



Talend Open Studio for ESB Installation and Upgrade Guide for Windows

7.3.1

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Adapted for 7.3.1. Supersedes previous releases.

The content of this document is correct at the time of publication.

However, more recent updates may be available in the online version that can be found on [Talend Help Center](#).

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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.

Talend Open Studio for ESB: Prerequisites

About this installation guide

This guide explains how to install and configure your Talend product. You can install your product by using the Talend Installer, by manually installing the Talend modules, or with the Red Hat Package Manager (RPM). Before you begin, we recommend that you read the Preparing your installation section, and verify that you meet the hardware and software requirements for your installation.

Note: Talend Support will investigate issues related to third-party components and databases if they are required for the Talend product to function, but Talend cannot provide patches on behalf of third-party components or databases.

Preparing your installation

Software packages

This page lists the software packages you need to download to install your Talend product.

For the software package file names in the tables below:

- YYYYMMDD_HHmm corresponds to the package timestamp.
- A.B.C. corresponds to package version number (major.minor.patch.).

Note: The software modules must be the same version on both the client and server side. When downloading software packages, make sure the timestamps and version numbers are the same.

Manual installation software packages

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

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 Community](#). This is the place where you can ask questions to the community, and get answers.

Hardware requirements

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

Memory and disk 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.

Memory usage

Product	Client/Server	Memory requirements (minimum-recommended)
Talend Studio	Client	3GB – 4GB
Talend Runtime	Server	2GB – 4GB

Note: Depending on the number of executed processes running on a module, you may need to increase the available memory. If you have several products installed on the same host, Talend recommends to use an i7 CPU with 8 logical processors.

Disk space requirements

Product	Client or Server	Required disk space for installation	Required disk space for use
Talend Studio	Client	3GB	3GB+ recommended
Talend Runtime	Server	400MB	400MB+ recommended

1 For example, 5 million records = 10 GB required space on the disk. Talend recommends you double the required size to avoid problems during high transactions.

2 These requirements do not take the MongoDB metadata size into account.

3 Recommended for a campaign that counts 50,000 tasks, each task having 50 attributes.

Software requirements

Compatible Operating Systems

This page details the recommended and supported Operating Systems for Talend products.

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.

Talend Studio

Table 1: Compatible operating systems for Talend Studio

Operating system family (64 bit)	Operating system	Version	Support type
Linux	Ubuntu	18.04 LTS	Recommended
	Red Hat Enterprise Linux Server	8	Supported
		7	Supported
	CentOS	8	Supported
		7	Supported
Microsoft	Windows	10	Recommended
	Windows Server	2019	Supported
		2016 (RTM)	Supported
		2012	Supported
Mac	Apple MacOS	Catalina 10.15	Supported
		Mojave 10.14	Supported
		High Sierra 10.13	Supported

Talend Server modules

Given that Oracle has a stated compatibility statement for Redhat RHEL, Talend considers that Oracle Linux is supported, for those versions which correspond to RHEL versions that Talend lists in the User Documentation.

The server modules include:

- Talend ESB Servers
- Talend Runtime

Table 2: Compatible operating systems for Talend Server modules

Operating system family (64 bit)	Operating system	Version	Support type
Linux	Red Hat Enterprise Linux Server	8	Recommended
		7	Supported
		6	Supported
	CentOS	8	Recommended
		7	Supported
		6	Supported
	Ubuntu	18.04	Supported
	Amazon Linux	Amazon Linux 2	Supported
		Amazon Linux	Supported
	SUSE	Linux Enterprise Server (SLES) 12	Supported
Microsoft	Windows Server	2019	Recommended
		2016	Supported
	Windows Server on AWS	2016 (RTM)	Supported
		2012 ¹	Supported

¹ Microsoft Windows Server 2012 is not supported by Talend Data Preparation.

Compatible Java Environments

The following tables provide information on the recommended Java Environment you should download and install to use your Talend product.

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 the Talend Studio User Guide.

Note: All Talend products and associated third-party applications, such as the Hadoop cluster, should use the same Java version for compliance. Before you install or upgrade any associated third-party application, Talend recommends that you check which Java version they support.

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.

Studio Java environments

Table 3: Compatible Java environments for Talend Studio

Java platform	Java version ^{1,2,3}	Support type
Open JDK	11	Recommended
	8	Supported
Oracle	11	Recommended
	8	Supported

1 When running Oracle 8, Studio should conform to JDK Compiler Compliance Level 1.8 (default). If the installed JDK version is lower than 1.8.0_161, you need to also install the additional resource [Java Cryptography Extension \(JCE\) Unlimited Strength Jurisdiction Policy Files](#). This is also applicable to the execution of standalone Jobs.

2 When running Oracle 11, Studio should conform to JDK Compiler Compliance Level 11 (default).

3 The recommended distribution for Open JDK is [Zulu](#).

Server Java environments

The server modules include:

- Talend ESB Servers
- Talend Runtime

Table 4: Compatible Java environments for Talend Server modules

Talend Server Module	Java platform	Java version ^{1, 2, 3}	Support type
Talend JobServer	Open JDK	11	Recommended
		8	Supported
	Oracle	11	Recommended
		8	Supported
Talend MDM Server	Open JDK	11	Recommended
		8	Supported
	Oracle	11	Recommended
		8	Supported
Talend ESB/Talend Runtime	Open JDK	11	Recommended
		8	Supported
	Oracle	11	Recommended
		8	Supported

Talend Server Module	Java platform	Java version ^{1, 2, 3}	Support type
Talend ESB/Microservices	Open JDK	11	Recommended
		8	Supported
	Oracle	11	Recommended
		8	Supported
Talend Server Application	Open JDK	11	Recommended
		8	Supported
	Oracle	11	Recommended
		8	Supported

1 When running Oracle 8, Studio should conform to JDK Compiler Compliance Level 1.8 (default).

2 When running Oracle 11, Studio should conform to JDK Compiler Compliance Level 11 (default).

3 The recommended distribution for Open JDK is [Zulu](#)

Compatible Apache software and JMS Brokers for Talend ESB

The following tables provide information on the compatible Apache software and JMS Brokers for Talend ESB.

Supported Apache software

Software	More information
Apache Karaf 4.2.7 ¹	Release notes
Apache CXF 3.3.4 ¹	Release notes
Apache Camel 2.24.2 ²	Release notes
Apache ActiveMQ 5.15.10 ¹	Release notes

1 Service release upgrade.

2 Minor release upgrade.

Supported Messaging Brokers for SOAP/JMS

Software	More information
Apache ActiveMQ 5.15.10	Release notes
IBM WebSphere MQ 9.1	
IBM WebSphere MQ 9.0	
IBM WebSphere MQ 8.5	

Compatible web application servers

The following tables provide information on the recommended and supported Web application servers for the Talend server modules.

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.

Compatible containers

The following tables provide information on the recommended and supported containers for the Talend server modules.

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.

Talend ESB

Runtime Containers	Version	Support type
Talend Runtime (Apache Karaf)	7.3 ²	Recommended
Apache Tomcat	9.0.30 ¹	Recommended
	9.0.30 ³	Supported

¹ Recommended version for Talend Identity Management.

² Not recommended for Talend Identity Management.

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

Compatible Web browsers

The following table provides information on the recommended and supported Web browsers you should use to take the most of your Talend products.

The minimum supported screen resolution is 1366 x 768 (px). Browser and system settings, such as scaling, zooming, and window size, will affect browser compatibility.

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.

Web browser	Support type
Mozilla Firefox ESR 68	Recommended
Mozilla Firefox up to latest available browser version	Supported
Microsoft Internet Explorer 11 or later	Supported
Microsoft Edge up to latest available browser version	Supported
Apple Safari 12 or later	Supported
Google Chrome up to latest available browser version	Supported

Note: Talend recommends that you ensure you are running the latest version of your browser. Talend supports the latest versions of the browsers listed above, unless a specific version is listed.

Compatible databases

The following tables provide information on the recommended and supported databases you can use with Talend server modules.

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.

ESB Service Registry/Authorization/Event Logging

Table 5: Compatible databases for ESB Service Registry/Service Activity Monitoring/Provisioning Service/Authorization/Event Logging

Database	Version	Supported drivers	Support type
MySQL	8.0 ^{1,3}	mysql-connector-java-8.x.jar	Recommended
Oracle	19c	ojdbc7-11g.jar	Recommended
	18c	ojdbc7.jar	Supported
	12c release 1 ³	ojdbc8.jar	Supported
	11g	ojdbc10.jar	Supported
Azure SQL		jtids-1.3.1_patched.jar	Supported
HSQL ⁴	2.3.2		Supported
Derby DB	10.8 (or later)		Supported

Database	Version	Supported drivers	Support type
IBM DB2 ⁵	10.5		Supported
MS SQL Server ^{2, 3}	2017	jtds-1.3.1.jar	Supported
	2014		Supported
	2012 SP2		Supported
PostgreSQL ³	11	postgresql-42.2.2.jre7.jar	Supported
	10		Supported
	9.6		Supported
	9.5		Supported

1 Google Cloud SQL is supported.

2 Talend supports the Always Encrypted feature of Microsoft SQL Server 2016 or higher.

3 Amazon RDS is supported.

4 Embedded in the product.

5 Service Activity Monitoring only.

Compatible messaging systems

The following tables provide information on the recommended messaging systems you can use with Talend server modules.

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.

Warning: When Apache Kafka is installed on a Windows machine, the Kafka broker cannot delete old log files. This is due to how it manages files on Windows operating systems. If you install Apache Kafka on Windows, it will eventually stop working because it cannot purge old log files, which can cause Talend Data Preparation, Talend Data Stewardship, and Talend Dictionary Service to stop working. Talend recommends to install Apache Kafka on a Linux machine.

Compatible artifact repository

The following table provides information on the supported artifact repository you can use with Talend server modules.

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.

Artifact repository	Version	Support type
JFrog Artifactory	SaaS	Recommended
	6.12 ¹	Recommended
Sonatype Nexus	3.15 to 3.18	Supported

¹ Latest at the date of release – September 23, 2019.

Compatible execution servers

Use the following table to ensure that your execution server version is compatible with Talend Administration Center, Talend CommandLine and Talend Studio versions.

Note: The information contained in this section is valid at the date of publication but may be subject to change at a later date.

Job Servers (Talend JobServer and Job server in Talend Runtime)

Talend Administration Center, Talend CommandLine and Talend Studio version	Compatible Talend JobServer versions
7.3.x	6.4.x, 6.5.x, 7.0.x, 7.1.x, 7.2.x and 7.3.x

Warning:

When activating SSL and token authentication in Talend Administration Center, only Job Servers that support SSL / token authentication can be used. Talend Administration Center is not able to monitor older Job Servers that do not support encrypted communication.

