



Talend Open Studio for ESB

Installation and Upgrade Guide for
Windows

6.2.2

Adapted for v6.2.2. Supersedes previous releases.

Publication date: January 23, 2017

Copyright

This documentation is provided under the terms of the Creative Commons Public License (CCPL).

For more information about what you can and cannot do with this documentation in accordance with the CCPL, please read: <http://creativecommons.org/licenses/by-nc-sa/2.0/>

Notices

Talend and Talend ESB are trademarks of Talend, Inc.

Apache CXF, CXF, Apache Karaf, Karaf, Apache Camel, Camel, Apache Maven, Maven, Apache Syncope, Syncope, Apache ActiveMQ, ActiveMQ, Apache Log4j, Log4j, Apache Felix, Felix, Apache ServiceMix, ServiceMix, Apache Ant, Ant, Apache Derby, Derby, Apache Tomcat, Tomcat, Apache ZooKeeper, ZooKeeper, Apache Jackrabbit, Jackrabbit, Apache Santuario, Santuario, Apache DS, DS, Apache Avro, Avro, Apache Abdera, Abdera, Apache Chemistry, Chemistry, Apache CouchDB, CouchDB, Apache Kafka, Kafka, Apache Lucene, Lucene, Apache MINA, MINA, Apache Velocity, Velocity, Apache FOP, FOP, Apache HBase, HBase, Apache Hadoop, Hadoop, Apache Shiro, Shiro, Apache Axiom, Axiom, Apache Neethi, Neethi, Apache WSS4J, WSS4J are trademarks of The Apache Foundation. Eclipse Equinox is a trademark of the Eclipse Foundation, Inc. Hyperic is a trademark of VMware, Inc. Nagios is a trademark of Nagios Enterprises, LLC.

All other brands, product names, company names, trademarks and service marks are the properties of their respective owners.

License Agreement

The software described in this documentation is licensed under the Apache License, Version 2.0 (the "License"); you may not use this software except in compliance with the License. You may obtain a copy of the License at <http://www.apache.org/licenses/LICENSE-2.0.html>. Unless required by applicable law or agreed to in writing, software distributed under the License is distributed on an "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied. See the License for the specific language governing permissions and limitations under the License.

This product includes software developed at AOP Alliance (Java/J2EE AOP standards), ASM, AntLR, Apache ActiveMQ, Apache Ant, Apache Avro, Apache Axiom, Apache Axis, Apache Axis 2, Apache Batik, Apache CXF, Apache Camel, Apache Chemistry, Apache Common Http Client, Apache Common Http Core, Apache Commons, Apache Commons Bcel, Apache Commons JXPath, Apache Commons Lang, Apache Derby Database Engine and Embedded JDBC Driver, Apache Geronimo, Apache Hadoop, Apache Hive, Apache HttpClient, Apache HttpComponents Client, Apache JAMES, Apache Log4j, Apache Lucene Core, Apache Neethi, Apache POI, Apache Pig, Apache Qpid-Jms, Apache Tomcat, Apache Velocity, Apache WSS4J, Apache WebServices Common Utilities, Apache Xml-RPC, Apache Zookeeper, Box Java SDK (V2), CSV Tools, DataStax Java Driver for Apache Cassandra, Ehcache, Ezmorph, Ganymed SSH-2 for Java, Google APIs Client Library for Java, Google Gson, Groovy, Guava: Google Core Libraries for Java, H2 Embedded Database and JDBC Driver, HsqlDB, Ini4j, JClouds, JLine, JSON, JSR 305: Annotations for Software Defect Detection in Java, JUnit, Jackson Java JSON-processor, Java API for RESTful Services, Jaxb, Jaxen, Jettison, Jetty, Joda-Time, Json Simple, MetaStuff, Mondrian, OpenSAML, Paracel JDBC Driver, PostgreSQL JDBC Driver, Resty: A simple HTTP REST client for Java, Rocoto, SL4J: Simple Logging Facade for Java, SQLite JDBC Driver, Simple API for CSS, SshJ, StAX API, StAXON - JSON via StAX, Talend Camel Dependencies (Talend), The Castor Project, The Legion of the Bouncy Castle, W3C, Woden, Woodstox : High-performance XML processor, XML Pull Parser (XPP), Xalan-J, Xerces2, XmlBeans, XmlSchema Core, Xmlsec - Apache Santuario, Zip4J, atinject, dropbox-sdk-java: Java library for the Dropbox Core API, google-guice. Licensed under their respective license.

Table of Contents

Preface	v
1. General information	v
1.1. Purpose	v
1.2. Audience	v
1.3. Typographical conventions	v
2. Feedback and Support	v
Chapter 1. Before installing your Talend product	1
1.1. Preparing your installation	2
1.1.1. Files to download	2
1.1.2. Community and Support	2
1.2. Hardware requirements	3
1.3. Software requirements	3
1.3.1. Compatible Operating Systems	3
1.3.2. Java	5
1.3.3. Compatible Apache software and JMS Brokers for Talend Open Studio for ESB	6
1.3.4. Compatible web application servers and containers	7
1.3.5. Compatible Databases	8
1.3.6. Port information	8
Chapter 2. Installing Talend Open Studio for ESB for the first time	11
2.1. Downloading and installing Talend Open Studio for ESB	12
2.2. Launching your Talend Open Studio for ESB	12
2.2.1. Launching your Studio	12
2.2.2. Launching Talend Runtime	13
2.3. Installing external modules	14
2.3.1. Identify required external modules	15
2.3.2. Install external modules	17
Chapter 3. Upgrading your Talend products	21
3.1. Backing up the environment	22
3.2. Upgrading the Talend projects in the Studio	22
Appendix A. Appendices	23
A.1. Installing Talend servers as Windows services	24
A.1.1. Installing Talend Runtime as a service	24
A.1.2. Installing Talend Log Server as a service	25
A.2. Supported Third-Party System/Database/Business Application Versions	26
A.2.1. Supported systems, databases and business applications by Talend components	26



Preface

1. General information

1.1. Purpose

This Installation Guide explains how to install configure and upgrade the *Talend* modules and related applications. For detailed explanation on how to use and fine-tune the *Talend* applications, please refer to the appropriate Administrator or User Guides of the *Talend* solutions.

Information presented in this document applies to *Talend* products **6.2.2**.

1.2. Audience



This guide is for administrators and users of the *Talend* products.



The layout of GUI screens provided in this document may vary slightly from your actual GUI.

