# JasperReports® Server Community Release Notes

*Software Release 7.2*

TIBC⦿®

**Important Information**

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# CHAPTER 1     INTRODUCTION

JasperReports® Server Community Project is a high-performance standalone or embeddable Business Intelligence (BI) platform that provides rich reporting and integrated in-memory analysis capabilities. In addition, Jaspersoft® OLAP provides data analysis running on the same shared BI platform.

These release notes describe the installation and available functionality at a high level; for details, see the documentation, which is available at:

* http://community.jaspersoft.com/documentation
* https://docs.tibco.com
* <js-install-ce>/docs (after installation)

In particular, see the *JasperReports Server Installation Guide* for instructions about running the installer, creating and updating the database, and deploying the WAR file; see the *JasperReports Server Upgrade Guide* for instructions on upgrading from previous versions.

> JasperReports Server is governed by a License Agreement, the text of which is found at <js-install>/Jaspersoft-Subscription-Services-Agreement.txt. Please read it before you login to JasperReports Server for the first time. If you installed the server using an installer binary (rather than deploying a WAR file), you have already agreed to this license.

These release notes include the following:

* **What's New**
* **Installation and Basic Usage**
* **Upgrade Notes**
* **Known Issues**
* **Release Distributions**

# Chapter 2    What's New

This section describes new features introduced in the Jaspersoft BI Suite Version 7 release. For information regarding features added to Version 6 releases, see the latest 6.4.x release notes.

## 2.1    Version 7.2.0

JasperReports Server 7.2.0 adds these improvements:

- **New platforms**. This release adds several new third-party platforms:
  - Application servers:
    - Tomcat versions 9.0.1 through 9.0.17
    - WildFly 13, 14, 15, and 16
  - Database Servers:
    - PostgreSQL 10.5
- **Accessibility Support**. To help visually impaired users, we improved keyboard and screen-reader support in the report viewer. You can now navigate the main report viewer menu structure using the keyboard and hear interface descriptions using JAWS-enabled screen readers.
- **JasperReports Library**. This new version provides dynamic control of page numbers.
- **Jaspersoft Studio 7.3**. This new version supports Spotfire 7.11 and higher.

> The configuration of the `ResourceForwardingServlet` servlet has changed since Release 6. For more information, refer to the **, "New Configuration," on page 9** in **Version 7.1.0**, below.

## 2.2    Version 7.1.1

Version 7.1.1 was a maintenance release that included improvements requested by customers. For information about the status of specific cases, please visit TIBCO Jaspersoft Technical Support (http://support.tibco.com). In addition, we updated the version of Tomcat: Apache Tomcat 8.5.34

## 2.3    Version 7.1.0

JasperReports Server 7.1.0 added these improvements:

- **Jaspersoft Studio**. Several new features are available in our report designer:

- Support for properties in datasets and query executers. Better support for fields and parameters in the Dataset and Query dialog, including support for field properties on the **Fields** tab and show and hide built-in parameters, and the ability to display, create, and edit parameter properties on the Parameters tab. This lets you configure your fields and parameters directly in the Dataset and Query dialog.
- Data adapters that connect to a web service. You can now create data adapters that connect to a web service. You configure these data adapters in the data adapter dialog. When you use this type of data adapter in a report, you can access it in the Dataset and Query dialog: you can auto-discover fields from a node you enter in the query dialogs and view and manage HTTP parameters on the Data Adapter tab.
- Enhanced Properties UI. The advanced properties dialog now displays a searchable list of available properties. You can create expressions, toggle the view to the old Properties dialog, and add properties for your custom classes. Most elements now support expressions in properties.
- Support for Data Snapshots. Jaspersoft Studio now lets you create a JasperReports data snapshot, which contains a sample dataset that contains all sample data necessary to run the report. Storing the data for a report makes it easier to develop reports while offline or to share a functional report with other developers.

You can still create reports and connect to the latest JasperReports Server with previous versions of Jaspersoft Studio.