For more information, see *Configuring SSL transport and authentication*.

Port information

The following tables list the most important TCP/IP ports the Talend products use.

You need to make sure that your firewall configuration is compatible with these ports or change the default ports where needed.

Add the following websites to the whitelist on every machine that runs a Talend module:

URL	Port	Usage
update.talend.com	443	For downloading additional packages such as Bonita BPM Integration, Talend Metadata Bridge and upgrades from Talend Studio tools

URL	Port	Usage
talend-update.talend.com	443	For downloading libraries in Talend Studio (mainly for components)
www.talend.com	443	For testing and sending usage statistics from Talend Studio
talendforge.org	443	For using Talend Exchange in Talend Studio and for users actions such as clicking on forum links
community.talend.com	443	For user actions, such as clicking on Community links, etc.
help.talend.com	443	For user actions, such as clicking on help links, etc.

Note: If your deployment depends on other third-party software, you may need to add other URLs to your whitelist. Talend recommends that you whitelist all hostnames that have dynamic IP addresses.

In this table:

- **Port:** a TCP/IP port or a range of ports.
- **Direction:** In (Inbound) and Out (Outbound) refer to the direction of requests between a port and the service (or CFX route) communicating with it. For example, if a service is listening for HTTP requests on port 9080, then it is an inbound port because other services are performing requests on it. However, if the service calls another service on a given port, then it is an outbound port.
- **Usage:** which part of the Product component uses this port (for example 1099 is used by the JMX Monitoring component of Talend Runtime).
- **Configuration file:** the file or location where the value can be changed.
- **Note:** anything which is important to mention additionally.

Talend Studio ports

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

Talend ESB Ports

Port	Direction	Usage	Configuration file (./ etc)	Note
8040	IN	Standard HTTP port	org.ops4j.pax.web.cfg	See the Talend ESB Container Administration Guide for config scripts and also the admin: command which allows you to set ports to different values.
9001	IN	Standard HTTPS port	org.ops4j.pax.web.cfg	
1099	IN	JMX - RMI Registry Port	org.apache.karaf.management.cfg	
44444	IN	JMX - RMI Registry Port	org.apache.karaf.management.cfg	
8101	IN	Apache Karaf - SSH Port	org.apache.karaf.shell.cfg	
61616	IN	Messaging - ActiveMQ Broker Port	system.properties	
2181	IN OUT	ESB Locator - Apache Zookeeper Port	Server: org.talend.esb.locator.server.cfg Client: org.talend.esb.locator.cfg	
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 - Talend Artifact Repository access	org.ops4j.pax.url.mvn.cfg	

Port	Direction	Usage	Configuration file (./ etc)	Note
(*)	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.

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.

Procedure

- Find the folder where Java is installed.
For example:
 - C:\Program Files\Java\JREx.x.x
 - C:\Program Files\Zulu
- Open the **Start** menu and type `Environment variable` in the search bar to open the Environment variable properties.
- Click **Environment Variables....**
- Under **System Variables**, click **New...** to create a variable. Name the variable `JAVA_HOME`, enter the path to your Java environment, and click **OK**.
- 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`

Installing your Talend Open Studio for ESB manually

Installing and configuring your Talend Studio

Unzip the archive

Procedure

1. Download your product from [this page](#).
2. Unzip it using 7-zip.

Results

When you extract it, you get two folders:

- `Runtime_ESBSE` that contains Talend Runtime and examples.
- `studio` that contains Talend Studio.

Editing the memory and JVM settings

To gain in performance at runtime and when launching Talend Studio, proceed as follows: you can edit the memory settings in the `.ini`.

Procedure

1. Edit the `TOS_ESB-win-x86_64.ini` file.
2. Edit the memory attributes. For example:

```
-vmargs -Xms512m -Xmx1536m -XX:MaxMetaspaceSize=512m
```

Tip: For big projects, you may need to increase `Xmx` to `4096m`.

For more details, see <http://www.oracle.com/technetwork/java/hotspotfaq-138619.html>.

Launching your Talend Studio

Procedure

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

Installing external modules

Talend Studio requires specific third-party Java libraries or database drivers to be installed to connect to sources and targets.

Those libraries or database drivers, known as external modules, may 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 some of these external modules within Talend Studio. You need to install them for your Studio to functional properly.

Warning: Make sure that the `-Dtalend.disable.internet` parameter is not present in the Studio `.ini` file or is set to `false`.

When to install external modules

Your Talend Studio will let you know when you need to install external modules and what external modules you need to install.

Your Talend Studio notify you about required external modules in several ways.

- The **Additional Talend packages** wizard opens when you launch your Talend Studio if any additional packages, including external modules, need to be installed for any features to function in the Studio.

Tip: The **Additional Talend packages** wizard also opens when you select **Help > Install Additional Packages** from the Studio menu.








- 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 for the Studio to work properly, including those Java libraries and drivers that you must install.

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	Maven URI
Not installed	tSugarCRMInput	activation.jar	mvn:org.talend.libraries/activation/6.0.0/jar
Not installed	tTigerCRMOutput	activation.jar	mvn:org.talend.libraries/activation/6.0.0/jar
Not installed	plugin:org.talend.lib...	activation.jar	mvn:org.talend.libraries/activation/6.0.0/jar
Not installed	tWebService	activation.jar	mvn:org.talend.libraries/activation/6.0.0/jar
Not installed	tPOP	activation.jar	mvn:org.talend.libraries/activation/6.0.0/jar
Not installed	tSageX3Output	activation.jar	mvn:org.talend.libraries/activation/6.0.0/jar
Not installed	tMicrosoftCrmOutput	activation.jar	mvn:org.talend.libraries/activation/6.0.0/jar
Not installed	tFileInputMail	activation.jar	mvn:org.talend.libraries/activation/6.0.0/jar
Not installed	tMicrosoftCrmInput	activation.jar	mvn:org.talend.libraries/activation/6.0.0/jar
Not installed	tWebServiceOutput	activation.jar	mvn:org.talend.libraries/activation/6.0.0/jar

In this view:

Item	Description
Filter text field	Allows you to search external modules based on the status, the context, the module file name, and the Maven URI.
Status	Points out if a module is installed or not installed on your system.

Item	Description
	<p>The  icon indicates that the module is not necessarily required for the corresponding component or Metadata connection listed in this column.</p> <p>The  icon indicates that the module is absolutely required for the corresponding component or Metadata connection.</p>
Context	Gives the name of the component or Metadata connection using the module. If this column is empty, the module is then required for the general use of your Talend Studio.
Module	Gives the exact name of the module.
Maven URI	<p>Uniquely identifies the module deployment in Maven.</p> <p>You can customize the Maven URI of a module by clicking the Maven URI field and then clicking the [...] button that appears. For more information, see Customizing the Maven URI for external module deployment on page 21.</p>
	<p>Refreshes this view to reflect the latest module installation status.</p> <p>In case of collaborative work, once a required module is installed in one user's studio, the other users can simply refresh their Modules view to add this module to their own Talend Studio.</p>
	Imports custom Maven settings from a local file.
	Exports custom Maven settings into a local file.
	Allows you to install an already downloaded external module into your Studio. For details, see Installing external modules manually using the Modules view on page 24.
	Opens the Jar download and installation wizard, which will list all the selected external modules that are not integrated in Talend Studio.

- A Jar installation wizard appears 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.
 - click the **Check** button in a Metadata connection setup wizard in the Studio if one or more external modules required for the connection are missing in the Studio.
 - 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.

- select one or more modules that are not integrated in the Studio and click the  button in the **Modules** view.

List of modules to be downloaded automatically or imported manually.

The following modules are not yet installed. Please download and install all required modules.

Jar	Required by comp...	License	Maven URI	More information	Action
asm-tree-5.0.4.jar	plugin:org.talend.h...	Apache-2.0	mvn:https://talend-update.tal...		Download and Install
asm-tree-6.0.jar	plugin:org.talend.h...	Apache-2.0	mvn:https://talend-update.tal...		Download and Install
asm-util-5.0.4.jar	plugin:org.talend.h...	Apache-2.0	mvn:https://talend-update.tal...		Download and Install
aspcfs.jar	tCentricCRMInput ...	Proprietary	mvn:org.talend.libraries/aspcf...		Download and Install
async-http-client-1.8.16.jar	plugin:org.talend.h...	Apache-2.0	mvn:https://talend-update.tal...		Download and Install

Close Download and install all modules available

This wizard:

- lists the external modules to be installed and the licenses under which they are provided
- provides the default Maven URIs that identify the deployment of the modules
- provides the official websites where you can learn more about the modules
- lets you download and install automatically all the modules available in the Talend repository
- allows you to install those not available in the Talend repository 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.

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

Customizing the Maven URI for external module deployment

In Talend Studio, each external module is given a default URI to identify its deployment in Maven. When needed, you can change the Maven URI.

For example, when replacing an installed database driver with a new version, you need to specify another Maven URI for it.

Note:

Changing the Maven URI for an external module will affect all the components and metadata connections that use that module within the project.


When working on a remote project, your custom Maven URI settings will be automatically synchronized to the Talend Artifact Repository and will be used when other users working on the same project install the external module.

