide*.

Back up your JasperReports Server Keystore:

1. Create a folder (if you did not do so already) where you can save your server's keystore, for example `C:\JS_BACKUP` or `/opt/JS_BACKUP`.
2. As the user who originally installed the server, copy `$HOME/.jrsks` and `$HOME/.jrsksp` to `<path>/JS_BACKUP`. Remember that these files contain sensitive keys for your data, so they must always be transmitted and stored securely.

3.4 Exporting Current Repository Data

To export using the `js-export-ce.bat/.sh` script, navigate to the `buildomatic` folder, for example, `<js-install-7.5>/buildomatic`. If you're using the PostgreSQL database, the `js-export` script should already be configured to run. If you're using a different database, or you've changed database passwords, you may need to update the `js-export` configuration.

Run the following commands:

1. Navigate to the `buildomatic` directory:

```
cd <js-install-7.5>/buildomatic
```

2. Run the `js-export` script:

Windows: `js-export-ce.bat --everything --output-zip js-7.5-export.zip`

Linux: `./js-export-ce.sh --everything --output-zip js-7.5-export.zip`



Note the location of the export file so that you can use it during the 8.0 upgrade process.

3.5 Preparing the JasperReports Server 8.0 WAR File Distribution

Use the `buildomatic js-upgrade` scripts included in the 8.0 WAR file distribution ZIP release package to carry out the upgrade. The WAR file distribution comes in a compressed ZIP file named `TIB_js-jrs-cp_8.0.0_bin.zip`.

Follow these steps to obtain and unpack the WAR file distribution ZIP file:

1. Download the WAR file distribution from [the Jaspersoft community site \(http://community.jaspersoft.com\)](http://community.jaspersoft.com).
2. Extract all files from `TIB_js-jrs-cp_8.0.0_bin.zip`. Choose a destination, such as a `C:\Jaspersoft` folder on Windows, `/home/<user>` on Linux, or `/Users/<user>` on Mac.

After you unpack the WAR File Distribution, the resulting location will be known as:

```
<js-install-8.0>
```

3.6 Configuring Buildomatic for Your Database and Application Server

This upgrade procedure uses the `js-upgrade-newdb-ce` shell script.



For Unix, the bash shell is required for the `js-upgrade` scripts. If you're installing to a non-Linux Unix platform such as IBM AIX, FreeBSD or Solaris, you need to download and install the bash shell. See the Troubleshooting appendix of the *JasperReports Server Community Project Installation Guide* for more information.

This section shows example configurations for the PostgreSQL and MySQL databases.

3.6.1 Example Buildomatic Configuration

The `default_master.properties` file handles the upgrade configuration. We provide a sample configuration file for each database. You must specify your database credentials and application server location, and rename

the file to `default_master.properties`.

3.6.1.1 PostgreSQL Example

To configure `default_master.properties` for PostgreSQL:

1. Locate the `postgresql_master.properties` sample configuration file.

Database	Master Properties File
PostgreSQL	<code><js-install-8.0>/buildomatic/sample_conf/postgresql_master.properties</code>

2. Copy the file to `<js-install-8.0>/buildomatic`
3. Rename the file `default_master.properties`
4. Edit `default_master.properties` for your database and application server.

Database	Sample Property Values
PostgreSQL	<pre>appServerType=tomcat (or wildfly, etc.) appServerDir=c:\\Apache Software Foundation\\Tomcat 9.0 (for example) dbUsername=postgres dbPassword=postgres dbHost=localhost</pre>

3.6.1.2 MySQL Example

To configure `default_master.properties` for MySQL:

1. Locate the `mysql_master.properties` sample configuration file:

Database	Master Properties File
MySQL	<code><js-install-8.0>/buildomatic/sample_conf/mysql_master.properties</code>

2. Copy the file to `<js-install-8.0>/buildomatic`
3. Rename the file `default_master.properties`
4. Edit `default_master.properties` for your database and application server.

Database	Sample Property Values
MySQL	<pre>appServerType=tomcat (or wildfly, etc.) appServerDir=c:\\Apache Software Foundation\\Tomcat 9.0 (for example) dbUsername=root dbPassword=password dbHost=localhost</pre>

3.7 Upgrading to JasperReports Server 8.0

Now that your `buildomatic` scripts are configured, you can complete the upgrade.



Make sure you've backed up your `jasperserver` database before proceeding.