- **New Platforms**. Components included in the installer have been updated to:
  - PostgreSQL 9.3.20
  - Tomcat 8.5.34
  - Oracle JDK 8 version 1.8.0_201 (8u201)
  - Spring Framework 3.2.18
- **New Third-party Software Support**. This release adds support for Oracle 12c as a host for the JasperReports Server repository and WebLogic 12.2.1 as the application server.
- **Security Improvement**. JasperReports Server implements a new mechanism to protect against clickjacking attacks. To enable this mechanism, edit a configuration file.

1. Using a text editor, open the applicationContext-security-web.xml file (found in <js-install>\apache-tomcat\webapps\jasperserver-pro\WEB-INF).
2. Locate the `antiClickJackingEnabled` property in the `webAppSecurityFilter` bean, and set it to true. Setting this property to true instructs JasperReports Server to include an X-Frame-Options header in every response.
3. You can also set the `antiClickJackingOption` property to control the header value. Valid values are:
   - `DENY` - JasperReports Server doesn't load into any iframe.
   - `SAMEORIGIN` - JasperReports Server only loads into an iframe on a page in the same domain as JasperReports Server.
   - `ALLOW-FROM` - JasperReports Server only loads in a frame on a page specified in `antiClickJackingUri` property.
4. If you set the antiClickJackingOption property to `ALLOW-FROM`, also be sure to set the `antiClickJackingUri` property to a valid URI.
5. Save the file and restart the server.

> If you use iframes to embed JasperReports Server (including use of Visualize.js), set the `antiClickJackingOption` to either `SAMEORIGIN` (if the embedding host is on the same domain as JasperReports Server) or `ALLOW-FROM` (if the embedding host is on a different domain than JasperReports Server). If you use `ALLOW-FROM`, also set the `antiClickJackingUri` property.
>
> Clickjack protection doesn't support cases in which multiple domains embed JasperReports Server.

- **Directory Access Control.** A new option controls access to resources in the file system of the JasperReports Server host using the `ResourceForwardingServlet` servlet. The servlet forwards requests to handle browser caching. For example, when it receives calls to `/runtime/<hex-code>/<my-resource>`, it forwards them to `/<my-resource>`.

  The servlet controls access using a whitelist that can include both resource and directory names; for simplicity here, we use the term *directories*.The whitelist defines the directories to which access is granted; access to other directories is denied. By default, it lists all the directories that JasperReports Server requires.

**New Configuration**

> Note that this approach differs from the previous implementation, and requires intervention in fewer cases. In general, you don't need to change it. We recommend that any additions you make to the whitelist be considered carefully and tested thoroughly.
>
> We advise against removing the default values from the list, as this would impair functionality.

To configure this list, edit the `forwardWhitelist` parameter of the `ResourceForwardingServlet` servlet in the web.xml file.

1. Using a text editor, open the web.xml file (found in <js-install>\apache-tomcat\webapps\jasperserver-ce\WEB-INF).
2. Locate the `init-param` section of the `ResourceForwardingServlet` servlet.
3. In the `param-value` section of the `forwardWhitelist` parameter, review the comma-separated list of directories that JasperReports Server users should be able to access. This parameter can only list directories under the jasperserver-ce deployment directory.
4. If you make changes, save the file, restart the server, and test the application thoroughly.

> In a previous version, access to the application's resources was controlled by a blacklist. The blacklist has been removed in favor of this whitelist.
>
> The previous approach sometimes required additional steps. For example, if you restricted access using the `security-constraint` tag in web.xml, you may have also restricted that access using the `ResourceForwardingServlet` servlet. This step is no longer necessary, since access is now denied by default.
>
> If a high-priority case requires you to customize the `ResourceForwardingServlet` servlet and use JasperReports Server to cache a third-party resource, you might consider editing this list and making further customizations; we advise against such changes due to the security risks they might pose.