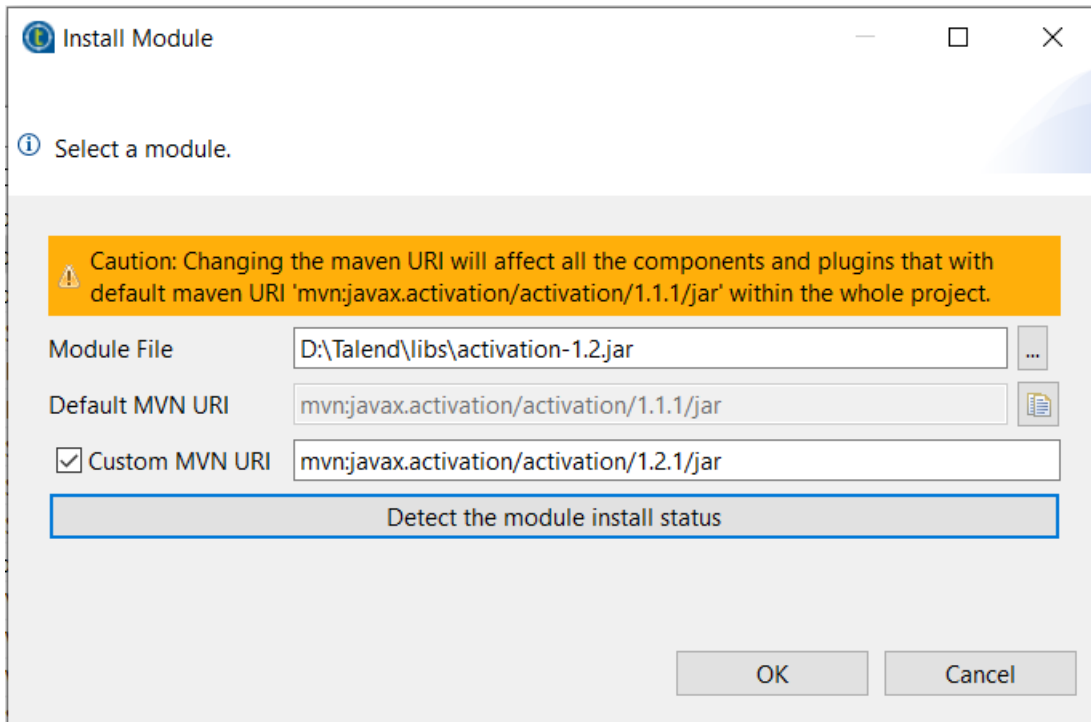
Procedure

1. In the **Modules** view, click the Maven URI you want to customize and then click the [...] button that appears.

The **Install Module** dialog box opens.

2. If you want to install another version of the external module, specify the full path to the module file in the **Module File** field, or click the [...] button to browse in your local file system.
3. Select the **Custom MVN URI** check box and enter a new URI in the field.

You can click the  button next to the Default MVN URI field to copy the default Maven URI, then paste it in the **Custom MVN URI** field and modify it.



4. Click the **Detect the module install status** button and then **OK** to validate the custom URI and close the dialog box.

Results

The new Maven URI takes effect and is displayed in the **Modules** view, from which can export all your Maven URI changes into a local JSON file.

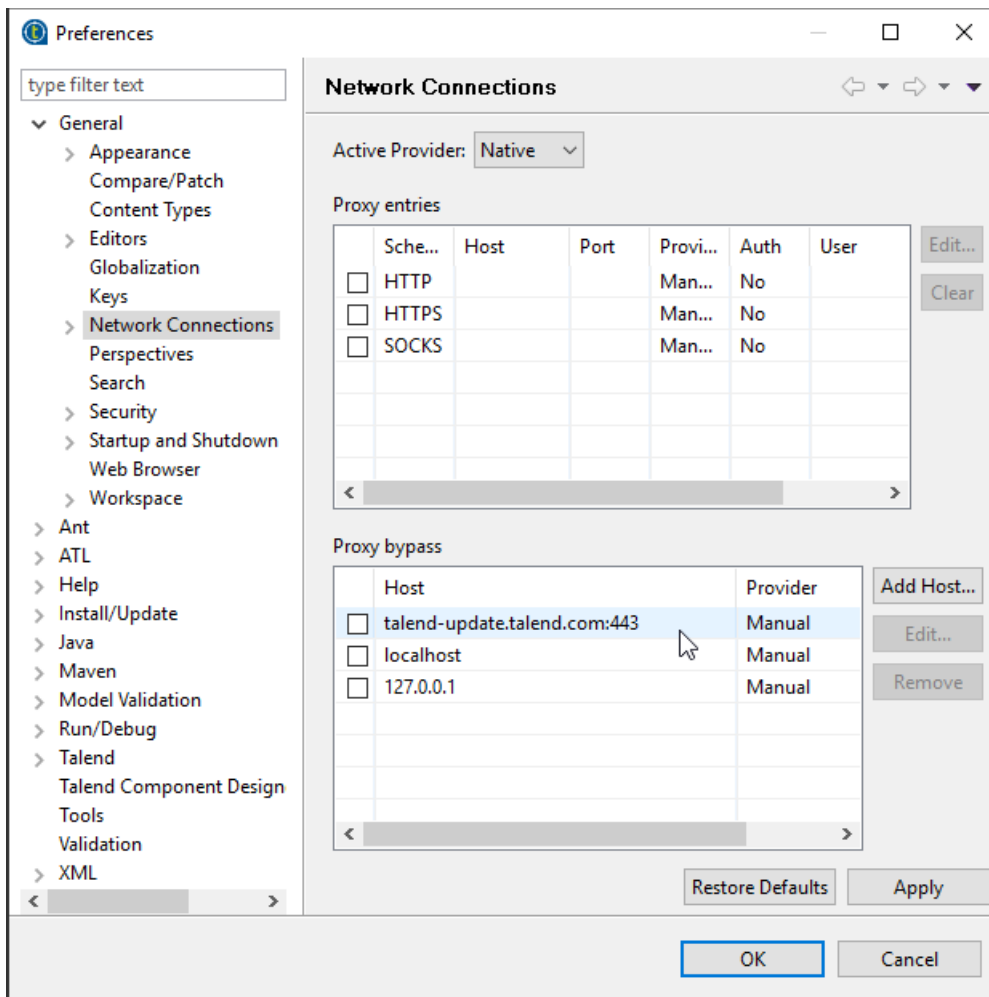
Installing external modules from within the Studio

You can download and automatically install most external modules using the wizard provided by your Talend Studio.

Before you begin

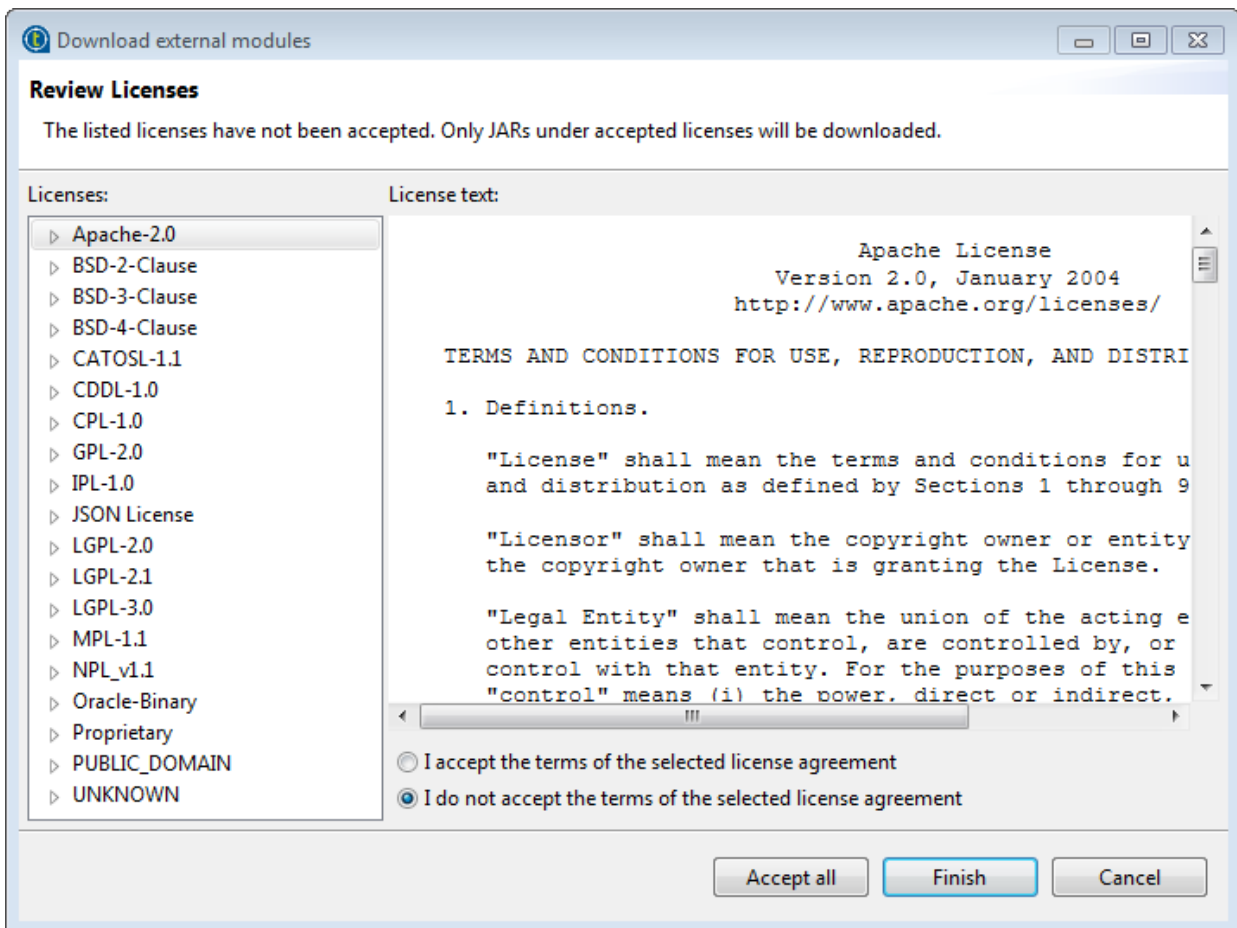
Make sure your Talend Studio has a secure Internet connection.

If you are working behind a network proxy, make sure you have correctly set up your proxy and add the web site <http://talend-update.talend.com> and the port 443 to your whitelist. 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**.



Procedure

1. Do the following to open the **Download external modules** dialog box:
 - In the **Additional Talend Packages** wizard, select the **Required third-party libraries** and/or **Optional third-party libraries** check boxes and click **Finish**.
 - 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.



2. Accept the license terms and start the download and installation process:

- 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 download and install all external modules provided under all the listed licenses, click the **Accept all** button.

Results

When the installation process is completed, the chosen external module or modules are installed into your Talend Studio, and you can use Talend Studio features that depend on these modules.


Installing external modules manually using the Modules view

If you have already downloaded external modules, you can install them manually into your Talend Studio.

Before you begin

If you are going to install the JDBC driver for Oracle 9i into your Talend Studio, change the file name from `ojdbc14.jar` to `ojdbc14-9i.jar` first.

Procedure

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

2. 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 into your Talend Studio.

Results

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

Installing external modules manually for Talend Web applications

Some modules required for a Talend Web application to work 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.

Procedure

- For the Talend MDM Server, place the downloaded JDBC drivers for the Oracle and MySQL databases in the following folder:

```
<TomcatPath>/webapps/talendmdm/WEB-INF/lib
```

- For Talend Administration Center, place the downloaded modules in the following folder:

```
<TomcatPath>/webapps/org.talend.administrator/WEB-INF/lib
```

Disabling Internet access for the Studio

About this task

You can disable Internet access for your Talend Studio by editing the Studio `.ini` file.