Make sure you've backed up your old JasperReports Server WAR file before proceeding.

1. Stop your application server.
2. Start your database server.
3. Make sure that the user running the upgrade commands is the same user that installed the server.
4. Run the following commands:

Commands	Description
<code>cd <js-install-8.0>/buildomatic</code>	Change to buildomatic directory
<code>js-upgrade-newdb-ce.bat <path>\js-7.5-export.zip</code>	(Windows) Upgrade jasperserver war file, drop and recreate the database, import data file from previous version.
<code>./js-upgrade-newdb-ce.sh <path>/js-7.5-export.zip</code>	(Linux) Upgrade jasperserver war file, drop and recreate the database, import data file from previous version.

If you are prompted to create a new keystore, this means that the server's original keystore was not found in the user's home directory. Proceed with caution:

- In general, it is recommended to exit the upgrade procedure and make sure the keystore is in the proper location, then rerun the upgrade.
- If you continue and create a new keystore, then the upgrade will proceed but your repository will be corrupted and users unable to login. In this case, you will need to manually export the server's repository with a custom key, then import the key before importing the repository, as described in [A.2.3, “Encryption Keys,”](#) on page 29.

3.7.1 js-upgrade Test Mode

Use the `test` option to run the `js-upgrade` script in test mode. For example, on Windows, enter:

```
cd <js-install-8.0>/buildomatic
js-upgrade-newdb-ce.bat test <path>/js-7.5-export.zip
```

In test mode, the `js-upgrade` scripts check your `default_master.properties` settings and validate your application server location and its ability to connect to your database. Test mode can help you debug issues like an incorrect database password without altering your system.

3.7.2 Output Log Location

The `js-upgrade` script creates an output log that captures both standard and error output. If problems occur during script execution, or you just want to remember which options you chose, open the output log file located here:

```
<js-install-8.0>/buildomatic/logs/js-upgrade-<date>-<number>.log
```

3.7.3 Errors

If you encounter errors running the `js-upgrade` script, first look at the output log to see if you can spot the errors. For help, refer to the Troubleshooting appendix of the *JasperReports Server Community Project Installation Guide*. The information in this appendix applies to both `js-upgrade` scripts and `js-install` scripts.

If you need to modify values in your `default_master.properties` file, you can simply edit the file. When you run the `js-upgrade` script again, it uses the new values.

3.8 Starting and Logging into JasperReports Server 8.0

Start your application server. Your database should already be running.

3.8.1 Clearing Your Browser Cache

Before you log in, make sure you and your end users clear the browser cache. JavaScript files, which enable the UI elements of JasperReports Server, are typically cached by the browser. Clear the cache to ensure that the newer files are used.

3.8.2 Logging into JasperReports Server

Log in using the following URL, user IDs, and passwords:

URL: `http://localhost:8080/jasperserver`

User ID	Password	Description
<code>jasperadmin</code>	<code><your-password></code>	Administrator for the default organization

Your JasperReports Server instance has now been upgraded to 8.0. If you have startup or login problems, refer to the Troubleshooting appendix of the *JasperReports Server Community Project Installation Guide*.

3.9 Additional Tasks to Complete the Upgrade



Installing JasperReports Server automatically generates encryption keys that reside on the file system. These keys are stored in a dedicated TIBCO TIBCO keystore. Make sure this keystore is properly secured and backed up, as described in the *TIBCO JasperReports Server Security Guide*.

Perform these tasks with the application server shut down.

3.9.1 Handling JasperReports Server Customizations

If you made modifications to the original JasperReports Server application, these configurations are typically found in the `WEB-INF/applicationContext-*.xml` set of files.

You'll need to manually copy configuration changes, like client-specific security classes or LDAP server configurations, from your previous environment and integrate them with your upgraded environment.

3.9.2 Clearing the Application Server Work Folder

Application servers have work folders where JasperReports Server files are compiled and cached and other objects are stored. When you update the WAR file, the buildomatic `deploy-webapp-ce` target should automatically clear the application server's `work` directory, but it's a good practice to double-check. A permission problem, or some other problem, could prevent the clearing of the work folder.

To clear the work folder in Tomcat:

1. Change directory to `<tomcat>/work`.
2. Delete all the files and folders in this directory.

3.9.3 Clearing the Application Server Temp Folder

JasperReports Server uses caching to speed operations within the application. Caching files are created and stored in the application server, usually in a `temp` folder. Clear this `temp` folder to avoid any post-upgrade conflicts. Typically, the `temp` folder used by an application server corresponds to the path referenced by the `java.io.tmpdir` Java system property. For Apache Tomcat the `temp` folder is `<tomcat>/temp`.