# CHAPTER 3   INSTALLATION AND BASIC USAGE

This section includes:

- **Installation**
- **Login**
- **Starting and Stopping**

## 3.1   Installation

You can install JasperReports Server either by running an executable installer or deploying a WAR file. For evaluations, we recommend the installer; for most production instances, we recommend the WAR file. Both the executable and the WAR file are available from the Jaspersoft community site (http://community.jaspersoft.com); download:

- `TIB_js-jrs-cp_7.2.0_<osType>-<arch>.<ext>`
- `TIB_js-jrs-cp_7.2.0_bin.zip`

For more information, see the installation guide, which is found at <js-install-ce>/docs/JasperReports-Server-CP-Install-Guide.pdf.

### 3.1.1   Binary Installer

To install JasperReports Server, you can use the binary installer, which is available for Windows, Linux, and Mac: `TIB_js-jrs-cp_7.2.0_installer-<osType>-<arch>.<ext>`

Double-click the installer and accept the default installation type to create a standard installation. Select the custom installation type to configure your instance to specify the application server and RDBMS to use, among other options. The installer can also be run from the command line.

### 3.1.2   War File Distribution ZIP js-install Script Installation

You can use the js-install command-line shell scripts if you are installing to the third-party products listed in **6.2, "WAR File Binary Distributions," on page 20**. The scripts are found in this WAR file Distribution ZIP file: `TIB_js-jrs-cp_7.2.0_bin.zip`.

**To install:**

1.  Go to the buildomatic folder, create and edit a default_master.properties file, and run js-install-ce.sh/bat:

```
cd <js-install>/buildomatic

cp sample_conf/<dbType>_master.properties default_master.properties
```

2.  Using a text editor, edit default_master.properties to add your application server and database server properties:

```
./js-install.sh (or js-install.bat)
```

3.  Then change the JAVA_OPT memory options for your application server following instructions from the installation guide. For example, under Linux with Tomcat running on JDK 1.8, add the following to the top of the <tomcat>/bin/setclasspath.sh file:

```
export JAVA_OPTS="$JAVA_OPTS -Xms1024m -Xmx2048m"

export JAVA_OPTS="$JAVA_OPTS -Xss2m -XX:+UseConcMarkSweepGC -XX:+CMSClassUnloadingEnabled"
```

4.  Next, copy your jasperserver.license to your application server user's home folder:

```
cp <js-install>/jasperserver.license <path-to-home-folder>
```

## 3.2    Login

To login after installation, use the following URL:

```
http://<hostname>:8080/jasperserver
```

These users are created during installation:

| Default User | Password |
|---|---|
| **Always created** | |
| jasperadmin | jasperadmin |

If you install the sample data, these users are also created:

| Sample User | Password |
|---|---|
| joeuser | joeuser |

For security reasons, always change the default passwords immediately after installing JasperReports Server.

## 3.3    Starting and Stopping

This section describes how to start and stop the server if you installed using the binary installer. If you used another installation method, see the *JasperReports Server Installation Guide*.

### 3.3.1    Windows

You can start and stop from the Windows menu: click **Programs > JasperReports Server 7.2.0  CP > Start and Stop > Start Service or Stop Service**.

### 3.3.2    Linux

You can start and stop from the command line:

```
./<js-install>/ctlscript.sh (start|stop)
```

### 3.3.3    Mac OS X

From Finder, double-click the start, stop, or login apps:

```
/Applications/jasperreports-server-cp-7.2.0/jasperServerStart.app
/Applications/jasperreports-server-cp-7.2.0/jasperServerStop.app
/Applications/jasperreports-server-cp-7.2.0/jasperServerLogin.app
```

Alternatively, you can start/stop from the OS X command line:

```
./<js-install>/ctlscript.sh (start|stop)
```

# CHAPTER 4    UPGRADE NOTES

This section includes:
- **Introduction**
- **Database Changes**
- **Important Upgrade Information**

## 4.1    Introduction

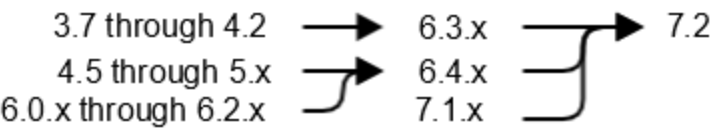Your current version determines your upgrade path:



**Figure 4-1  Paths for Upgrading to Version 7**

You can upgrade directly to 7.2.0 if your instance is one of the following:

| Version 6 | 6.3.x | 6.4.x |
|---|---|---|
| Version 7 | 7.1.x | |

If your instance is one of the older versions listed below, you must first upgrade to the latest version of 6.3.x or 6.4.x before upgrading to 7.2.0:

| Version 6 | 6.0.x | 6.1.x | 6.2.x | | |
|-----------|-------|-------|-------|-------|-------|
| Version 5 | 5.0 | 5.1 | 5.2 | 5.5 | 5.6.x |
| Version 4 | 4.0 | 4.1 | 4.2.x | 4.5.x | 4.7.x |

**Figure 4-1** shows the upgrade path from version 4.5.x through 6.2.x passing through version 6.4.x. You can choose either 6.3.x or 6.4.x as that intermediary version. For information about upgrading to 6.4.x, please see the latest 6.4.x release notes.

To upgrade, start with the WAR File Distribution ZIP: `TIB_js-jrs-cp_7.2.0_bin.zip`

Downloaded it from the Jaspersoft community site (http://community.jaspersoft.com).

The recommended upgrade procedures are fully described in the *JasperReports Server Upgrade Guide*.

If you are upgrading from certain versions of JasperReports Server, such as 6.0.1, 6.1, or 6.2.0, the upgrade involves substantial changes that may require you to plan and prepare beforehand. See the *JasperReports Server Upgrade Guide* for advice regarding these important considerations. Also, see **4.3, "Important Upgrade Information," on page 16**.

## 4.2    Database Changes

Between certain versions of the server, we have changed the repository database in order to add new functionality. There are changes between 6.4.x, 7.1.x, and 7.2.

## 4.3    Important Upgrade Information

This section touches on special considerations for upgrading to this release. These considerations are spelled out more thoroughly in the *JasperReports Server Upgrade Guide*.

- **Changes in the 7.2 Release**. Several new features and changes in this release may affect your upgrade. For example, legacy dashboards are no longer available to view or edit in this release. For information about preparing for such changes, see *Changes in 7.2 that May Affect Your Upgrade* in the upgrade guide.
- **Changes in the Version 6 Releases**. JasperReports Server Version 6 releases included many changes that may impact the upgrade steps in unexpected ways. We made such changes in 6.0.x, 6.1.x, 6.2.x, and 6.4.x. For example, changes in 6.2.1 replaced the drivers used by Impala and Simba data sources. For more information about other considerations when upgrading to version 7 from older versions, please refer to the latest 6.4.x upgrade guide.

# CHAPTER 5    KNOWN ISSUES

This section describes issues you may need to be aware of, including:

- **Current Known Issues**
- **Known Issues Addressed in this Release**
- **Known Issues Addressed in Previous Releases**

For information about the status of specific cases, please visit TIBCO Jaspersoft Technical Support
(http://support.tibco.com). For information regarding known issues found or addressed in Version 6 releases, see
the 6.4.x release notes.

## 5.1    Current Known Issues

We're aware of these issues in this release of JasperReports Server:

- **JRS-15530**: The UI Samples page for administrators, available in previous releases, has been removed.
  When testing themes and other cosmetic changes or customizations to the web UI, please navigate to a
  page with the component you're changing rather than viewing the samples page. We may address this issue
  in a subsequent release.

## 5.2    Known Issues Addressed in this Release

These defects, which were listed in the release notes of previous versions, were addressed in this release:

- **JRS-15525**: In the course of testing Wildfly 8.1 with earlier versions of JasperReports Server, we discovered
  issues that prevented the server from starting. Because the issues aren't present later versions of WildFly, we
  have ended support for Wildfly 8.1.
- **JS-20916** (was 32168): Though we didn't strictly support the practice, you could create a clone install of
  previous versions of JasperReports Server in JBoss. In more recent JBoss versions, issues with clone install
  of JasperReports Server force us recommend against their use. For more information, see this article on our
  Community website.
- **JS-30583** (was 43387): We are aware of significant performance issues when the server is run in certain
  versions of Tomcat. We no longer support version 8.0.x, and recommend 8.5.34 or later.