Warning: Do this only if you have no needs of accessing the Internet to download and install custom components, third-party libraries, and so on.

Procedure

1. Open the Studio `.ini` file corresponding to your operating system, and add the following line to it:

```
-Dtalend.disable.internet=true
```

2. Restart your Talend Studio.
When launched again, the Studio will not show:
 - The **Exchange** link on the toolbar
 - The **Talend > Exchange** node in the **Preferences** dialog
 - The options for installing third party libraries in the **Additional Packages** dialog box
 - The **Talend News** link on the welcome screen

Installing and configuring Talend ESB

Talend ESB is provided to you through an archive file named `Talend-ESB-VA.B.C.zip` that you can extract to install Talend ESB on your server machines.

The following procedures detail the installation and configuration of the ready-to-use tools contained in the Talend ESB package:

- [Running Talend ESB Container](#) on page 26
- [Installing Apache ActiveMQ](#) on page 27
- [Accessing Service Locator](#) on page 29
- [Installing Service Activity Monitoring](#) on page 29
- [Installing Security Token Services](#) on page 32
- [Enabling Syncope Login Module](#) on page 34

Note about the start commands: 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 all the Infrastructure Services, except the Event Logging features which have to be started individually with the `tesb:start-el-default` command.

For more information about the Infrastructure Services, see the Talend ESB Infrastructure Services Configuration Guide.

For more information about the logging modules and the advanced configuration of those Services, see [Installing and configuring Talend logging modules](#) and Talend ESB Container Administration Guide.

Running Talend ESB Container

Once Talend ESB installed, you can access Talend ESB Container in the `Talend-ESB-VA.B.C/container` directory.

Talend ESB Container is an OSGI container, based on Apache Karaf, allowing you to deploy and execute various components and applications inside its `Talend-ESB-VA.B.C/container/deploy` folder.

Procedure

1. Browse to the `Talend-ESB-VA.B.C/container/bin` directory.
2. Run the `trun.bat` file.

Results

After starting Talend ESB Container, you need to wait a few seconds for initialization to complete before entering the commands. Karaf, on which the Talend ESB Container is built, starts the non core bundles in background. So even if the console is already available, the commands may not.

For more information on Talend ESB Container usage and configuration, see the Talend ESB Container Administration Guide and Talend ESB Infrastructure Services Configuration Guide.

Once Talend ESB Container is installed and launched, you will be able to install all the other components available in the Talend ESB package as features directly in the container. Thus, when launching Talend ESB Container, all the other components will be launched at the same time.

You also have the possibility to install these components as standalone.

Warning: When installing Talend ESB components as features in the container, you might encounter memory problems. For more information on how to increase the memory allocation of the container, see Talend ESB Container Administrator's Guide.

This implementation can ease the management of Talend ESB but if you want to create a cluster environment, you will need to replicate the container to have several containers with the right components installed as features in it, whereas if you are using the different components as standalone you will only have to duplicate the corresponding instance.

If you only want to use several basic containers, you can also use Talend Runtime, as Talend Runtime is the exact equivalent of the container folder provided in Talend ESB. For more information about the installation of Talend Runtime, see [Installing Talend Runtime](#).

Customizing the access parameters of Talend ESB Container

How to configure the Talend ESB Container parameters in order to adapt it to your environment.

Procedure

1. Go to the following directory: `Talend-ESB-VA.B.C/container/etc`
2. Edit the following files for example:
 - `org.ops4j.pax.web.cfg` to change the HTTP listening port.
 - `org.apache.karaf.management.cfg` to manage RMI connection to connect to Talend ESB Container via JMX in order to manage and supervise each of its components and their activity from a JConsole, for example.

Configure the proxy settings

How to configure the proxy settings of the Talend ESB Container according to your environment.

Procedure

1. Open the following file to edit it: `Talend-ESB-VA.B.C/container/etc/org.ops4j.pax.web.cfg`
2. Uncomment the line: `org.ops4j.pax.url.mvn.proxySupport=true` so that the settings in the `settings.xml.sample` file are taken into account.
3. Update the `etc/settings.xml.sample` file according to your proxy configuration.

Installing Apache ActiveMQ

ActiveMQ is a message broker enabling to support different messaging options. It will provide you high availability, performance, scalability, reliability and security for enterprise messaging. And it allows you to mediate events between distributed applications, guaranteeing that they reach their intended recipients.

Once Talend ESB installed, you can either access a standalone instance of ActiveMQ in the `Talend-ESB-VA.B.C/activemq` directory or install it as a Feature directly within the Talend ESB Container.

Once installed, ActiveMQ can be used in Talend's Mediation routes, for example.

Running ActiveMQ as standalone

Procedure

1. Browse to the `Talend-ESB-VA.B.C/activemq/bin` directory.
2. Run the `activemq.bat` file.

Configuring Apache ActiveMQ

There are a number of configuration options, and these are listed by entering `activemq -h`.

You can configure the ActiveMQ broker by using either a configuration file or via broker URI. For more information about the broker URI syntax, see the online [Apache ActiveMQ documentation](#).

The default location for configuration files is in `activemq/conf`.

For more information on how to configure Apache ActiveMQ, see the Talend ESB Infrastructure Services Configuration Guide.

Installing Apache MQ as an OSGi Feature

ActiveMQ can also be installed as a Feature in Talend ESB Container, this way, it will be automatically launched when launching Talend ESB Container.

Procedure

1. In the Talend Runtime container, use the following command to start ActiveMQ: `karaf@trun> feature:install activemq`
2. By default, no broker is created in the Container. To start a broker within the Talend Runtime container, use the following command: `karaf@trun> feature:install activemq-broker`

It creates a default broker named **amq-broker** and its configuration file: `<TalendRuntime Path>/container/etc/org.apache.activemq.server-default.cfg`. You can modify the broker's default configuration by editing this file. For more information on how to create multiple brokers, to remove or to query a broker, see the Talend ESB Infrastructure Services Configuration Guide.

This command also installs the ActiveMQ Web console, available at: `http://localhost:8040/activemqweb/`

For more information on ActiveMQ Web console advanced configuration, see the Talend ESB Infrastructure Services Configuration Guide.

Install Apache ActiveMQ and create a broker

Procedure

1. In the Talend Runtime container, use the following command to start ActiveMQ: `karaf@trun> feature:install activemq`
2. By default, no broker is created in the Container. To start a broker within the Talend Runtime container, use the following command: `karaf@trun> feature:install activemq-broker`

It creates a default broker named **amq-broker** and its configuration file: `<TalendRuntime Path>/container/etc/org.apache.activemq.server-default.cfg`. You can modify the broker's default configuration by editing this file. For more information on how to create multiple brokers, to remove or to query a broker, see the Talend ESB Infrastructure Services Configuration Guide.

This command also installs the ActiveMQ Web console, available at: `http://localhost:8040/activemqweb/`

For more information on ActiveMQ Web console advanced configuration, see the Talend ESB Infrastructure Services Configuration Guide.

Accessing Service Locator

Service Locator provides automatic and transparent failover and load balancing between service Consumers and Providers and allows for dynamic endpoint registration and lookup.

Once Talend ESB installed, you can access the Service Locator in the `Talend-ESB-VA.B.C/zookeeper` directory or install it as a feature directly within the Talend ESB Container.

Installing Service Locator as an OSGi Feature (Recommended)

Service Locator can also be installed as a Feature in Talend ESB Container, this way, it will be automatically launched when launching Talend ESB Container.

Procedure

1. Run the Container.
2. Type in the following command to start the feature corresponding to Service Locator:
`tesb:start-locator`.
3. To stop the Service Locator, type in the following command: `tesb:stop-locator`.

Installing Service Locator as standalone (Alternative)

Procedure

1. Open a command window.
2. Browse to the `Talend-ESB-VA.B.C/zookeeper/bin` directory.
3. Run the following command:

```
zkServer.cmd start
```

To customize the configuration of the Service Locator standalone, edit the file `Talend-ESB-VA.B.C/zookeeper/conf/zoo.cfg`. For more information on the parameters you can edit, see [Configuration file properties of the Service Locator standalone](#) on page 29.

Configuration file properties of the Service Locator standalone

To customize the configuration of the Service Locator standalone, edit the following file: `Talend-ESB-VA.B.C/zookeeper/conf/zoo.cfg` and change the parameters according to your needs.

Field name	Description
tickTime	the basic time unit in milliseconds used by the Service Locator. It is used to do heartbeats, and the minimum session timeout will be twice the tickTime
dataDir	the location to store the in-memory database snapshots and, unless specified otherwise, the transaction log of updates to the database
clientPort	the port to listen for client connections

Installing Service Activity Monitoring

Service Activity Monitoring (SAM) facilitates the capture of analysis of service activity, including service response times, traffic patterns, auditing and more, by capturing events and storing information. This component consists of two parts:

- Agents (`sam-agent`) which gather and send monitoring data
- A monitoring Server (`sam-server`) which processes and stores the data

The sequence of how these are used is as follows:

1. The Agent creates events out of requests and replies from both the service consumer and provider side.
2. The events are first collected locally and then sent to the Monitoring Server periodically (so as not to disturb the normal message flow).
3. When the Monitoring Server receives events from the Agent, it optionally uses filters and/or handlers on those events and stores them into a database.

The Agent and Monitoring Server are made available as follows:

- The agent is by default installed as a feature in Talend ESB Container.
- The Monitoring Server needs to be installed into a Servlet Container (Tomcat) or an OSGi Container (Talend ESB Container) and needs access to a database.

Once Talend ESB installed, you can access the Service Activity Monitoring server in the `Talend-ESB-VA.B.C/add-ons/sam` directory to install it or directly install it as a feature within the Talend ESB Container.

Prerequisites to the Monitoring Server

The Monitoring Server requires a database engine to store Events data. The supported databases are listed in [Compatible databases](#) on page 12.

The following are the script files corresponding to the databases, run them to configure the database properly. You can find the SQL scripts in the `Talend-ESB-VA.B.C/add-ons/sam/db` directory.

SQL script filename	Database
<code>create.sql</code>	Apache Derby
<code>create_mysql.sql</code>	MySQL
<code>create_oracle.sql</code>	Oracle
<code>create_sqlserver.sql</code>	SQL Server
<code>create_h2.sql</code>	H2 Database Engine
<code>create_db2.sql</code>	IBM DB2

Procedure

1. Make sure your chosen database is installed properly and is accessible.
2. Login with a user which has CREATE permissions.
3. Run the init SQL script for the corresponding database from the table above.