To clear the temp folder in Apache Tomcat:

1. Change directory to `<tomcat>/temp`
2. Delete all the files and folders in this directory

3.9.4 Clearing the Repository Cache Database Table

In the `jasperserver` database, compiled JasperReports Library resources are cached in the `JIREpositoryCache` table for increased efficiency at runtime. Because the JasperReports Library JAR is typically updated with each new release, old cached items can get out of date and cause errors at runtime. If you encounter errors that mention a JasperReports Library “local class incompatible,” check your repository cache table. In summary, you can clear your `jasperserver` database cache table as part of this upgrade process whether or not there are errors.

To manually clear the repository cache database table, run a SQL command similar to one shown below:

```
update JIREpositoryCache set item_reference = null;
delete from JIREpositoryCache;
```

3.10 Old Manual Upgrade Steps

This section describes the older, manual upgrade steps used before we implemented the `js-upgrade` shell scripts in release 4.0. They're provided here mainly as a reference for internal use.

We recommend using the `js-upgrade` shell scripts described in the beginning of this chapter instead of these manual commands.

Commands	Description
<pre>cd <js-install-8.0>/buildomatic</pre>	
<pre>js-ant drop-js-db js-ant create-js-db js-ant init-js-db-ce</pre>	<p>Deletes and recreates your <code>jasperserver</code> db. Make sure your original database is backed up.</p>
<pre>js-ant import-minimal-ce</pre>	
<p>Windows:</p> <pre>js-ant import-upgrade -DimportFile="<path-and-filename>" -DimportArgs="--include-server- settings --secret-key='0x1b 0xd4 0xa6 ...'"</pre> <p>Linux:</p> <pre>js-ant import-upgrade -DimportFile="\<path-and-filename>\\" -DimportArgs="--include-server- settings --secret-key='0x1b 0xd4 0xa6 ...'\\"</pre>	<p>The <code>-DimportFile</code> should point to the <code><path></code> and <code><filename></code> of the <code>js-7.5-export.zip</code> file you created earlier.</p> <p><code>--include-server-settings --secret-key</code> specifies the key to use for the import. Use the same key you imported into the keystore.</p> <p>On Windows, you must use double quotation marks (") if your path or filename contains spaces. On Linux, you must use double quotation marks, escaped with a backslash (\") in this case. On Linux, you must also escape any single quotations marks with a backslash.</p> <p>Note: "import-upgrade" will import resources from the 7.5 instance in a "non-update" mode (so that core resources from 8.0 will stay unchanged). Additionally, the "update-core-users" option will be applied so that the superuser and jasperadmin users will have the same password as set in the 7.5 instance.</p>
<pre>js-ant import-sample-data-upgrade-ce</pre>	<p>(Optional) This step is optional; it loads the new sample data. The old sample data is overwritten, so you may need to redo certain changes such as configuring the sample data sources for your database.</p>
<pre>js-ant deploy-webapp-ce</pre>	<p>Deletes the existing older war file, deploys the new war file.</p>

CHAPTER 4 UPGRADING JASPERREPORTS SERVER 6.4.X OR EARLIER

4.1 Upgrading from 6.4.x or Earlier

If you're running JasperReports Server version 6.4.x or earlier, your upgrade requires multiple steps.

If you're running JasperReports Server 3.7 through 4.2:

1. Upgrade to the latest version of 6.3.x.
2. Upgrade 6.3.x to the latest version of 7.1.x.
3. Upgrade 7.1.x to version 8.0.

If you're running JasperReports Server 4.5 through 5.x:

1. Upgrade to the latest version of 6.4.x.
2. Upgrade from 6.4.x to the latest version of 7.1.x.
3. Upgrade from 7.1.x to version 8.0.

If you're running JasperReports Server 6.0 through 6.4.x:

1. Upgrade to the latest version of 7.1.x.
2. Upgrade from 7.1.x to version 8.0.

The steps for the upgrade to 6.3.x, 6.4.x, or 7.1.x are documented in the *JasperServer Installation Guide* for that release. Download the JasperReports Server WAR file distribution zip package for the release you want to get the relevant files and documentation. The Installation Guide is in the docs folder.