1.3. Typographical conventions

This guide uses the following typographical conventions:

- text in **bold**: window and dialog box buttons and fields, keyboard keys, menus, and menu options,
- text in **[bold]**: window, wizard, and dialog box titles,
- text in *courier*: system parameters typed in by the user,
- text in *italics*: file, schema, column, row, and variable names,
- The  icon indicates an item that provides additional information about an important point. It is also used to add comments related to a table or a figure,
- The  icon indicates a message that gives information about the execution requirements or recommendation type. It is also used to refer to situations or information the end-user needs to be aware of or pay special attention to.
- Any command is highlighted with a grey background or code typeface.

2. Feedback and Support

Your feedback is valuable. Do not hesitate to give your input, make suggestions or requests regarding this documentation or product and find support from the **Talend** team, on **Talend's** Forum website at:

<http://talendforge.org/forum>



Chapter 1. Before installing your Talend product

These pages present and list everything you need to know before installing your *Talend* product:

- *Preparing your installation*
- *Hardware requirements*
- *Software requirements*

1.1. Preparing your installation

These pages provide information about:

- [Files to download](#)
- [Community and Support](#)

1.1.1. Files to download

Here are the files you need to download to install your *Talend* product:

- the software packages. For more information, see [Software package](#).

1.1.1.1. Software package

This page details the software package you need to download to install your *Talend* product.

In this page:

- YYYYMMDD_HHmm corresponds to the package timestamp
- A.B.C. corresponds to package version number (Major. Minor. Patch.)

The software modules must be all in the same versions/revisions. This means that both YYYYMMDD_HHmm and A.B.C must match on both client side and server side.

Table 1.1. Manual installation software package

Zip/jar file name	Description
Talend-Studio-YYYYMMDD_HHmm-VA.B.C.zip	Studio IDE (GUI)
Talend-Runtime-VA.B.C-YYYYMMDDHHmm.zip	Talend Runtime: OSGi Container including JobServer. Talend Runtime is a standalone equivalent to the Talend ESB OSGi Container (<i>container</i> folder) of <i>Talend ESB</i> .
Talend-ESB-YYYYMMDD_HHmm-VA.B.C.zip	Talend ESB: application integration solution with an OSGi Container, Service Locator, Service Activity Monitoring and Security Token Service. It includes the Talend Runtime (in the <i>container</i> folder) and provides additional parts like examples, standalone, Tomcat deployment relevant parts and other additional parts primarily used by Java Developers.

1.1.2. Community and Support

There are several ways to get help and support for your *Talend* installation:

- [Official Talend Documentation](#). Here you can find everything to help you install and use your *Talend* product.
- [Talend Forum](#). This is the place where you can ask questions to the community, and get answers.

1.2. Hardware requirements

Before installing your *Talend* product, make sure the machines you are using meet the following hardware requirements recommended by *Talend*.

Memory usage heavily depends on the size and nature of your *Talend* projects. However, in summary, if your Jobs include many transformation components, you should consider upgrading the total amount of memory allocated to your servers, based on the following recommendations.

Table 1.2. Memory usage

Product	Client/Server	Recommended alloc. memory
<i>Studio</i>	Client	3GB minimum, 4 GB recommended
<i>Talend Runtime</i>	Server	2GB minimum, 4 GB recommended ¹

1. Memory requirements depend on the executed processes.

The same requirements also apply for disk usage. It also depends on your projects but can be summarized as:

Table 1.3. Disk usage

Product	Client/Server	Required disk space for installation	Required disk space for use
<i>Studio</i>	Client	3GB	3+ GB
<i>Talend Runtime</i>	Server	400MB	400+ MB

1.3. Software requirements

These pages contain the exhaustive list of the databases and third party software that are compatible and supported with the 6.2.2 version of your *Talend* product.

- [Compatible Operating Systems](#)
- [Java](#)
- [Compatible Apache software and JMS Brokers for Talend Open Studio for ESB](#)
- [Compatible web application servers and containers](#)
- [Compatible Databases](#)
- [Port information](#)

1.3.1. Compatible Operating Systems



In the following documentation:

- recommended: designates an environment recommended by *Talend* based on our experiences and customer usage;
- supported: designates a supported environment for use with the listed component or service;
- supported with limitations: designates an environment that is supported by *Talend* but with certain conditions explained in notes.

The information contained in the following table is applicable for the 6.2.2 version of your *Talend* product at the time of its release. For updated information on the latest supported software or databases, see [this page](#).

These tables provide a summary of the supported Operating Systems.

Table 1.4. Talend Studio

Support type	Operating System		Version	Processor
Recommended	Linux	Linux Ubuntu	14.04	64-bit
	Windows	Microsoft Windows Professional	7	64-bit
Supported	Linux	Linux Ubuntu	16.04	64-bit
		Linux Ubuntu	12.04	64-bit
		Red Hat Enterprise Linux Server/ CentOS	7.1 to 7.3	64-bit
		Red Hat Enterprise Linux Server/ CentOS	6.7/6.8	64-bit
	Windows	Microsoft Windows	10	64-bit
		Microsoft Windows	8.1	64-bit
		Microsoft Windows Server 2012 R2 (on AWS)	2012 RTM	64-bit
	Mac	OS X	Sierra/10.12	64-bit
		OS X	El Capitan/10.11	64-bit
		OS X	Yosemite/10.10	64-bit
OS X		Mavericks/10.9	64-bit	

Table 1.5. Talend server modules

Support type	Operating System		Version	Processor
Recommended	Linux	Red Hat Enterprise Linux Server	7.2	64-bit
	Windows	Microsoft Windows Server	2012 R2	64-bit
Supported	Linux	Linux Ubuntu	16.04	64-bit
		Linux Ubuntu	14.04	64-bit
		Linux Ubuntu	12.04	64-bit
		Red Hat Enterprise Linux Server/ CentOS	7.3	64-bit
		Red Hat Enterprise Linux Server/ CentOS	7.1	64-bit
		Red Hat Enterprise Linux Server/ CentOS	6.7/6.8	64-bit
		SUSE SLES	12	64-bit
		SUSE SLES	11	64-bit
	Unix	Solaris (SunOs)	11	x86/64-bit ¹
		Solaris (SunOs)	11	Sparc/64-bit ²
		Solaris (SunOs)	10 ³	x86/64-bit ¹
		Solaris (SunOs)	10 ³	Sparc/64-bit ²
		AIX	7.1	64-bit (IBM Java 8 only) ⁴
	Windows	Microsoft Windows Server	2012	64-bit
		Microsoft Windows Server	2008 R2	64-bit ⁵

1. Only supported for Talend Administration Center, CommandLine, JobServer, Talend ESB and Talend Runtime.

2. Only supported for Talend ESB and Talend Runtime.

3. At least patch level 9 should be installed.

4. Only supported for CommandLine, JobServer, Talend ESB and Talend Runtime.

The server modules include Talend Open Studio for ESB including Talend Runtime.