## 5.3     Known Issues Addressed in Previous Releases

These defects, which were listed in the release notes of previous versions, were addressed in a previous release:

- **JA-926** (was 35986): When upgrading from earlier versions (such as 5.2), users had to take additional steps if they connected Jaspersoft OLAP's XML/A functionality to a remote JasperReports Server's XML/A sources. For more information, refer to the upgrade instructions for the latest version of JasperReports Server 5.6.x.

- **JRL-30**: When JasperReports Server is hosted under certain combinations of Windows and application servers (such as WildFly 9 on Windows 8.1 or Tomcat 8 on Windows 10), the server becomes unresponsive when a user exports a report; the server responds again once the export completes. We added instructions for working around this problem to the *JasperReports Server Administrator Guide*.

- **JRS-11883**: Some application servers, such as Tomcat, are ending their support of the pipe character (|), which is the delimiter between a user's name and organization when they are passed as a URL to the server; in this case, the application server returns an illegal character error. Our examples and documentation now use `%7c` instead of pipe.

  For example, instead of:

  ```
  homeFlow&j_username=jasperadmin|organization_1
  ```

  we now use:

  ```
  homeFlow&j_username=jasperadmin%7Corganization_1
  ```

- **JRS-15389**: Some required and optional Tomcat configurations were mischaracterized in our user documentation. See the *JasperReports Server Installation Guide* and *JasperReports Server Security Guide* for corrected steps.

# CHAPTER 6    RELEASE DISTRIBUTIONS

This section describes:

- **Installation Executables**
- **WAR File Binary Distributions**

For more information, see the *Jaspersoft Platform Support* document, which is available from the Jaspersoft community site (http://community.jaspersoft.com).

## 6.1    Installation Executables

The provided executables support various operating systems and install the required components.

### 6.1.1    Operating Systems

The installers are available for 64-bit versions of these operating systems:

| Linux Installer | Windows Installer | Mac OS X Installer | Other |
|---|---|---|---|
| • Red Hat Enterprise Linux 6.10, 7.4,7.5<br>• Novell SUSE Linux Enterprise Server 12.1<br>• Ubuntu 14.04 LTS and18.04 LTS<br>• CentOS 6.x and 7.x | • Windows 10, 2012, and 2016 | • Mountain Lion (10.8)<br>• Maverick (10.9)<br>• Yosemite (10.10.1)<br>• El Capitan (10.11)<br>• Sierra (10.12) | • Solaris SPARC 10 and 11<br>• HP-UX 11.31<br>• FreeBSD 12<br>• IBM AIX 7.2<br>• Debian 8 and 9 |

### 6.1.2    Components in the Installer

The executable installers contain all the components needed to run the JasperReports Server web application, including:

- Apache Tomcat 8.5.34
- PostgreSQL 9.3.20
- Oracle JDK 8 version 1.8.0_201 (8u201)

- JasperReports Server Web Application (WAR) file
- PhantomJS 2.1.1

> During installation, you can choose whether to use an existing instance of Tomcat or create a new one to host JasperReports Server. Similarly, you can choose whether to use an existing instance of PostgeSQL or create a new one. These choices are entirely independent; you can use either an existing instance or create a new instance of either.

## 6.2 WAR File Binary Distributions

The WAR File Binary Distribution contains sample configurations and repository database setup scripts for the following applications.

### 6.2.1 Java Virtual Machines

- Oracle JDK 1.8
- OpenJDK 1.8
- IBM JDK 1.8

> Only 64-bit JDKs are supported.

### 6.2.2 Application Servers

- Apache Tomcat:
    - Tomcat 8.5.0 through 8.5.39 (we recommend 8.5.34)
    - Tomcat 9.0.1 through 9.0.17
- Glassfish 4.1.2
- JBoss EAP 7.0. and 7.1

### 6.2.3 Database Servers

- PostgreSQL 9.4.19, 9.5.14, 9.6.10, and 10.5
- MySQL 5.5.61, 5.6.41, and 5.7.23