If you're running a JasperServer version earlier than 3.7, first upgrade to 3.7.0, then to 6.3.x, then to 8.0.

4.2 Best Practices for Upgrading on Windows

The two methods for installing JasperReports Server are:

1. Installing with the Binary Installer and Bundled Components

The binary installer is an executable that puts all the components in place to run JasperReports Server. For example, if you take the default installation choices, you'll get the Apache Tomcat application server, the PostgreSQL database and Java execution environment.

But keep in mind that these components are specially configured to run a specific version of JasperReports Server. This applies to the Windows Start Menu items created to start and stop JasperReports Server.

2. Installing to Pre-existing Components

When installing a “Production” instance of JasperReports Server, you may want to install the main components before you install JasperReports Server. This way you have more control over updating and upgrading components like the application server, database, and Java.

Once you put these components in place, you have two options for installing JasperReports Server:

- a. Use the War File ZIP distribution (file name: TIB_js-jrs-cp_8.0.0_bin.zip)
You'll install JasperReports Server to the existing components using the `js-install.bat` scripts. You'll create a `default_master.properties` file that specifies the location of the application server and database components.
- b. Use the Binary Installer, TIB_js-jrs-cp_8.0.0_win_x86_64.exe
The installer will prompt you for the location of the application server and database components.

If you intend to upgrade your Windows installation with future releases of JasperReports Server, we recommend installing to pre-existing components. This will reduce any post-upgrade confusion caused by the Windows Start Menu showing the older version of JasperReports Server.

APPENDIX A PLANNING YOUR UPGRADE

Some of the new and enhanced features in JasperReports Server can affect your deployment, and you should plan your upgrade accordingly. Before upgrading make sure to:

- Review this information carefully and determine how the changes described affect your deployment.
- Back up your current JasperReports Server installation, repository, and keystore.
- Run the upgrade script as the same user who originally installed the server, or make sure the server's keystore is available in the home directory of the user running the upgrade script.

The versions and their affected functionality are:

- Changes in 7.8 affect PhantomJS/Rhino JavaScript engine. With this release, the supported JavaScript engine is Chrome/Chromium.
- Changes in 7.5 affect Simba and Impala drivers, the MongoDB query language, custom themes, and encryption keys.
- Changes in 7.2 affect customizations to the login page, external authentication, and customizations to the Spring Security framework.
- Changes in 7.1 affect customizations to the login page.
- Changes in 6.1 affect themes.

Changes are cumulative, so review all topics that affect you. For example, if you're upgrading from 6.1 to 7.1, you may be affected by changes in 6.1, 6.2, 6.2.1, and 6.4.

For versions of the software earlier than 6.1, see earlier versions of the *JasperReports Server Community Project Upgrade Guide*.

This section describes only those changes that can significantly impact your existing deployment. For an overview of new features, improvements, and bug fixes see the release notes in the root directory of the distribution. For information on how to use the new features, see the *JasperReports Server User Guide* or the *JasperReports Server Administrator Guide*.

This chapter contains the following sections:

- **Changes in 7.8 That May Affect Your Upgrade**
- **Changes in 7.5 That May Affect Your Upgrade**
- **Changes in 7.2 That May Affect Your Upgrade**
- **Changes in 7.1 That May Affect Your Upgrade**
- **Changes in 6.1 That May Affect Your Upgrade**

A.1 Changes in 7.8 That May Affect Your Upgrade

A.1.1 Chrome/Chromium Updates

In the 7.8 release, the JavaScript engine is switched to Chrome/Chromium from PhantomJS/Rhino. JasperReports Server now uses the Chromium JavaScript engine to export reports to PDF and other formats. PhantomJS/Rhino support has been removed.

You need to install and configure Chrome/Chromium to export the reports to PDF and other output formats.



If you choose to continue the installation without Chrome/Chromium, reports cannot be exported to PDF, DOCX, and other output formats.

The configuration properties have been updated to support the Chrome/Chromium configuration.



For information about configuring Chrome/Chromium in JasperReports Server, see the *JasperReports Server Community Project Administrator Guide*.

A.2 Changes in 7.5 That May Affect Your Upgrade

A.2.1 Driver Updates

In the 7.5 release, the Simba JDBC drivers for Spark and Impala have been updated. By default, the new release supports the new JDBC drivers, and the old drivers cannot be used. You should update your data sources to use the new driver. For more information, see the *JasperReports Server Community Project Administrator Guide*.