Note: If the value of `db.recreate` property in the `logserver.properties` is set to `true`, the init SQL script will be executed automatically when starting the Monitoring Server. But this is not recommended for any database except Apache Derby running in embedded mode.

Results

You will then find the EVENTS and EVENTS_CUSTOMINFO table have been created in your database.

Now, you can install the Monitoring server either in standalone or as a Feature in the Talend ESB Container.

Installing SAM as an OSGi Feature (Recommended)

Service Activity Monitoring server can be installed as a feature in Talend ESB Container, this way, it will be automatically launched when launching Talend ESB Container.

Procedure

1. Run the Container.
2. Type in the following command to start the SAM server Feature: `tesb:start-sam`.
3. To stop the SAM server, type in the following command: `tesb:stop-sam`.

As Web application (Alternative)

To install the Service Activity Monitoring (SAM) server as Web application, you need to:

- deploy it in an Servlet Container.
- configure the database connection information,
- configure the Monitoring endpoint in the Talend ESB Container.

For more information, see the procedures below.

Deploy SAM into Apache Tomcat

Procedure

1. Copy the `sam-server-war.war` file of the `Talend-ESB-VA.B.C/add-ons/sam` directory.
2. Paste it in the `<TomcatPath>/webapps` directory. The next time you will start Tomcat, the SAM Server application will automatically be deployed on the server.

To do it in command line, you can use the following command:

```
copy Talend-ESB-VA.B.C/add-ons/sam/sam-server-war.war <TomcatPath>\webapps
```

3. You can check whether the SAM Server has been successfully installed and is running by going to the following URL: `http://localhost:8080/sam-server-war/services/sam`

Warning: `http://localhost:8080/sam-server-war/services/sam` is only given as example. Depending on your configuration, you may have to replace `<localhost>` with the IP address of the Web server and `<8080>` with the actual port used for the application.

Configure the database connection information

Procedure

1. Open the `<TomcatPath>/conf/context.xml` file and add the following lines, according to your database server:

For H2:

```
<Resource name="jdbc/datasource" auth="Container"
type="javax.sql.DataSource" username="sa" password=""
driverClassName="org.h2.Driver"
url="jdbc:h2:tcp://localhost/~/test"
maxActive="8" maxIdle="30" maxWait="10000"/>
```

For Derby:

```
<Resource name="jdbc/datasource" auth="Container"
type="javax.sql.DataSource" username="test" password="test"
driverClassName="org.apache.derby.jdbc.ClientDriver"
url="jdbc:derby://localhost:1527/db;create=true"
maxActive="8" maxIdle="30" maxWait="10000"/>
```

For MySQL:

```
<Resource name="jdbc/datasource" auth="Container"
type="javax.sql.DataSource" username="test" password="test"
driverClassName="com.mysql.jdbc.Driver"
url="jdbc:mysql://localhost:3306/test"
maxActive="8" maxIdle="30" maxWait="10000"/>
```

For DB2:

```
<Resource name="jdbc/datasource" auth="Container"
type="javax.sql.DataSource" username="db2admin" password="qwaszx"
driverClassName="com.ibm.db2.jcc.DB2Driver"
url="jdbc:db2://localhost:50000/TEST"
maxActive="8" maxIdle="30" maxWait="10000"/>
```

For SQLServer:

```
<Resource name="jdbc/datasource" auth="Container"
type="javax.sql.DataSource" username="test" password="test"
driverClassName="com.microsoft.sqlserver.jdbc.SQLServerDriver"
url="jdbc:sqlserver://localhost:1029;instanceName=sqlexpress;databaseName=Test"
maxActive="8" maxIdle="30" maxWait="10000"/>
```

For Oracle:

```
<Resource name="jdbc/datasource" auth="Container"
type="javax.sql.DataSource" username="xxx" password="xxx"
driverClassName="oracle.jdbc.pool.OracleDataSource"
url="jdbc:oracle:thin:@localhost:1521:XE"
maxActive="8" maxIdle="30" maxWait="10000"/>
```

2. Check the database connection information specified in the following file, and edit them if needed: `<TomcatPath>/webapps/sam-server-war/WEB-INF/logserver.properties`

Configure the Monitoring endpoint in the Talend ESB Container

Procedure

1. In the Service Activity Monitoring Server page available at `http://localhost:8080/sam-server-war/services/sam`, click the **services** link.
2. In the services page, copy the Endpoint address, for example: `http://localhost:8080/sam-server-war/services/MonitoringServiceSOAP`
3. Go to the Talend ESB Container configuration directory: `Talend-ESB-VA.B.C/container/etc` to configure its SAM agent with the right Monitoring endpoint.
4. Edit the `org.talend.esb.sam.agent.cfg` file.
5. Replace the **service.url** field with the new Endpoint address.

Installing Security Token Services

An informal description of a Security Token Service is that it is a web service that offers some or all of the following services (among others):

- It can issue a Security Token of some sort based on presented or configured credentials.
- It can say whether a given Security Token is valid or not.
- It can renew (extend the validity of) a given Security Token.
- It can cancel (remove the validity of) a given Security Token.
- It can transform a given Security Token into a Security Token of a different sort.

Offloading this functionality to another service greatly simplifies client and service provider functionality, as they can simply call the STS appropriately rather than have to handle the security processing logic themselves. For example, the WSDL of a service provider might state that a particular type of security token is required to access the service. Then:

1. A client of the service can ask an STS for a Security Token of that particular type, which is then sent to the service provider.
2. The service provider could choose to validate the received token locally, or dispatch the token to an STS for validation.

These are the two most common use cases of an STS.

Running STS server as feature in container (Recommended)

Procedure

1. To enable the STS server Feature in the Karaf container, execute the following command:
`tesb:start-sts`
2. The STS service will start automatically. To make sure that it is running, execute the `list` command in the console and find two additional bundles: **Apache CXF STS Core** and **Talend :: ESB :: STS :: CONFIG** which enable the STS functionality.

Note: It is normal that the status of this (fragment) bundle is only Resolved and not Active, as the other one.

Sample keys distributed with the RentACar demo should not be used in production. For more information on how to replace the keys used, see the chapter "Using STS with the Talend Runtime" from the Talend ESB Infrastructure Services Configuration Guide.

For additional information about the usage of STS, please read the Talend ESB STS User Guide and the chapter "Using STS with the Talend Runtime" from the Talend ESB Infrastructure Services Configuration Guide.

Running STS server as Web application (Alternative)

The STS war file is located at `add-ons/sts/SecurityTokenService.war` of the distributive directory and ready for deployment on Tomcat.

For the STS war file deployment, please use standard deployment instructions for your J2EE container (Deployment guide for Tomcat 8.0: <http://tomcat.apache.org/tomcat-8.0-doc/deployer-howto.html>) and the chapter "Using STS with the Talend Runtime" from the Talend ESB Infrastructure Services Configuration Guide.

Note: Sample keys distributed with the RentACar demo should not be used in production. For more information on how to replace the keys used, see the chapter "Using STS with the Talend Runtime" from the Talend ESB Infrastructure Services Configuration Guide.

Enabling Syncope Login Module

Talend Identity and Access Management, based on Apache Syncope, is a system that allows you to manage the user access to all the Talend web applications. For Talend ESB, it is used to manage users and groups within the ESB Runtime environment. So Talend Identity and Access Management is mandatory to use authentication and authorization with Talend ESB. For more information about how to install and configure Talend Identity and Access Management, see [Installing and configuring Talend Identity and Access Management](#).

Once Talend Identity and Access Management is installed, you can enable the Syncope Login Module in Talend ESB by deploying the Syncope blueprint XML file to the `Talend-ESB-VA.B.C/container/deploy` folder.

A template of the Blueprint descriptor is shown below:

```
<?xml version="1.0" encoding="UTF-8"?>
<blueprint xmlns="http://www.osgi.org/xmlns/blueprint/v1.0.0"
  xmlns:jaas="http://karaf.apache.org/xmlns/jaas/v1.1.0"
  xmlns:ext="http://aries.apache.org/blueprint/xmlns/blueprint-ext/v1.0.0">

  <jaas:config name="karaf" rank="2">
    <jaas:module className="org.apache.karaf.jaas.modules.syncope.Syncope
LoginModule"
      flags="required">
      address=http://localhost:9080/syncope/rest
      admin.user=admin
      admin.password=password
      version=2
    </jaas:module>
  </jaas:config>

  <service interface="org.apache.karaf.jaas.modules.BackingEngineFactory">
    <bean class="org.apache.karaf.jaas.modules.syncope.SyncopeBackingEngineFacto
ry"/>
  </service>
</blueprint>
```

The `address` property needs to be configured to reference your Syncope server. For Syncope 2.x, it must be set to `..syncope/rest` instead of `..syncope/cxf` for Syncope 1.x.

The credentials to access Syncope should also be configured.

The `version` property is used to select Syncope backend version, 1 or 2.

To check if Syncope Login Module is installed successfully:

Procedure

1. Get the list of available Jaas realms.

```
karaf@trun> jaas:realm-list
Index | Realm Name | Login Module Class Name
-----+-----+-----
1     | karaf     | org.apache.karaf.jaas.modules.syncope.SyncopeLoginModule
```

2. Select Jaas Realm using Jaas realm index from previous step.

```
karaf@trun> jaas:realm-manage --index 1
```

3. Check Syncope users list.

```
karaf@trun(> jaas:user-list
```

Upgrading your Talend products

Backing up the environment

Before backing up and migrating the data of each Talend solution, you need to make sure your environment is correctly backed up.

The environment backup process includes the following mandatory steps:


Note: You need to complete these steps in the following order.

1. Saving the local projects

For details, refer to [Backing up the environment](#) in the Talend Migration Guide.

Saving the local projects

Procedure

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

Upgrading the Talend projects in Talend Studio

Importing your local projects

Procedure

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

Results

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

For more information on how to export local projects to an archive file, see [Saving the local projects](#) on page 35.

Appendices

Cheatsheet: start and stop commands for Talend server modules

The following table sums up the commands or executables you can use to start and stop Talend server modules.