1.3.2. Java

In order to use your *Talend* product, Java must be installed on your machine. If you install your *Talend Studio* using the *Talend Studio Installer*, you do not need to set up a Java Environment as it is embedded in the Installer.

These pages list:

- [Compatible Java environments](#)
- [Setting up JAVA_HOME](#)

1.3.2.1. Compatible Java environments



In the following documentation:

- recommended: designates an environment recommended by *Talend* based on our experiences and customer usage;
- supported: designates a supported environment for use with the listed component or service;
- supported with limitations: designates an environment that is supported by *Talend* but with certain conditions explained in notes.

The information contained in the following table is applicable for the 6.2.2 version of your Talend product at the time of its release. For updated information on the latest supported software or databases, see [this page](#).

These tables provide a summary of the supported Java Runtime environments.

In this table:

- (R) means that this combination is recommended;
- means that this combination is supported;
- means that this combination is not supported.

The **Compiler Compliance Level** corresponds to the Java version used for the Job code generation. This option can be changed in the Studio preferences. For more information, see *Talend Studio User Guide*.

Table 1.6. Studio Java environments

Support Type	JRE Version	Studio JDK Compiler Compliance Level
Recommended	Oracle 8	1.7 (default)
Supported	Oracle 8	1.8

Depending on the licence you have, the available Execution Servers may differ.

Table 1.7. Server Java environments

JRE Version	JobServer	MDM Server	ESB/Talend Runtime	ESB/ Microservices	Big Data Distributions	Talend Server Applications ¹	Comment/ Limitation
Oracle 7 (running alongside Oracle 8)					Compatible with Java 1.7 only		Compatible with Studio JDK Compiler Compliance Level 1.7 only

JRE Version	JobServer	MDM Server	ESB/Talend Runtime	ESB/ Microservices	Big Data Distributions	Talend Server Applications ¹	Comment/ Limitation
Oracle 8	✓ (R)	✓ (R)	✓ (R)	✓ (R)	Compatible with Java 1.8	✓ (R)	Compatible with Studio JDK Compiler Compliance Level 1.7 (default/ recommended) or 1.8
IBM 8	✓	✗	✓	✗	✗	✗	Only for AIX and SUSE SLES

1: Talend server applications include .

For example, the recommended combination is:

- Oracle 8 installed on the machine running the Studio;
- 1.7 set in the **Compiler Compliance Level** preferences of the Studio;
- Oracle 8 installed on the machine(s) running the Execution Server(s) and the Talend Server Application(s);
- Big Data Distributions compatible with Java 1.8 used.

For more information on Java specificities (version, Operating Systems compatibility), see the Knowledge Base articles on [Talend Help Center](#).

1.3.2.2. Setting up JAVA_HOME

In order for your *Talend* product to use the Java environment installed on your machine, you must set the JAVA_HOME environment variable.

To do so, proceed as follows:

1. Find the folder where Java is installed, usually `C:\Program Files\Java\JREx.x.x`.
2. Open the **Start** menu and type `Environment variable` in the search bar to open the Environment variable properties.
3. Click **Environment Variables...**
4. Under **System Variables**, click **New...** to create a variable. Name the variable `JAVA_HOME`, enter the path to the Java 8 JRE, and click **OK**.
5. Under **System Variables**, select the **Path** variable, click **Edit...** and add the following variable at the end of the `Path` variable value:

```
;%JAVA_HOME%\bin
```

1.3.3. Compatible Apache software and JMS Brokers for Talend Open Studio for ESB

The information contained in the following table is applicable for the 6.2.2 version of your Talend product at the time of its release. For updated information on the latest supported software or databases, see [this page](#).

Some of the ESB tools use Apache software components. Talend Open Studio for ESB contains the following Apache Project versions:

Table 1.8. Supported Apache software

Software	Version	Notes	More information
Apache Karaf	4.0.5	Service release upgrade.	Release notes: https://issues.apache.org/jira/secure/ReleaseNote.jspa?projectId=12311140&version=12334629
Apache CXF	3.1.5	Service release upgrade.	Release notes and Migration Guide: http://cxf.apache.org/cxf-315-release-notes.html
Apache Camel	2.16.3	Minor release upgrade.	Release notes: http://camel.apache.org/camel-2163-release.html
Apache ActiveMQ	5.13.3	Minor release upgrade.	Release notes: http://activemq.apache.org/activemq-5133-release.html

Talend Open Studio for ESB supports the following JMS Brokers.

Note that ESB Java Consumer & Provider using SOAP/JMS-based messaging are supported for the following (JMS) Message-Brokers.

Table 1.9. Supported Messaging Brokers for SOAP/JMS

Software	Version
Apache ActiveMQ	5.13.3

1.3.4. Compatible web application servers and containers



In the following documentation:

- recommended: designates an environment recommended by *Talend* based on our experiences and customer usage;
- supported: designates a supported environment for use with the listed component or service;
- supported with limitations: designates an environment that is supported by *Talend* but with certain conditions explained in notes.

The information contained in the following table is applicable for the 6.2.2 version of your Talend product at the time of its release. For updated information on the latest supported software or databases, see [this page](#).

Please refer to the following grid for a summary of supported web application servers and runtime containers.

Table 1.10. Talend Open Studio for ESB

Support type	Runtime Containers	Version
Recommended	Talend Runtime (Apache Karaf)	6.2
	Apache Tomcat	8 ²
Supported with limitations	Apache Tomcat	7/8 ³
	JBoss EAP	6.4 ⁴
	Weblogic	12c ⁴
	IBM Websphere	8.5 ⁴

2. Only for Talend Identity Management

3. Only for CXF Services, Camel Routes, Service Activity Monitoring, Talend Identity Management and Security Token Service.

4. Only for CXF Services and Camel Routes.

1.3.5. Compatible Databases



In the following documentation:

- recommended: designates an environment recommended by *Talend* based on our experiences and customer usage;
- supported: designates a supported environment for use with the listed component or service;
- supported with limitations: designates an environment that is supported by *Talend* but with certain conditions explained in notes.

The information contained in the following table is applicable for the 6.2.2 version of your Talend product at the time of its release. For updated information on the latest supported software or databases, see [this page](#).

Please refer to the following grid for a summary of supported databases.