The drivers have been replaced due to vulnerabilities from third-party libraries. Update your data sources to use the new drivers

A.2.1.1 Using the Old Impala Driver

If you want to continue using the Impala driver that was previously available from the community website, modify the install as described below.

1. Add the following files to the <js-install>/WEB-INF/lib directory:
 - Curator-client-2.6.0.jar
 - Curator-framework-2.6.0.jar
 - Curator-recipes-2.6.0.jar
 - Hive-metastore-1.2.2.jar
 - Hive-service-1.2.2.jar
 - Impala-jdbc4-1.0.44.1055.jar
 - Libfb303-0.9.3.jar

If you do not add the files listed, data sources that use the old Impala driver will cause errors when running reports that rely on them.

A.2.1.2 Using the Old Spark Driver

If you want to continue using the Spark driver that was previously available from the community website, modify the install as described below.

1. Add the following files to the <js-install>/WEB-INF/lib directory:
 - Curator-client-2.6.0.jar
 - Curator-framework-2.6.0.jar
 - Curator-recipes-2.6.0.jar
 - Hive-metastore-1.2.2.jar
 - Hive-service-1.2.2.jar
 - Spark-jdbc4-1.1.1.1001.jar
 - Libfb303-0.9.3.jar

If you do not add the files listed, data sources that use the old Spark driver will cause errors when running reports that rely on them.

A.2.2 Changes to the TIBCO MongoDB Query Language

The TIBCO MongoDB Query Language has been updated to reflect changes in the MongoDB driver:

- All aggregate commands must be updated to the new API-driven query syntax.
- All other command-driven queries (queries that use `runCommand`) are deprecated. If you want to use your queries in a future release, you should update them to the new syntax.

See the [language reference](#) for more information.

A.2.3 Encryption Keys

JasperReports Server 7.5 streamlines how it manages the encryption keys it uses to protect sensitive data inside and outside of the server. There is no more any need to configure the encryption keys because all keys are generated automatically during the installation and stored in a central keystore. The keys are used transparently whenever the server stores passwords internally or exports sensitive data. And as long as the same user performs the upgrade, the upgrade scripts have access to the same keys in the keystore.

The new keys are backward compatible with the default keys from previous servers. However, there are possible cases when you need to manage keys during an upgrade. For example, if you do not have access to the user who installed the 7.5 instance, you may not be able to access the keystore anymore.

If you are in this situation, you should plan your upgrade as follows:

1. Before starting, back up your original 7.5 server.
2. Then export everything from your running 7.5 server with the following command:

```
cd <js-install-7.5>/buildomatic
js-export.sh --everything --output-zip js-7.5-export.zip --genkey
```

This encrypts the export with the key that is displayed on the console output:

```
Secret Key: 0xb1 0x44 0x72 0x0a 0xe9 0x5b 0x39 0xf5 0x87 0x5c 0xa9 0x1b 0x99 0x9d 0x14 0x4c
Key Alias (UUID): 9e41cd54-31da-43aa-84c2-638a7d0b47b8
```

3. Proceed with the upgrade and installation of the new server, but without migrating your data.
4. Import the key into your upgraded server with the following command.

```
./js-import.sh --input-key "0xb1 0x44 0x72 0x0a 0xe9 0x5b 0x39
    0xf5 0x87 0x5c 0xa9 0x1b 0x99 0x9d 0x14 0x4c"
--keyalias 9e41cd54-31da-43aa-84c2-638a7d0b47b8
--keyalg AES --keypass NewKeyPassword
```

5. Proceed with the migration of your data to the upgraded server, or manually import your catalog to the upgraded server. As the data is imported, it is decrypted with the given key, and re-encrypted with the server's new keys.
6. Once the server is ready for production, back up your data and new keystore once again.

For more information and procedures for importing keys, see the *TIBCO JasperReports Server Security Guide*.

A.2.4 Theme Changes

The look and feel of the JasperReports Server web interface has been redesigned to modernize the application's appearance. To accomplish this, markup and styles have been modified. As a result of these modifications, custom themes developed for the previous interface will need to be updated for the new interface. The main changes are in the banner, body, and home page.

The following table lists the changes made to the user interface, except for the changes to the home page. The changes to the home page are extensive. Instead of attempting to update an existing home page, you should re-implement the home page in the new default theme.

If you have not customized the user interface, these changes will not affect you.