Talend server module	Start command/executable	Stop command/executable
Apache Tomcat service for Talend Administration Center	<code>net start <TomcatService Name></code>	<code>net stop <TomcatService Name></code>
JBoss service for Talend Administration Center	<code>net start "JBoss"</code>	<code>net stop "JBoss"</code>
Talend Runtime	<code><TalendRuntimePath>\bin\trun.bat</code>	Ctrl+C
Talend Artifact Repository	<code><ArtifactRepositoryPath>\bin\nexus.exe /run by default</code> or <code>nexus.bat console for Nexus 2</code>	Ctrl+C
Talend JobServer	<code><JobServerPath>\start_rs.bat</code>	<code><JobServerPath>\stop_rs.bat</code>
Talend Log Server	<code><LogServerPath>\start_logserver.bat</code>	<code><LogServerPath>\stop_logserver.bat</code>
Talend ESB	<code>tesb:start-all</code>	<code>tesb:stop-all</code>
Event Logging	<code>tesb:start-el-default</code>	<code>tesb:stop-el-default</code>
Talend Runtime Container	<code><TalendESBPath>\container\bin\trun.bat</code>	Ctrl+C
Apache ActiveMQ	In Talend Runtime Container: <code>feature:install activemq</code>	Ctrl+C
Service Locator	<code>tesb:start-locator</code>	<code>tesb:stop-locator</code>
Service Activity Monitoring	<code>tesb:start-sam</code>	<code>tesb:stop-sam</code>
Security Token Service	<code>tesb:start-sts</code>	<code>tesb:stop-sts</code>

1: The command/executable to use depends whether you installed your Talend product using manual installation or using automatic installation.

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.

Supported systems, databases and business applications by Talend components

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

Systems/Databases	Versions	OS
Access ¹	2003	Windows
	2007	Windows
Amazon Aurora	MySQL edition v5 (5.6 and 5.7)	
Amazon RDS for Microsoft SQL Server		
Amazon Redshift	1.x	
AS/400	V7R1 to V7R3	
Bonita	6.5.2	
	7.2.4	
	7.9.0	
Cassandra	3.0 to 3.4	Windows + Linux
CouchBase	5.x	Windows
	6.0	Windows
CouchDB	1.0.2	Windows
DB2	10.5	
DB Generic	ODBC	Windows
DynamoDB		
Elasticsearch	5.6.x	
	6.4.x	
EXASolution	6.0 and earlier	Windows
Excel		
eXist-db	1.4.0	

Systems/Databases	Versions	OS
FireBird	2.1 to 3.0	Windows + Linux
FTP		
Greenplum	4.3.x	Windows (client only) + Linux
	5.x	Windows (client only) + Linux
HSQLDb	1.8.0 to 2.4	
IBM DB2 and IBM DB2 Z/OS	10.5	Windows + Linux
	11.1	Windows + Linux
Informix	11.50	Windows + Linux
Ingres	10.2	Windows + Linux
	11	Windows + Linux
Interbase		
JavaDB	6	Windows + Linux
JDBC		
JSON		
Kafka ²	0.8.2.0	Windows + Linux
	0.9.0.1	Windows + Linux
	0.10.0.1	Windows + Linux
	1.1.0	Windows + Linux
	2.2.1	Windows + Linux
LDAP	No version limitation	Windows + Linux
MapRDB		
MarkLogic	V9	
MaxDB	7.6	
Microsoft Azure Blob Storage		
Microsoft Azure SQL Data Warehouse		
Microsoft AX	Dynamics AX 4.0	
	Dynamics AX 2012	

Systems/Databases	Versions	OS
Microsoft CRM	2011	
	2015	
	2016	
Microsoft CRM Online	2011	
	2016	
	2018	
Microsoft SQL Server ³	2014 to latest version	Windows + Linux
MongoDB	3.6.x	Windows + Linux
	4.0.x	Windows + Linux
	4.2.x	
MySQL	MySQL 5.x	Windows + Linux
	MySQL 8.x	Windows + Linux
	MariaDB	Windows + Linux
	Amazon RDS	Windows + Linux
	Google Cloud SQL	Windows + Linux
MOM		
Neo4j	1.x.x	Linux
	2.x.x / 2.2.x / 2.3	Linux
	3.2.x	Linux
	3.5.x	Linux
Netezza	7.0.x	Windows + Linux
	7.1.x	Windows + Linux
	7.2.x	Windows + Linux
NetSuite	2018	Windows + Linux
OleDb	2000	
	2003	
	2005	
	2007	

Systems/Databases	Versions	OS
	2010	
Oracle	Oracle 12c Release 1	Windows + Linux
	Oracle 12c Release 2	Windows + Linux
	Oracle 18c	Windows + Linux
	Oracle 19c	Windows + Linux
Palo	Open source version 5	
ParAccel	3.1	
	3.5	
PostgreSQL	v7.2 to v8.x	Windows + Linux
	v9.x / v10.x / v11.x	Windows + Linux
	Amazon RDS	Windows + Linux
	Google Cloud SQL	Windows + Linux
PostgresPlus	v7.2 to v8.x	Windows + Linux
	v9.x	Windows + Linux
Red Hat BRMS	6.1	Windows + Linux
REST Service		Windows + Linux
Salesforce	V46 and earlier	Windows + Linux
SAP	4.6	
SAP Business Suite (ERP)	Netweaver: From 7.3 to 7.5	Windows
	ERP6.0, From EhP6 to EhP8	Windows
SAP Business Warehouse (BW)	Netweaver: From 7.3 to 7.5	Windows
SAP HANA ⁴	No version limitations	Windows
SAS	9.1	Windows + Linux
	9.2	Windows + Linux
SOAP Service		
SQLite	3.6.7	Windows + Linux
SugarCRM	5.2	Windows + Linux
Sybase	12.5	Windows + Linux

Systems/Databases	Versions	OS
	12.7	Windows + Linux
	15.2	Windows + Linux
	15.5	Windows + Linux
	15.7	Windows + Linux
	16.0	Windows + Linux
SybaseIQ	12.5	Windows + Linux
	12.7	Windows + Linux
	15.2	Windows + Linux
	16.0	Windows + Linux
Teradata	12 to 16	Windows + Linux
VectorWise	2	Windows + Linux
Vertica	9.0.x to 9.3.1	Windows + Linux
VtigerCRM	Vtiger 5.0	
	Vtiger 5.1	

1 When working with Java 8, only the General collation mode is supported.

2 The Kerberos kinit option and the Kerberos keytab option are both supported. For information about the security options supported by the Kafka components, see [Talend Help Center](#).

3 Microsoft SQL Server support is provided through the Microsoft SQL JDBC driver. For more information, see the [Download Microsoft JDBC Driver for SQL Server](#) page.

4 Supported through SAP JDBC driver.

Messaging brokers supported by Talend messaging components

Supported messaging brokers / standards	Component
JMS standard 1.1	tJMSInput
	tJMSOutput
MicrosoftMQ 3.0	tMicrosoftMQInput
	tMicrosoftMQOutput
JBoss Messaging 1.4.4	tMomInput
	tMomOutput

Supported messaging brokers / standards	Component
WebSphere MQ 8.0	tMomInput
	tMomOutput
ActiveMQ 5.13.2	tMomInput
	tMomOutput

Supported Big Data platforms

In general, Talend certifies a specific release version for a given Big Data (Hadoop) Distribution vendor. These are typically what is recommended for use for that vendor. For incremental upgrades and service packs by a given vendor, Talend relies on the vendors' compatibility statements to ensure the proper running and execution of the Talend software. Where compatibility is stated, Talend also supports that version under our Support SLA. If an incompatibility should be verified by the Hadoop vendor, then Talend considers that a re-test and upgrade may be necessary.

If the Hadoop distribution you want to use is not yet supported and available in your Talend Studio, it may be available through an update. You can search for support information on the [Talend Help Center](#).

For details, search for adding support for the latest Hadoop distribution on Talend Help Center

For more information about the versions of all the supported third-party systems/databases, see [Supported systems, databases and business applications by Talend components](#) on page 37.

Supported Big Data platform distribution versions for Talend Jobs

Regular Hadoop distributions

To find the compatibility between regular Hadoop distributions and Talend-supported Big Data platforms, click on a Big Data platform below.

- [HBase](#)
- [HCatalog](#)
- [HDFS](#)
- [Hive](#)
- [Sqoop](#)
- [Spark](#)
- [Azure Data Lake Storage Gen2](#)
- [Kafka in Spark Streaming Jobs](#)

Old versions of the supported Big Data platforms are being retired by their vendors. Talend ceases to support a version once this version reaches its date of end of support set by its vendor.

Talend and its community provide you with the convenience to keep using a version its vendor ceases to support in Talend products. For this reason, this version could be still listed in the following tables and available in the products but Talend stops providing support for this version.

Talend supports the minor versions of the distribution versions listed in the following tables.

Table 6: Supported Hadoop distributions with HBase

Hadoop distribution	Version	Supports Kerberos Kinit and Keytab
HDP	v2.5.0	Yes
	v2.6.0	Yes
	v2.6.0.3-8	Yes
	v3.14.12-1	Yes
Cloudera	5.5 (YARN mode)	Yes
	5.6 (YARN mode)	Yes
	5.7 (YARN mode)	Yes
	5.8 (YARN mode)	Yes
	5.10 (YARN mode)	Yes
	5.12.1 (YARN mode)	Yes
	5.13.0	Yes
	6.1.1	Yes
MapR ^{1, 2}	5.0.0 (YARN mode)	Yes
	5.1.0 (YARN mode)	Yes
	5.2.0 (YARN mode)	Yes

1. For all MapR versions prior to v6.0, the MapR security ticket mechanism is supported by the Studio.

2. In MapR v6.0, HBase support has been removed in favor of MapR-DB. For more information, see https://maprdocs.mapr.com/home/ReleaseNotes/install_upgrade_notes.html.

Table 7: Supported Hadoop distributions with HCatalog

Hadoop distribution	Version	Supports Kerberos Kinit and Keytab
HDP	v2.5.0	Yes
	v2.6.0	Yes
	v2.6.0.3-8	Yes
	v3.14.12-1	Yes
Cloudera	5.5 (YARN mode)	Yes
	5.6 (YARN mode)	Yes
	5.7 (YARN mode)	Yes

Hadoop distribution	Version	Supports Kerberos Kinit and Keytab
	5.8 (YARN mode)	Yes
	5.10 (YARN mode)	Yes
	5.12.1 (YARN mode)	Yes
	5.13.0	Yes
	6.1.1	Yes
MapR ^{1, 2}	5.0.0 (YARN mode)	Yes
	5.1.0 (YARN mode)	Yes
	5.2.0 (YARN mode)	Yes
	6.0.0 (YARN mode)	Yes
	6.0.1 MEP 5.0 (YARN mode)	Yes
	6.1 / MEP 6.1	Yes

1. For all MapR versions prior to v6.0, the MapR security ticket mechanism is supported by the Studio.

2. In MapR v6.0, HBase support has been removed in favor of MapR-DB. For more information, see https://maprdocs.mapr.com/home/ReleaseNotes/install_upgrade_notes.html.