Table 1.11. Service Activity Monitoring (SAM)

Support type	Databases	Version
Recommended	MySQL	5.7
	Oracle	12c
Supported	MySQL	5.6
	MS SQL Server	2012/2014 ²
	Oracle	11g
	PostgreSQL ¹	9.4
	IBM DB2	10.1
	Derby DB	> 10.8

1. PostgreSQL JDBC driver 9.4 is used.

2. No new feature introduced by MS SQL Server 2014 is supported.

1.3.6. Port information

This section describes the most important TCP/IP ports the *Talend* products use. Make sure that your firewall configuration is compatible with these ports or change the default ports where needed.

Additionally, to be able to download patches or external libraries, add the web site <http://talend-update.talend.com> and the port 443 to the whitelist.

In this table:

Port: a TCP/IP port or a range of ports.

Direction: In (Inbound); Out (Outbound) - related to the communication direction (for example a HTTP Port for a CXF Route or Service we listen on request) will be an 'Inbound' port. For example, a browser which sends a request to port 7080 will have this port as 'Outbound' port in this list.

Usage: which part of the Product component uses this port (for example 1099 is used by the JMX Monitoring component of Talend Runtime).

Config: the file or location where the value can be changed.

Remark: anything which is important to mention additionally.

Table 1.12. Talend Studio Ports

Port	Direction	Usage	Config
8090	IN	tESBProviderRequest (SOAP Data Server) and tRESTRRequest (REST Data Service default port)	REST: Preferences / Talend / ESB SOAP: tESBProviderRequest component details

Table 1.13. Talend Open Studio for ESB including Talend Runtime Ports

Port	Direction	Usage	Config (/etc/)	Remark
8040	IN	Standard HTTP port	<i>org.ops4j.pax.web.cfg</i>	See the <i>Talend ESB Container Administration Guide</i> for config scripts and also the <i>admin:</i> command which allows you to set ports to different values.
9001	IN	Standard HTTPS port	<i>org.ops4j.pax.web.cfg</i>	
1099	IN	JMX - RMI Registry Port	<i>org.apache.karaf.management.cfg</i>	
44444	IN	JMX - RMI Registry Port	<i>org.apache.karaf.management.cfg</i>	
8101	IN	Apache Karaf - SSH Port	<i>org.apache.karaf.shell.cfg</i>	
8000	IN	Talend JobServer - Command Port	<i>org.talend.remote.jobserver.server.cfg</i>	
8001	IN	Talend JobServer - File Transfer Port	<i>org.talend.remote.jobserver.server.cfg</i>	
8888	IN	Talend JobServer - Monitoring Port	<i>org.talend.remote.jobserver.server.cfg</i>	
61616	IN	Messaging - ActiveMQ Broker Port	system.properties	
2181	IN OUT	ESB Locator - Apache Zookeeper Port	Server: <i>org.talend.esb.locator.server.cfg</i> Client: <i>org.talend.esb.locator.cfg</i>	
1527	IN	ESB SAM Database - Apache Derby Port	The port value of the embedded Derby database depends on the Talend Runtime Container configuration, as the database is shipped with the container.	The embedded Apache Derby DB is only supported for Development and Testing purpose in production system environments. The Container, which hosts the SAM Server, needs access to the related Database port. The port depends on the Database and Database configuration.
8082	OUT	ESB Runtime Features Installer - Artifact Repository access	<i>org.ops4j.pax.url.mvn.cfg</i>	
(*)	IN OUT	Customer Services, Routes etc.		Any of the Data Services, Routes and other components additionally deployed to the container might require additional port to be accessible.



Chapter 2. Installing Talend Open Studio for ESB for the first time

We strongly encourage you to read the [Before installing your Talend product](#) before starting this chapter.

This chapter details the procedures required to install Talend Open Studio for ESB.

2.1. Downloading and installing Talend Open Studio for ESB

Download

1. Download the product on [this page](#).

Note that the *.zip* file contains binaries for ALL platforms (Linux/Unix, Windows and MacOS).

2. Once the download is complete, extract the archive file on your hard drive.



It is recommended to avoid spaces and long names in the target installation directory path.

For **Talend Open Studio for ESB**, both Talend Studio and *Talend Runtime* are bundled together.

There is one compressed file, of the format: *TOS_ESB-YYYYYYYYY_YYYY-VA.B.C.zip*

When you extract it to a directory of your choice, you get two folders:

- *Runtime_ESBSE* that contains *Talend Runtime* and examples.
- *Studio* that contains the Talend Studio.

Configure the memory settings

- If you want to tune the memory allocation for your JVM, you only need to edit the *TOS_ESB-win-x86_64.ini* file.

The default values are:

```
-vmargs -Xms40m -Xmx500m -XX:MaxMetaspaceSize=128m
```

If you only have 512MB of memory on your computer, you can specify the memory allocation as following, for example:

```
-vmargs -Xms40m -Xmx256m -XX:MaxMetaspaceSize=64m
```

Learn more on <http://www.oracle.com/technetwork/java/hotspotfaq-138619.html>

2.2. Launching your Talend Open Studio for ESB

The following procedures describe how to launch the Studio and its related modules, how to log in the Studio and how to create your first project.

2.2.1. Launching your Studio

Launch the Studio

- Double-click the *TOS_ESB-win-x86_64.exe* executable file to launch your *Talend Studio*.

Public license

- First screen is a license screen. In the **[License]** window that appears, read and accept the terms of the license agreement to proceed to the next step.

Login and first project

1. As first time user, you need to set up a new project or you can also import a Demo project which gathers numerous job samples.

Select what you want to do next:

Create a new project:

Import a demo project

Import an existing project

Always ask me at startup

2. To import a demo project, select **Import a demo project** and click **Finish**. In the dialog box that opens, select the project you want to import.

To create a new project, select **Create a new project** and enter the name of your project in the corresponding field.

3. Click **Finish** when complete, to open a welcome window and launch the Studio.

2.2.2. Launching Talend Runtime

The Talend Runtime package includes:

- Talend ESB Container (Talend Runtime container), which is a ready to be used OSGi container allowing you to deploy all your features, as well as the following infrastructure services:
 - Service Locator, a ready-to-be-used failover and load balancer tool (based on Apache Zookeeper) allowing you to dynamically register your endpoints;
 - Service Activity Monitoring, a monitoring tool facilitating the capture of analysis of service activity;
 - Security Token Service, a framework allowing clients and services to securely and transparently authenticate during connections.
- Apache ActiveMQ, which is a message broker enabling to support different messaging options.