A.2.4.1 Banner

Element	Classname and Modifications	File	Notes
Banner	.banner Changed background-color, font-family and height	containers.css	Default value: background-color: #062e79 font-family: source_ sans_proregular height: 40px
Body	#frame Changed the top value to fit the body of the application between the banner and footer without overlap	containers.css	Default value: top: 40px

Element	Classname and Modifications	File	Notes
Banner Logo	#logo Changed width and height. Responsive behavior was added to the banner. There is now a breakpoint at which the logo shrinks in size (1100px) and a breakpoint at which it becomes hidden (980px).	theme.css	Default values: height: 23px width: 200px Breakpoint from 981-1100px: width: 150px 980px and below: display: none
Banner Main Navigation home icon	.menu.primaryNav #main_home .wrap > .icon New sprites for background-image: one for standard-resolution displays and one for high-resolution displays.	containers.css	Default value: background-image: url (images/banner_icons_sprite@1x.png) High resolution value: background-image: url (images/banner_icons_sprite@2x.png)
Banner Main Navigation Item text	.menu.primaryNav .wrap Enlarged font-size. Changed height and line-height to be 1px shorter than .banner.	containers.css	Default values: font-size: 14px height: 39px line-height: 39px
Banner Main Navigation Item arrow icon	.menu.primaryNav .node > .wrap > .icon New sprites for background-image: one for standard-resolution displays and one for high-resolution displays. Changed height of icon container.	containers.css	Default values: background-image: url (images/disclosure_icons_sprite@1x.png) height: 16px High resolution value: background-image: url (images/disclosure_icons_sprite@2x.png)
Banner Metadata container	#metalinks Changed height to be 1px shorter than .banner. Increased margin-right to accommodate search box. With the addition of responsive behavior, the margin-right value changes at certain breakpoints to accommodate a smaller search box.	theme.css	Default values: height: 39px margin-right: 270px Breakpoint from 821-1100px: margin-right: 200px Breakpoint from 751-820px: margin-right: 140px

Element	Classname and Modifications	File	Notes
Banner Metadata text	#metalinks li Enlarged font-size. Increased line-height to vertically center text in the banner	theme.css	Default values: font-size: 14px line-height: 39px
Banner Search container	#globalSearch.control.searchLockup Increased width of container Responsive behavior was added to the banner. There are now breakpoints at which the search container shrinks in width and a breakpoint at which it becomes hidden.	controls.css	Default value: width: 250px Breakpoint from 821-1100px: width: 180px Breakpoint from 751-820px: width: 100px 750px and below: display: none
Banner Search input wrapper	#globalSearch.control.searchLockup > .wrap Increased height of input wrapper.	controls.css	Default values: height: 28px
Banner Search input	#globalSearch.control.searchLockup > .wrap > input[type=text] Responsive behavior was added to the banner. There are now breakpoints at which the search input shrinks in width and a breakpoint at which it becomes hidden.	controls.css	Default value: width: 200px Breakpoint from 821-1100px: width: 130px Breakpoint from 751-820px: width: 80px 750px and below: display: none
Banner Search button icon	#globalSearch .button.search New sprites for background-image: one for standard-resolution displays and one for high-resolution displays.	controls.css	Default value: background-image: url (images/search_icons_sprite@1x.png) High resolution value: background-image: url (images/search_icons_sprite@2x.png)

A.3 Changes in 7.2 That May Affect Your Upgrade

A.3.1 Changes to the Login Page

The layout of the login page changed in JasperReports Server 7.2. There were no changes to the CSS classes, but some default values were changed. If you have customized the login page, test your customizations to ensure they have the desired effect in 7.2, and make any necessary changes. If you haven't customized the login page, this change doesn't affect you.

A.3.2 Spring Security Upgrade

JasperReports Server uses the Spring Security framework to implement security throughout the product. In JasperReports Server 7.2, the Spring Security framework was updated to Spring Security 4.2. For many users, this upgrade will have no impact. However, you may need to make some changes if you have implemented the following:

- External authentication – If you have implemented external authentication or single sign-on in your server implementation, you need to update your implementation:
 - If you implemented external authentication using one of the sample files included in the project, you need to re-implement your changes in the updated sample files included in JasperReports Server 7.2.
 - If you implemented a custom external authentication solution, you need to migrate your solution to the new framework.
- Customizations – If you have customized the server using Spring Security classes, you need to migrate your solution to the new framework.