Table 8: Supported Hadoop distributions with HDFS

Hadoop distribution	Version	Supports Kerberos Kinit and Keytab
HDP	v2.5.0	Yes
	v2.6.0	Yes
	v2.6.0.3-8	Yes
	v3.14.12-1	Yes
Cloudera	5.5 (YARN mode)	Yes
	5.6 (YARN mode)	Yes
	5.7 (YARN mode)	Yes
	5.8 (YARN mode)	Yes
	5.10 (YARN mode)	Yes
	5.12.1 (YARN mode)	Yes
	5.13.0	Yes
	6.1.1	Yes

Hadoop distribution	Version	Supports Kerberos Kinit and Keytab
MapR ^{1,2}	5.0.0 (YARN mode)	Yes
	5.1.0 (YARN mode)	Yes
	5.2.0 (YARN mode)	Yes
	6.0.0 (YARN mode)	Yes
	6.0.1 MEP 5.0 (YARN mode)	Yes
	6.1 / MEP 6.1	Yes

1. For all MapR versions prior to v6.0, the MapR security ticket mechanism is supported by the Studio.

2. In MapR v6.0, HBase support has been removed in favor of MapR-DB. For more information, see https://maprdocs.mapr.com/home/ReleaseNotes/install_upgrade_notes.html.

Table 9: Supported Hadoop distributions with Hive

Hadoop distribution	Version	Supports Kerberos Kinit and Keytab
HDP	v2.5.0	Yes
	v2.6.0	Yes
	v2.6.0.3-8	Yes
	v3.14.12-1	Yes
Cloudera	5.5 (YARN mode)	Yes
	5.6 (YARN mode)	Yes
	5.7 (YARN mode)	Yes
	5.8 (YARN mode)	Yes
	5.10 (YARN mode)	Yes
	5.12.1 (YARN mode)	Yes
	5.13.0	Yes
	6.1.1	Yes
MapR ^{1,2}	5.0.0 (YARN mode)	Yes
	5.1.0 (YARN mode)	Yes
	5.2.0 (YARN mode)	Yes
	6.0.0 (YARN mode)	Yes
	6.0.1 MEP 5.0 (YARN mode)	Yes

Hadoop distribution	Version	Supports Kerberos Kinit and Keytab
	6.1 / MEP 6.1	Yes

Note: The Profiling perspective does not support the Embedded connection mode on Hive distributions. This mode is available mainly for test purposes done by Hadoop developers. The studio may not be able to run correctly with the embedded mode.

1. For all MapR versions prior to v6.0, the MapR security ticket mechanism is supported by the Studio.
2. In MapR v6.0, HBase support has been removed in favor of MapR-DB. For more information, see https://maprdocs.mapr.com/home/ReleaseNotes/install_upgrade_notes.html.

Table 10: Supported Hadoop distributions with Sqoop

Hadoop distribution	Version	Supports Kerberos Kinit and Keytab
HDP	v2.5.0	Yes
	v2.6.0	Yes
	v2.6.0.3-8	Yes
	v3.1.4.12-1	Yes
Cloudera	5.5 (YARN mode)	Yes
	5.6 (YARN mode)	Yes
	5.7 (YARN mode)	Yes
	5.8 (YARN mode)	Yes
	5.10 (YARN mode)	Yes
	5.12.1 (YARN mode)	Yes
	5.13.0	Yes
	6.1.1	Yes
MapR ^{1,2}	5.0.0 (YARN mode)	Yes
	5.1.0 (YARN mode)	Yes
	5.2.0 (YARN mode)	Yes
	6.0.0 (YARN mode)	Yes
	6.0.1 MEP 5.0 (YARN mode)	Yes
	6.1 / MEP 6.1	Yes

1. For all MapR versions prior to v6.0, the MapR security ticket mechanism is supported by the Studio.

2. In MapR v6.0, HBase support has been removed in favor of MapR-DB. For more information, see https://maprdocs.mapr.com/home/ReleaseNotes/install_upgrade_notes.html.

Table 11: Supported Hadoop distributions with Spark

Hadoop distribution	Version	Works with Spark Stand-alone	Works with Spark YARN	Supports Kerberos Kinit and Keytab
HDP	v2.5.0		v1.6 (Deprecated)	Yes (YARN only)
	v2.6.0		v1.6 (Deprecated) / v2.1	Yes (YARN only)
	v2.6.0.3-8		v1.6 (Deprecated) / v2.1	Yes (YARN only)
	v3.1.4.12-1		v2.3	Yes (YARN only)
Cloudera	5.5 (YARN mode)	v1.5 (Deprecated)	v1.5 (Deprecated)	Yes (YARN only)
	5.6 (YARN mode)	v1.5 (Deprecated)	v1.5 (Deprecated)	Yes (YARN only)
	5.7 (YARN mode)	v1.6 (Deprecated)	v1.6 (Deprecated)	Yes (YARN only)
	5.8 (YARN mode)	v1.6 (Deprecated)	v1.6 (Deprecated) / v2.1	Yes (YARN only)
	5.10 (YARN mode)	v1.6 (Deprecated) / 2.1	v1.6 (Deprecated) / v2.1	Yes (YARN only)
	5.12.1 (YARN mode)	v2.2	v2.2	Yes (YARN only)
	5.13.0	v2.2	v2.2	Yes (YARN only)
	6.1.1	v2.4	v2.4	Yes (YARN only)
MapR ^{1,2}	5.0.0 (YARN mode)	v1.3 (Deprecated)	v1.3 (Deprecated)	Yes (YARN only)
	5.1.0 (YARN mode)	v1.5 (Deprecated)	v1.5 (Deprecated)	Yes (YARN only)
	5.2.0 (YARN mode)	v1.6 (Deprecated)	v1.6 (Deprecated)	Yes (YARN only)
	6.0.0 (YARN mode)	v2.1	v2.1	Yes (YARN only)
	6.0.1 MEP 5.0 (YARN mode)	v2.2	v2.2	Yes (YARN only)
	6.1 / MEP 6.1	v2.3	v2.3	Yes (YARN only)

1. For all MapR versions prior to v6.0, the MapR security ticket mechanism is supported by the Studio.

2. In MapR v6.0, HBase support has been removed in favor of MapR-DB. For more information, see https://maprdocs.mapr.com/home/ReleaseNotes/install_upgrade_notes.html.

Table 12: Supported Hadoop distributions with Azure Data Lake Storage Gen2 (ADLS Gen2)

Hadoop distribution	Version	Works with Spark Stand-alone	Works with Spark YARN	Supports Kerberos Kinit and Keytab
HDP	v3.1.4.12-1		v2.3	Yes (YARN only)
Cloudera	6.1.1	v2.4	v2.4	Yes (YARN only)

If you need information about the Big Data Cloud platforms supported by Talend with ADLS Gen2, see the following section called *Supported Cloud Big Data platform distribution versions for Talend Jobs* of your installation guide.

Table 13: Supported Hadoop distributions with Kafka in Spark Streaming Jobs

Hadoop distribution	Version	Works with Spark Stand-alone	Works with Spark YARN	Supports Kerberos Kinit and Keytab	Kafka versions
HDP	v2.5.0		v1.6 (Deprecated)	Yes (YARN only)	v0.10
	v2.6.0		v1.6 (Deprecated) / v2.1	Yes (YARN only)	v0.10
	v2.6.0.3-8		v1.6 (Deprecated) / v2.1	Yes (YARN only)	v1.x
	v3.1.4.12-1		v2.3	Yes (YARN only)	v2.x
Cloudera	5.5 (YARN mode)	v1.5 (Deprecated)	v1.5 (Deprecated)	Yes (YARN only)	v0.10
	5.6 (YARN mode)	v1.5 (Deprecated)	v1.5 (Deprecated)	Yes (YARN only)	v0.10
	5.7 (YARN mode)	v1.6 (Deprecated)	v1.6 (Deprecated)	Yes (YARN only)	v0.10
	5.8 (YARN mode)	v1.6 (Deprecated)	v1.6 (Deprecated) / v2.1	Yes (YARN only)	v0.10
	5.10 (YARN mode)	v1.6 (Deprecated) / 2.1	v1.6 (Deprecated) / v2.1	Yes (YARN only)	v0.10
	5.12.1 (YARN mode)	v2.2	v2.2	Yes (YARN only)	v0.10
	5.13.0	v2.2	v2.2	Yes (YARN only)	v0.10
	6.1.1	v2.4	v2.4	Yes (YARN only)	v2.x
MapR ^{1,2}	5.0.0 (YARN mode)	v1.3 (Deprecated)	v1.3 (Deprecated)	Yes (YARN only)	v0.10
	5.1.0 (YARN mode)	v1.5 (Deprecated)	v1.5 (Deprecated)	Yes (YARN only)	v0.10

Hadoop distribution	Version	Works with Spark Stand-alone	Works with Spark YARN	Supports Kerberos Kinit and Keytab	Kafka versions
	5.2.0 (YARN mode)	v1.6 (Deprecated)	v1.6 (Deprecated)	Yes (YARN only)	v0.10
	6.0.0 (YARN mode)	v2.1	v2.1	Yes (YARN only)	v0.10
	6.0.1 MEP 5.0 (YARN mode)	v2.2	v2.2	Yes (YARN only)	v0.10
	6.1 / MEP 6.1	v2.3	v2.3	Yes (YARN only)	v1.x

Supported Cloud Big Data platform distribution versions for Talend Jobs

Cloud Hadoop distributions

Talend supports the following cloud platforms for Big Data. Click your cloud platform to see the Big data support information.

- [Amazon EMR](#)
- [Microsoft HDInsight](#)
- [Google Dataproc](#)
- [Databricks on AWS](#)
- [Databricks on Azure](#)
- [Cloudera on AWS](#)
- [Cloudera on Azure](#)
- [Quoble on AWS](#)

Old versions of the supported Big Data platforms are being retired by their vendors. Talend ceases to support a version once this version reaches its date of end of support set by its vendor.

Talend and its community provide you with the convenience to keep using a version its vendor ceases to support in Talend products. For this reason, this version could be still listed in the following tables and available in the products but Talend stops providing support for this version.

Talend supports the minor versions of the platform versions listed in the following tables.