Run Talend Runtime Container

1. Go to subdirectory `<TalendRuntimePath>\container\bin` of Talend Runtime installation directory.
2. Run the `trun.bat` file.

When the container starts up, you will see a short introduction (similar to the one below) followed by the Talend Runtime container console command prompt.

```
Hit '<tab>' for a list of available commands
and 'lcmdl --help' for help on a specific command.
Hit '<ctrl-d>' or 'osgi:shutdown' to shutdown the TRUN.
karaf@trun>
```

Instead of the individual start commands that you can find in the following sections, you can also use:

```
tesb:start-all
```

in the container, which starts the Service Locator, Service Activity Monitoring server and the Security Token Service.

Run Apache ActiveMQ

1. Go to subdirectory `<TalendRuntimePath>\activemq\bin` of Talend Runtime installation directory.
2. Run the `activemq.bat` file.

Run Service Locator

- To run **Service Locator** inside Talend Runtime, type in the container console window:

```
tesb:start-locator
```

To run **Service Locator** independently:

1. Go to subdirectory `<TalendRuntimePath>\zookeeper\bin` of Talend Runtime installation directory.
2. Run the following command:

```
zkServer.cmd start
```

Run Service Activity Monitoring

- To run the **Service Activity Monitoring** server within the Talend Runtime container, type the following in your console:

```
tesb:start-sam
```

This will also automatically start an Apache Derby database.



The Service Activity Monitoring within Talend Runtime can only be used with Apache Derby. If you would like to use one of the other supported databases, use the Tomcat deployment of the Service Activity Monitoring server.

Run Security Token Service

- To install the **Security Token Service** server within the Talend Runtime container, type the following in your console:

```
tesb:start-sts
```

2.3. Installing external modules

Talend Studio requires specific third-party Java libraries or database drivers (*.jar* files) to be installed to connect to sources and targets. Those libraries or drivers, known as external modules, can be required by some of *Talend*

components or by some connection wizards or by both. Due to license restrictions, *Talend* may not be able to ship certain external modules within *Talend Studio*.

2.3.1. Identify required external modules

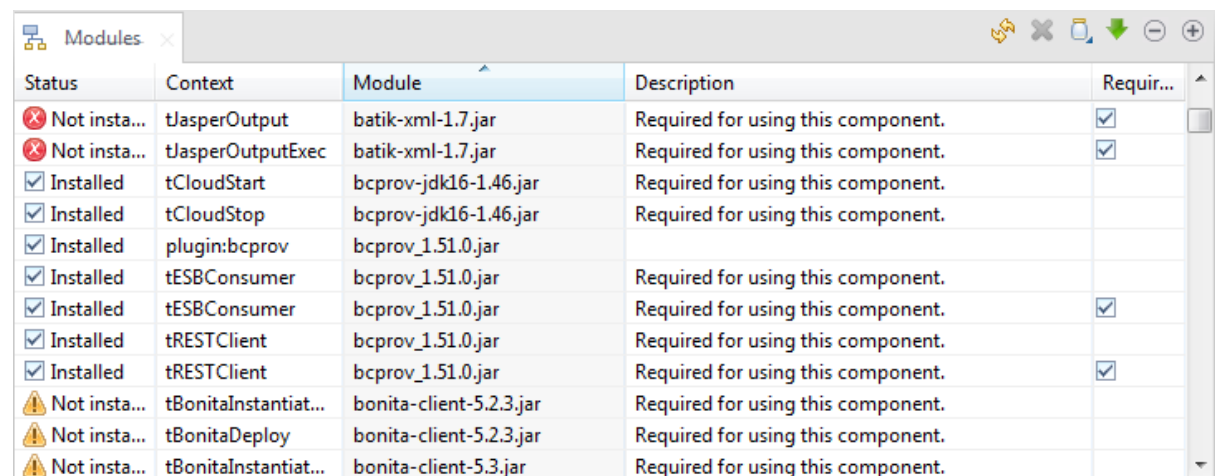
When you launch *Talend Studio* or select **Help > Install Additional Packages** in the *Talend Studio* menu, if any external modules are found missing for any features, the **[Additional Talend packages]** wizard opens, showing the **Optional** and **Required third-party libraries** check boxes. Make sure these check boxes are selected and click **Finish** to open the **[Download external modules]** dialog box, which lists all the available external modules, displays the license terms under which the external modules are provided, and lets you install all the modules at a single click. For more information, see [Install external modules](#).

On your design workspace, if a component requires the installation of external modules before it can work properly, a red error indicator appears on the component. With your mouse pointer over the error indicator, you can see a tooltip message showing which external modules are required for that component to work.

When you open the **Basic settings** or **Advanced settings** view of a component for which one or more external modules are required, you will see a piece of highlighted information about external modules, followed by an **Install** button. Clicking the **Install** button opens a wizard that will show you the external modules to be installed.




The **Modules** view lists all the modules required to use the components embedded in the Studio, including those Java libraries and drivers that you must install to get the relevant components or Metadata connection working.

If the **Modules** view is not shown under your design workspace, go to **Window > Show View... > Talend** and then select **Modules** from the list.



Status	Context	Module	Description	Requir...
Not insta...	tJasperOutput	batik-xml-1.7.jar	Required for using this component.	<input checked="" type="checkbox"/>
Not insta...	tJasperOutputExec	batik-xml-1.7.jar	Required for using this component.	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Installed	tCloudStart	bcprov-jdk16-1.46.jar	Required for using this component.	
<input checked="" type="checkbox"/> Installed	tCloudStop	bcprov-jdk16-1.46.jar	Required for using this component.	
<input checked="" type="checkbox"/> Installed	plugin:bcprov	bcprov_1.51.0.jar		
<input checked="" type="checkbox"/> Installed	tESBConsumer	bcprov_1.51.0.jar	Required for using this component.	
<input checked="" type="checkbox"/> Installed	tESBConsumer	bcprov_1.51.0.jar	Required for using this component.	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Installed	tRESTClient	bcprov_1.51.0.jar	Required for using this component.	
<input checked="" type="checkbox"/> Installed	tRESTClient	bcprov_1.51.0.jar	Required for using this component.	<input checked="" type="checkbox"/>
<input type="checkbox"/> Not insta...	tBonitaInstantiat...	bonita-client-5.2.3.jar	Required for using this component.	
<input type="checkbox"/> Not insta...	tBonitaDeploy	bonita-client-5.2.3.jar	Required for using this component.	
<input type="checkbox"/> Not insta...	tBonitaInstantiat...	bonita-client-5.3.jar	Required for using this component.	