A.3.2.1 Migrating External Authentication Sample Files

If you have implemented external authentication using one of the sample-applicationContext-`<customName>.xml` files located in the `<js-install>/samples/externalAuth-sample-config` directory, migrate your changes to JasperReports Server 7.2 as follows:

1. Prior to upgrade, back up your existing applicationContext-`<customName>.xml` (for example, applicationContext-externalAuth-LDAP.xml), located in the `<js-webapp>/WEB-INF` directory of your previous version of JasperReports Server.
2. Update your server installation to JasperReports Server 7.2, as described in the *JasperReports Server Community Project Upgrade Guide*.
3. In the new installation, locate the sample file that corresponds to the file you implemented previously. For example, if you implemented applicationContext-externalAuth-LDAP.xml, locate `<js-install-7.2>/samples/externalAuth-sample-config/sample-applicationContext-externalAuth-LDAP.xml`.
4. Rename the JasperReports Server 7.2 sample file to remove the sample- prefix. For example, rename sample-applicationContext-externalAuth-LDAP.xml to applicationContext-externalAuth-LDAP.xml.
5. Configure the properties in the new sample file to match the properties in your existing sample file. To do this:
 - a. Locate each bean you have modified in the previous version.
 - b. Find the same bean in the JasperReports Server 7.2 sample. The names of the beans have not changed between versions.
 - c. Copy or re-enter the properties you need for your server, taking care not to copy over class names or class packages.



Although the bean names are the same in the JasperReports Server 7.2 sample files, the name and package of the class in many bean definitions have changed. Make sure not to overwrite the new names with the old ones.

- d. Save the JasperReports Server 7.2 sample file.
- e. Rename the JasperReports Server 7.2 sample file to remove the sample- prefix. For example, rename sample-applicationContext-externalAuth-LDAP.xml to applicationContext-externalAuth-LDAP.xml.
- f. Place the modified file in the <js-webapp-7.2>/WEB-INF directory.

A.3.2.2 Migrating Customizations

The Spring Security codebase was significantly restructured from 3.x to 4.x. Many classnames have changed and other classes were moved to different packages. In addition, many classes were deprecated. At a minimum, you need to update the names and paths of the Spring Security classes you reference in any customizations you have made to JasperReports Server. For information on updating your customizations see the Spring Security migration guide:

<https://docs.spring.io/spring-security/site/migrate/current/3-to-4/html5/migrate-3-to-4.xml.html>

For specific information about migrating from deprecated classes in 4.x, see the [Deprecations](#) topic in the same document.

A.4 Changes in 7.1 That May Affect Your Upgrade

A.4.1 Changes to the Login Page

The layout of the login page changed in JasperReports Server 7.1. There were no changes to the CSS classes, but some default values were changed. If you have customized the login page, you should make sure your customizations still have the desired effect in 7.1, and make any necessary changes.

If you have not customized the Login page, this change will not affect you.

A.5 Changes in 6.1 That May Affect Your Upgrade

A.5.1 Changes to Themes

The look and feel of the JasperReports Server web interface has been redesigned to modernize the application's appearance. To accomplish this, markup and styles have been modified. As a result of these modifications, custom themes developed for the previous interface will need to be updated for the new interface.

The following table lists the changes made to the user interface and describes some of the steps necessary to update custom themes in `overrides_custom.css`. The main changes are in the banner, body, footer, and login page. The changes to the login page are extensive. Instead of attempting to update an existing login page, you should re-implement the login page in the new default theme.

For information on developing new themes, see the *JasperReports Server Community Project Administrator Guide* and the *TIBCO JasperReports Server Ultimate Guide*.

Table A-1 Updating Themes in JasperReports Server 6.1

Element	Classname and Modifications	File	Notes
Banner	<code>.banner</code> Give custom value to <code>height</code>	<code>containers.css</code>	Default value: <code>height: 32px</code>
Body	<code>#frame</code> Set custom <code>top</code> and <code>bottom</code> values that position the body of the application between the banner and footer without overlap	<code>containers.css</code>	Default value: <code>top: 32px</code> <code>bottom: 17px</code> This value needs to be equal to or greater than the height of <code>.banner</code> The bottom position needs to be adjusted only if the height of the footer is changed
Banner Logo	<code>#logo</code> Give custom values to height and width that match the dimensions of your logo Adjust margins around the logo if needed	<code>theme.css</code>	Default values: <code>height: 22px</code> <code>width: 176px</code> <code>margin-top: 6px</code> <code>margin-right: 4px</code> <code>margin-bottom: 0</code> <code>margin-left: 8px</code>
Banner Main Navigation	<code>.menu.primaryNav .wrap</code> Set height and line-height to 1px shorter than <code>.banner</code>	<code>containers.css</code>	<code>height: 31px</code> <code>line-height: 31px</code>