Table 14: Amazon EMR

Amazon EMR version	Supported frameworks	Supported Hadoop elements in Spark batch	Supported Hadoop elements in Spark streaming	Supported Hadoop elements in Standard
v4.5.0 (Apache 2.7.2)	Standard Spark v1.6 (Deprecated)	HBase HDFS HCatalog Hive	HBase HDFS HCatalog Hive	HBase HDFS HCatalog Hive Sqoop

Amazon EMR version	Supported frameworks	Supported Hadoop elements in Spark batch	Supported Hadoop elements in Spark streaming	Supported Hadoop elements in Standard
v4.6.0 (Apache 2.7.2)	Standard Spark v1.6 (Deprecated)	HBase HDFS HCatalog Hive	HBase HDFS HCatalog Hive	HBase HDFS HCatalog Hive Sqoop
v5.0.0 (Apache 2.7.2)	Standard Spark v2.0	HBase HDFS HCatalog Hive	HBase HDFS HCatalog Hive	HBase HDFS HCatalog Hive Sqoop
v5.5.0 (Apache 2.7.2)	Standard Spark v2.1	HBase HDFS HCatalog Hive	HBase HDFS HCatalog Hive	HBase HDFS HCatalog Hive Sqoop
v5.8.0 (Apache 2.7.2)	Standard Spark v2.2	HBase HDFS HCatalog Hive	HBase HDFS HCatalog Hive	HBase HDFS HCatalog Hive Sqoop
v5.15.0 (Hadoop 2.8.3) (Apache 2.7.2)	Standard Spark v2.3	HBase HDFS HCatalog Hive	HBase HDFS HCatalog Hive	HBase HDFS HCatalog Hive Sqoop

The supported Amazon EMR versions for the tAmazonEMRManage component are 4.5.0, 4.6.0, 4.9.2, 5.11.0 and 5.15.0.

Table 15: Google Dataproc for Big Data

Google Dataproc version	Supported frameworks	Supported elements in Spark batch	Supported elements in Spark streaming	Supported elements in Standard
v1.1	Standard Spark v2.0	Hive BigQuery Google Storage Avro Delimited Parquet Positional XML JSON	Hive BigQuery Google Storage Avro Delimited Parquet Positional XML JSON Google PubSub	Hive
v1.4	Standard Spark v2.4	Hive BigQuery Google Storage Avro Delimited Parquet Positional XML JSON	Hive BigQuery Google Storage Avro Delimited Parquet Positional XML JSON Google PubSub	Hive

Table 16: Databricks on Azure for Big Data

Databricks on Azure version	Supported frameworks	Supported elements in Spark batch	Supported elements in Spark streaming	Supported elements in Standard
3.5 LTS	Standard Spark v2.2	Hive Azure Blob Storage ADLS Gen1	Hive Azure Blob Storage ADLS Gen1	DBFS
5.5 LTS	Standard Spark v2.4	Hive Azure Blob Storage ADLS Gen1 ADLS Gen2 Snowflake DeltaLake MongoDB TDM components as technical preview tDataprepRun	Hive Azure Blob Storage ADLS Gen1 ADLS Gen2 Snowflake DeltaLake MongoDB TDM components as technical preview tDataprepRun	DBFS

Table 17: Databricks on AWS for Big Data

Databricks on AWS version	Supported frameworks	Supported elements in Spark batch	Supported elements in Spark streaming	Supported elements in Standard
3.5 LTS	Standard Spark v2.2	Hive S3 DynamoDB	Hive S3 DynamoDB Kinesis	DBFS
5.5 LTS	Standard Spark v2.4	Hive S3 DynamoDB Snowflake MongoDB TDM components as technical preview tDataprepRun	Hive S3 DynamoDB Kinesis Snowflake MongoDB TDM components as technical preview tDataprepRun	DBFS

Table 18: Qubole on AWS for Big Data

Qubole version	Supported frameworks	Supported elements in Spark batch	Supported elements in Spark streaming	Supported elements in Standard
Qubole Spark 2	Standard Spark v2.2	Redshift S3 DynamoDB	Redshift S3 DynamoDB Kinesis	S3 Hive

Table 19: Cloudera Altus on Azure for Big Data

Cloudera version	Supported frameworks	Supported elements in Spark batch	Supported elements in Spark streaming	Supported elements in Standard
CDH5.11	Spark v2.1	ADLS Gen1 Azure Blob Storage HDFS	ADLS Gen1 Azure Blob Storage HDFS	

Table 20: Cloudera Altus on AWS for Big Data

Cloudera version	Supported frameworks	Supported elements in Spark batch	Supported elements in Spark streaming	Supported elements in Standard
CDH5.11	Spark v2.1	S3 Redshift DynamoDB	S3 Kinesis Redshift DynamoDB	

Table 21: Microsoft HD Insight for Big Data

Microsoft HD Insight version	Supported frameworks	Supported elements in Spark batch	Supported elements in Spark streaming	Supported elements in Standard
3.4	Spark v1.6 (deprecated)	Hive	Hive	
3.6	Spark v2.1	Hive	Hive	

Supported Cloudera Navigator versions for Talend Jobs

The support for Cloudera Navigator is available to the Spark Jobs you are creating in the Studio, which means you must be using a subscription-based Talend Big Data solution.

Cloudera Navigator uses a Cloudera [SDK library](#) to provide functionalities and must be compatible with the version of this SDK library. The version of your Cloudera Navigator is determined by the Cloudera Manager installed with your Cloudera distribution and the compatible SDK is automatically used based on the version of your Navigator.

However, not all the Cloudera Navigator versions have their compatible SDK versions. For more details about the Cloudera SDK versions and their compatible Navigator versions, see the Cloudera documentation about [Cloudera Navigator SDK Version Compatibility](#).

In the following documentation:

- supported: Talend went through a complete QA validation process.
- compatible: Talend did not go through a complete QA validation process but the feature should work as part of Cloudera backward compatibility on Cloudera V5.X branches.

Studio version	Cloudera Navigator version	Related Cloudera version	Support type
7.3	6.1.1	6.1.1	Supported
	2.4	5.5 to 5.8	Supported
	2.12.0	5.11 to 5.14	Supported
	2.5 to 2.7	5.5 to 5.8	Compatible
	2.9.3 to 2.9.x	5.11 to 5.14	Compatible
	2.10.3 to 2.10.x	5.11 to 5.14	Compatible
	2.11.2 to 2.11.x	5.11 to 5.14	Compatible
	2.12.1 to 2.12.x	5.11 to 5.14	Compatible

Supported databases for profiling data

The table below lists the databases supported from the Profiling perspective of Talend Studio. For a complete list about supported third-party systems, see [Supported systems, databases and business applications by Talend components](#) on page 37.

Database name	Database version
Amazon Aurora	Amazon RDS for Aurora
Amazon Redshift	Initial release of Amazon Redshift
AS/400	V7R1 to V7R3
	V6R1 to V7R2
Hive	See, Supported Hive distributions for profiling data on page 56.
IBM DB2 and IBM DB2 Z/OS ¹	11.1
	10.5
Impala (a sub-module of Cloudera)	CDH5.1 and above
	MapR 6.1.0 (YARN mode)
	MapR 6.0.1 (YARN mode)
	MapR 6.0.0 (YARN mode)
	MapR 5.2.0 (YARN mode)
	MapR 5.1.0 (YARN mode)
Informix	11.50
Ingres	10.2
Microsoft SQL Server	Amazon RDS for SQL Server
	Azure SQL Database
	2017
	2016
	2014
MySQL	Amazon RDS for MySQL
	Amazon RDS for MariaDB
	Azure Database for MySQL
	MySQL 8.0
	MySQL 5.1/5.5/5.6
	MariaDB
Netezza	7.2
	6

Database name	Database version
Oracle with SID	Amazon RDS for Oracle
	Oracle 19c
	Oracle 18c
	Oracle 12c Release 1
Oracle with service name	Amazon RDS for Oracle
	Oracle 19c
	Oracle 18c
	Oracle 12c Release 1
PostgreSQL	Amazon RDS for PostgreSQL
	Azure Database for PostgreSQL
	12.1
	10
	9.1+
	8.3
SQLite	3.6.7
Sybase (ASE and IQ)QLite	16.0
	15.7
	15.2
	12.7
	12.5
Teradata	16
	15
	14
	13
	12
Vertica	9.x

1 Binary large objects (BLOBs) are not supported.

Supported Hive distributions for profiling data

The table below shows the compatibility between big data distributions and the HiveServer.

Note: The Hive embedded mode is available for test purposes for Hadoop developers. When in embedded mode, the studio may not run correctly.

Big data distribution		HiveServer 1	HiveServer2
HortonWorks	HDP 1.0.0 (deprecated)	Embedded and Standalone	
	HDP 1.2	Embedded and Standalone	Embedded and Standalone
	HDP 1.3	Embedded and Standalone	Embedded and Standalone
	HDP 2.0	Embedded (Linux only) and Standalone	Embedded (Linux only) and Standalone
	HDP 2.1	Embedded (Linux only) and Standalone	Embedded (Linux only) and Standalone
	HDP 2.2	Embedded (Linux only) and Standalone	Embedded (Linux only) and Standalone
	HDP 2.3.2		Standalone
	HDP 2.4.0		Standalone
	HDP 2.5.0		Standalone
	HDP 2.6.0		Standalone
Cloudera ¹	CDH4	Embedded and Standalone	Embedded and Standalone
	CDH5	Embedded and Standalone	Embedded and Standalone
	CDH5.1 MR1		Standalone
	CDH5.4 YARN		Standalone
	CDH5.5 (and above) YARN		Standalone
MapR	MapR 1.2 (deprecated)	Standalone	
	MapR 2.0	Embedded and Standalone	
	MapR 2.1.2	Embedded and Standalone	
	MapR 3.0.1	Embedded and Standalone	Embedded and Standalone
	MapR 3.1.0	Embedded and Standalone	Embedded and Standalone
	MapR 4.0.1 YARN	Embedded and Standalone	Embedded and Standalone
	MapR 5.0 (and above) YARN		Standalone
Apache	Apache 1.0.0 (Hive 0.9.0)	Embedded and Standalone	

Big data distribution		HiveServer 1	HiveServer2
	Apache 0.20.23 (Hive 0.7.1)	Standalone	
Pivotal HD	Pivotal HD 1.0.1	Standalone	
	Pivotal HD 2.0 (deprecated)	Embedded (Linux only) and Standalone	Embedded (Linux only) and Standalone (Linux only)

1 Kerberos authentication is supported.