The table below describes the information presented in the **Modules** view.

Column	Description
Status	<p>points out if a module is installed or not installed on your system.</p> <p>The  icon indicates that the module is not necessarily required for the corresponding component or Metadata connection listed in the Context column.</p> <p>The  icon indicates that the module is absolutely required for the corresponding component or Metadata connection.</p>
Context	<p>lists the name of Talend component or Metadata connection using the module. If this column is empty, the module is then required for the general use of <i>Talend Studio</i>.</p> <p> This column lists any external libraries added to the routines you create and save in the Studio library folder. For more information, see the <i>Talend Studio User Guide</i>.</p>

Column	Description
Module	lists the module exact name.
Description	explains why the module/library is required.
Required	the selected check box indicates that the module is required.

In addition to the **Modules** view, the Studio provides a mechanism that enables you to easily identify, download and install most of the required third-party modules from the **Talend** website and directs you to valid websites for the rest.

A Jar installation wizard appears whenever any required external module is found missing for any feature in the Studio, including when you:

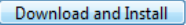


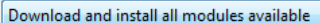

- drop a component from the **Palette** if one or more external modules required for that component to work are missing in the Studio, or
- click the **Check** button in a Metadata connection setup wizard in *Talend Studio* if one or more external modules required for the connection are missing in the Studio, or
- click the **Guess schema** button in the **Component** view of a component if one or more external modules required for that component to work are missing in the Studio,
- click **Install** on the top of the **Basic settings** or **Advanced settings** view of a component for which one or more required external modules are missing,
- run a Job that involves components or Metadata connections for which one or more required external modules are missing, or
- click the  button in the **Modules** view.



When you click this button, the wizard that appears will list all the required external modules that are not integrated in the Studio.

The table below describes the information presented in the wizard.

Item	Description
Jar	The file name of the external module.
Module	A short description about the nature of the module.
Required by component	Lists the components that require the external module.
Required	The selected check box indicates that the module is required.
License	The license under which the module is provided.

Item	Description
More information	Provides the URL of the valid website where you can find more information about this module and download the module manually.
Action	<p>: Click to open the [Download external modules] dialog box to download and install the module, which is available on the Talend website;</p> <p>Open in browser : Click the link to open the valid website to download the module, which is not available on the Talend website, and then click the jar button to import the downloaded module into your studio;</p> <p>: You need to find and download the module yourself and click the jar button to import it into the your studio.</p>
	Click to open the [Download external modules] dialog box to download and install all the required modules that are available on the Talend website.
Do not show again	<p>Select to prevent the wizard from appearing again unless you click the  button in the Modules tab view.</p> <p>This check box shows only when you drop a component, set up a connection, or guess the schema of a database, that requires an external module, or click the Install button on the Component tab of a component that requires an external module.</p>
Click here to obtain more information about external modules	Click to go to Talend online documentation on installing third-party modules.

This wizard lists the external modules to be installed, the licenses under which they are provided, and the URLs of the valid websites where they are downloadable, and allows you to download and install automatically all the modules available on the Talend website and download those not available on the **Talend** website by following the links provided in the **Action** column and then install them into your Studio manually.

When you drop a component, set up a connection, or guess the schema of a database, that requires an external module for which neither the Jar file nor its download URL information is available on the **Talend** website, the Jar installation wizard does not appear, but the **Error Log** view will present an error message informing you that the download URL for that module is not available. You can try to find and download it by yourself, and then install it manually into the Studio.



To show the **Error Log** view on the tab system, go to **Window > Show views**, then expand the **General** node and select **Error Log**.

2.3.2. Install external modules

To download and install modules in the Studio

To download and install external modules automatically, do the following:



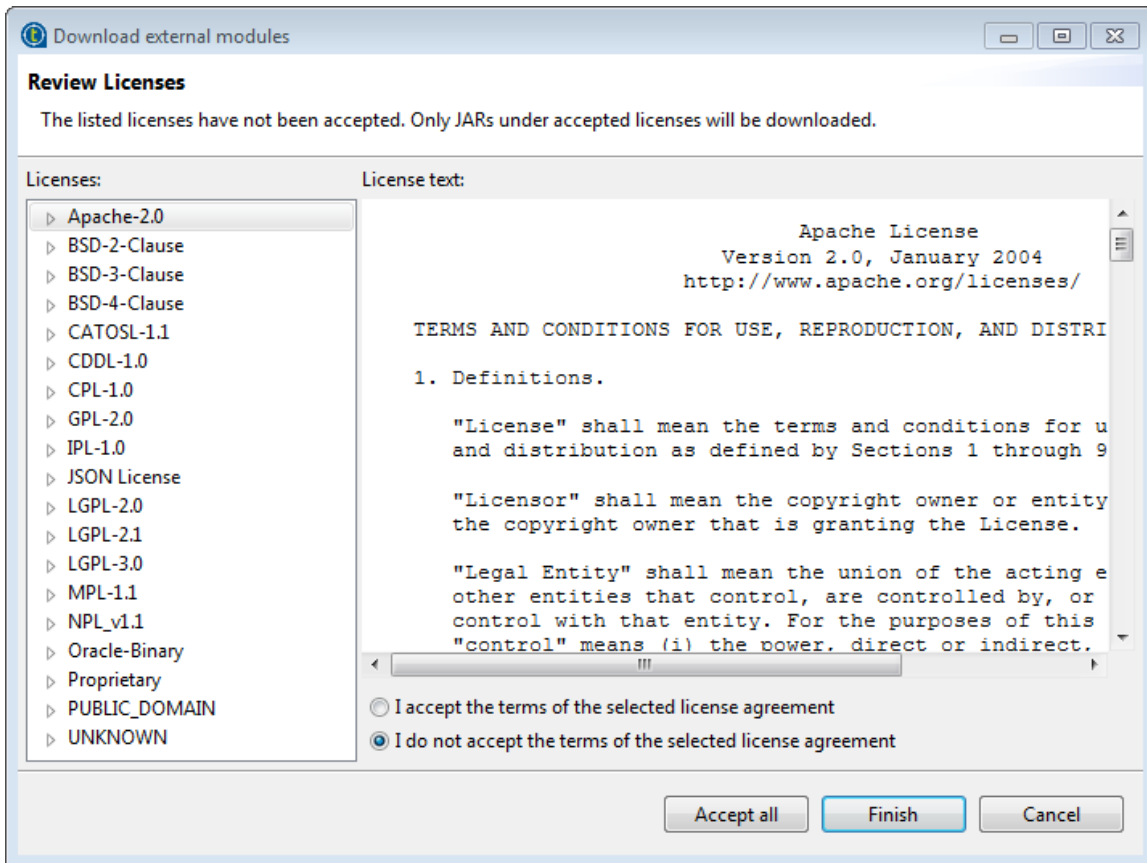
*If you are working behind a network proxy, make sure you have correctly set up your proxy before you can download and install external modules in your Studio. To access the proxy settings, select **Window > Preferences** from the menu to open the **[Preferences]** window, then expand the **General** node and click **Network Connections**.*

Add the web site <http://talend-update.talend.com> and the port 443 to the whitelist.