Element	Classname and Modifications	File	Notes
Banner Main Navigation Home icon	<code>.menu.primaryNav #main_home .wrap > .icon</code> Set height to be the same as <code>.banner</code> Set values for width and background-position to fit your image.	containers.css	height: 32px width: 14px background-position: 0 - 164px background-position: 0 - 163px (IE8-9)
Banner Main Navigation Item arrow icon	<code>.menu.primaryNav .node > .wrap > .icon</code> Set height to your desired value, with the maximum value being the same height measurement as the <code>.banner</code> element. Set background-position and width to a value that properly displays the default or your custom image.	containers.css	height: 32px background-position: left -79px width: 11px
Banner Main Navigation Item arrow icon	<code>.menu.primaryNav .wrap.over</code> <code>.menu.primaryNav .wrap.pressed</code> Set background-position to a value that properly displays the default or your custom image.	containers.css	background-position is not explicitly defined, the value is cascaded from <code>.menu.primaryNav .node > .wrap > .icon</code> This only needs to be adjusted if you want a different color disclosure indicator for the pressed and over states of the main menu links
Banner Search container	<code>#globalSearch.searchLockup</code> Set margin-top to desired value that will vertically center it within the banner.	controls.css	margin-top: 5px
Banner Metadata	<code>#metalinks li</code> Set line-height to the desired value that will vertically center it within the banner.	themes.css	line-height: 20px
Footer	<code>#frameFooter</code> Set height if you want it to be anything other than the default value.	containers.css	height: 17px
Login page	Re-implement in new theme.		

APPENDIX B WORKING WITH JDBC DRIVERS

This section describes how to set up your installation to use a driver other than the default driver.

B.1 Open Source JDBC Drivers

For open source JDBC drivers, buildomatic is set up to use a single default driver. If you want to use a driver other than the default driver, you can modify the buildomatic property files that determine the default JDBC driver.

The buildomatic JDBC driver property files are set up to point to a specific driver jar. This allows for multiple driver jar files in the same `buildomatic/conf_source/db/<dbType>/jdbc` folder. During the installation procedure only the default driver jar is copied to your application server.

If you want to use a newer JDBC driver version or a different JDBC driver, you can modify the buildomatic properties seen in your `default_master.properties` file.

B.1.1 PostgreSQL Example

The `buildomatic/conf_source/db/postgresql/jdbc` folder contains the following driver file:

```
postgresql-42.2.16.jar
```

If, for instance, you want to change the default driver used by PostgreSQL from type `jdbc4` to `jdbc3`, edit your `default_master.properties` file:

```
<js-install>/buildomatic/default_master.properties
```

Uncomment and change:

```
# maven.jdbc.version=42.2.16
```

To:

```
maven.jdbc.version=9.2-1002.jdbc3
```

When you next run a buildomatic command, such as `deploy-webapp-ce`, the `jdbc3` driver will be copied to your application server.

B.1.2 MySQL Example

The `buildomatic/conf_source/db/mysql/jdbc` folder contains this driver file:

```
mariadb-java-client-2.5.3.jar
```

If, for instance, you want to use a JDBC driver built and distributed by the MySQL project, such as `mysql-connector-java-5.1.30-bin.jar`, you first need to download the driver from the MySQL Connector/J download location:

```
https://dev.mysql.com/downloads/connector/j/
```

Next, change your buildomatic configuration properties to point to this new driver.

Edit your default_master.properties file:

```
<js-install>/buildomatic/default_master.properties
```

Uncomment and change:

```
# jdbcDriverClass=com.mysql.jdbc.Driver
# maven.jdbc.groupId=mysql
# maven.jdbc.artifactId=mysql-connector-java
# maven.jdbc.version=5.1.30-bin
```

To:

```
jdbcDriverClass=com.mysql.jdbc.Driver
maven.jdbc.groupId=mysql
maven.jdbc.artifactId=mysql-connector-java
maven.jdbc.version=5.1.30-bin
```