1. In the Jar installation wizard, click the **Download and Install** button to install a particular module, or click the **Download and install all modules available** button to install all the available modules, or select **Help > Install Additional Packages** from the menu to open the **[Additional Talend Packages]** wizard. From this wizard, make sure the Optional and Required third-party libraries check boxes are selected and click **Finish**. The **[Download external modules]** dialog box opens.



This **[Additional Talend Packages]** wizard appears automatically when you launch *Talend Studio* if any additional packages, including external modules, need to be installed for any features to function in the Studio.




- To download and install the external module(s) provided under a particular license, select that license from the **Licenses** pane, review the license terms, select the **I accept the terms of the license agreement** option, and click **Finish** to start the download and installation process.

To download and install all external modules provided under all the listed licenses, click the **Accept all** button to start the download and installation process.

Upon installation of the chosen external module or modules, a dialog box appears to notify you about the number of modules successfully installed and/or about the modules failed to install, if any.

To install manually an external module you already have in your local file system, do the following:

- Click the  button in the upper right corner of the **Modules** view or in Jar installation wizard to browse your local file system.

If the **Modules** view is not shown under your design workspace, go to **Window > Show View... > Talend** and then select **Modules** from the list.

- In the **[Open]** dialog box of your file system, browse to the module you want to install, double-click the *.jar* file, or select it and then click **Open** to install it.

The dialog box closes and the selected module is installed in the library folder of the current Studio.

You can now use the component or Metadata connection dependent on this module in any of your Job designs.

To install modules downloaded from external websites

Some modules are not available on the **Talend** website but can be downloaded directly from external websites. Once downloaded, these modules must be placed in specific folders.

- For the studio, the downloaded modules must be placed in the following folder:
<StudioPath>/configuration/.m2





Chapter 3. Upgrading your Talend products

This chapter describes the various operations required to migrate version of the *Talend* solutions.

We assume that you have installed and configured these solutions as described in the [Installing Talend Open Studio for ESB for the first time](#).

The migration and upgrade process includes the following mandatory steps:



These steps usually need to be completed in the following order.

1. Backing up the environment, see the [Backing up the environment](#).
2. Upgrading the Talend projects in the Studio, see the [Upgrading the Talend projects in the Studio](#).

3.1. Backing up the environment

Before you start migrating your *Talend* solutions, make sure your environment is correctly backed up.


The environment backup process includes the following mandatory steps:



These steps usually need to be completed in the following order.

1. Saving the local projects, see [Saving the local projects](#).

Saving the local projects

1. Launch the Studio.
2. Click the  icon and export your local projects to an archive file.

3.2. Upgrading the Talend projects in the Studio

Importing your local projects

1. Launch the new Studio you have just installed.
2. In the login window, select **Import**, then import the archive file containing your local projects.

The local projects are displayed in the **Project** list and appear on the Studio **Repository** view.



For more information on how to export local projects to an archive file, see [Saving the local projects](#).



Appendix A. Appendices

The following appendices contain complementary information to go further with your *Talend* product:

- *Installing Talend servers as Windows services*
- *Supported Third-Party System/Database/Business Application Versions*

A.1. Installing Talend servers as Windows services

The following pages contain procedures on how to install *Talend* servers as Windows services.

- [Installing Talend Runtime as a service](#)
- [Installing Talend Log Server as a service](#)

A.1.1. Installing Talend Runtime as a service

The Talend Runtime container is based on Apache Karaf. Karaf Wrapper (for service wrapper) makes it possible to install the Talend Runtime container as a service.

To install Talend Runtime as a service, you first have to install the wrapper, which is an optional feature:

Installing the wrapper

1. Browse to the *bin* folder of the Talend Runtime installation directory, then launch the container by executing the *trun.bat* file in Administrator mode.
2. To install the wrapper feature, type:

```
karaf@trun> feature:install wrapper
```

Once installed, wrapper feature will provide `wrapper:install new` command in the *trun*, which allows you to install Talend Runtime as a service.

3. To install the service, type in the following command:

```
karaf@trun> wrapper:install
```

Alternatively, to register the container as a service in automatic start mode, simply type:

```
karaf@trun> wrapper:install -s AUTO_START -n TALEND-CONTAINER -d Talend-Container -  
D "Talend Container Service"
```

where `TALEND-CONTAINER` is the name of the service, `Talend-Container` is the display name of the service and `"Talend Container Service"` is the description of the service.

```

karaf@trun> wrapper:install -s AUTO_START -n TALEND-CONTAINER -d Talend-Containe
rT -n TALEND-CONTAINER -d Talend-Container -D "Talend Container Service"
Creating file: C:\Builds\Talend-Runtime\bin\TALEND-CONTAINER-wrapper.exe

Creating file: C:\Builds\Talend-Runtime\etc\TALEND-CONTAINER-wrapper.conf

Creating file: C:\Builds\Talend-Runtime\bin\TALEND-CONTAINER-service.bat

Creating file: C:\Builds\Talend-Runtime\lib\wrapper.dll
Creating file: C:\Builds\Talend-Runtime\lib\karaf-wrapper.jar

Creating file: C:\Builds\Talend-Runtime\lib\karaf-wrapper-main.jar

Setup complete. You may wish to tweak the JUM properties in the wrapper configura
tion file:
    C:\Builds\Talend-Runtime\etc\TALEND-CONTAINER-wrapper.conf

before installing and starting the service.

To install the service, run:
C:> C:\Builds\Talend-Runtime\bin\TALEND-CONTAINER-service.bat install

Once installed, to start the service run:
C:> net start "TALEND-CONTAINER"

Once running, to stop the service run:
C:> net stop "TALEND-CONTAINER"

Once stopped, to remove the installed the service run:
C:> C:\Builds\Talend-Runtime\bin\TALEND-CONTAINER-service.bat remove

```

The wrapper files are installed, you now have to install the Talend Runtime service.

In the following procedure, TALEND-CONTAINER is the name of the service and is only given as an example.

Installing the service

1. Open a CMD window in Administrator mode.
2. Browse to the *bin* folder of the Talend Runtime installation directory, then type in the following command:

```
TALEND-CONTAINER-service install
```

The Talend Runtime service is created and can be viewed by selecting **Control Panel > Administrative Tools > Services** in the **Start** menu of Windows.

You can then run the `net start "TALEND-CONTAINER"` and `net stop "TALEND-CONTAINER"` commands to manage the service.

To remove the service, type in the following command in the command window:

```
TALEND-CONTAINER-service.bat remove
```

A.1.2. Installing Talend Log Server as a service

To install Talend Log Server as a service, proceed as follows:

1. Download the *nssm* service wrapper archive file from [this website](#) and extract it to the directory of your choice.
 - It holds a service wrapper for Windows.
2. At the root of the Talend Log Server installation directory:
 - Put the *nssm.exe* file corresponding to your operating system.

- Create a directory called *sincedb*.
3. Open a CMD window in Administrator mode.
 4. Browse to the Talend Log Server installation directory and execute the following command:

```
nssm.exe install TalendLogserver start_logserver.bat
```

Then, use the following command to define the location of the *start_logserver.bat* file:

```
nssm.exe set TalendLogserver AppDirectory <path_to_start_logserver.bat>
```

The Talend Log Server service is created.

A.2. Supported Third-Party System/Database/Business Application Versions

This document provides the information about the versions of the systems or databases or business applications supported by Talend Studio.

A.2.1. Supported systems, databases and business applications by Talend components

The information contained in the following table is applicable for the 6.2.2 version of your Talend product at the time of its release. For updated information on the latest supported software or databases, see [this page](#).

The access to these systems, databases and business applications varies depending on the Studio you are using.

Systems/Databases	Versions	OS	Available with...
Alfresco	2.1	N/A ¹	All Talend products
Amazon Redshift	Initial release of Amazon Redshift	N/A ¹	All Talend products
AS/400	V5R2 to V5R4 V5R3 to V6R1 V6R1 to V7R2	N/A ¹	All Talend products
Access²	2003 2007	Windows	Talend products with Data Integration (DI), Master Data Management (MDM), Enterprise Service Bus (ESB) or Big Data
Bonita	5.2.3 5.3.1 5.6.1 5.10.1 6.5.2	N/A ¹	All Talend products
Cassandra	2.0.0 3.0/3.1/3.2/3.3/3.4 (Deprecated versions: 1.1.2/1.2.2)	Windows + Linux	Talend products with Big Data

Systems/Databases	Versions	OS	Available with...
CouchBase	2.0	Windows	Talend products with Big Data
CouchDB	1.0.2	Windows	Talend products with Big Data
DB Generic	ODBC	Windows	All Talend products
DB2	10.5 10.1	Windows + Linux	Talend components with all products. Talend products with MDM or ESB.
DynamoDB	No specified version	N/A ¹	Talend products with Big Data
EXASolution	4	Windows	Talend products with DI, MDM, ESB or Big Data
Elasticsearch	Until 2.3.X	N/A ¹	Talend products with Big Data
FireBird	2.1	Windows + Linux	Talend products with DI, MDM, ESB or Big Data
Greenplum	4.2.1.0	Windows (client only) + Linux	Talend products with DI, MDM, ESB or Big Data
HSQLDb	1.8.0	N/A ¹	Talend products with DI, MDM, ESB or Big Data
Informix	11.50	Windows + Linux	All Talend products
Ingres	9.2	Windows + Linux	All Talend products
Interbase	7 and above	N/A ¹	Talend products with DI, MDM, ESB or Big Data
JavaDB	6	Windows + Linux	Talend products with DI, MDM, ESB or Big Data
Kafka	0.8.2.0 0.9.0.1 ³	Windows + Linux	Talend products with Big Data
LDAP	No version limitation	Windows + Linux	All Talend products
Microsoft AX	Dynamics AX 4.0 Dynamics AX 2012	N/A ¹	All Talend products
Microsoft CRM	4.0 2011 2013 2015	N/A ¹	All Talend products
MS SQL Server	2000 2003 2005 2008 2012 2014 ⁴	Windows + Linux	All Talend products
MaxDB	7.6	N/A ¹	Talend products with DI, MDM, ESB or Big Data
MongoDB	2.5.X 2.6.X 3.0.X 3.2.X	Windows + Linux	Talend products with Big Data
MySQL	Mysql4 Mysql5	Windows + Linux	All Talend products

Systems/Databases	Versions	OS	Available with...
	MariaDB		
Netezza	7.2	Windows + Linux	All Talend products
Neo4j	1.X.X 2.X.X/2.2.X/2.3	Linux	Talend products with Big Data
OleDb	2000 2003 2005 2007 2010	N/A ¹	All Talend products
Oracle	Oracle 8i/9i/10g/11g/11g (11.6)/12c	Windows + Linux	All Talend products
ParAccel	3.1 3.5	N/A ¹	Talend products with DI, MDM, ESB or Big Data
PostgreSQL	Prior to v9/v9.X	Windows + Linux	All Talend products
PostgresPlus	Prior to v9/v9.X	Windows + Linux	Talend products with DI, MDM, ESB or Big Data
Salesforce	V37 and earlier	Windows + Linux	All Talend products
SAP	4.6 ECC 6.0 EhP6	Windows	All Talend products
SAP Hana	1.0	Windows	All Talend products
SAS	9.1 9.2	Windows + Linux	Talend products with DI, MDM, ESB or Big Data
SQLite	3.6.7	Windows + Linux	All Talend products
Sybase	12.5 12.7 15.2 15.5 15.7	Windows + Linux	All Talend products
SybaseIQ	12.5 12.7 15.2	Windows + Linux	All Talend products
Teradata	12 13 14 15	Windows + Linux	All Talend products
VectorWise	2	Windows + Linux	Talend products with DI, MDM, ESB or Big Data
Vertica	3 3.5 4 4.1	Windows + Linux	Talend products with DI, MDM, ESB or Big Data

Systems/Databases	Versions	OS	Available with...
	5.0 5.1 6.0 6.1.X 7.0.X 7.1.X		
VtigerCRM	Vtiger 5.0 Vtiger 5.1	N/A ¹	All Talend products

1. The test information is not available yet.
2. When working with Java 8, only the General collation mode is supported.
3. The Kerberos kinit option and the Kerberos keytab option are both supported by the Studio.
4. No new feature introduced by MS SQL Server 2014 is supported.

