



---

# Talend Data Integration

TDI Cookbook





---

# Talend Data Integration

TDI Cookbook

**Overview of  
Talend Data  
Integration  
(TDI)**

**Pre-requisites  
to run  
TDI/Studio**

**Download &  
Install  
TDI/Studio**

**Getting  
Starting**

**Building your  
first job Demo  
*(Scenario)***

Overview of Talend Data Integration (TDI)

Pre-requisites to Run TDI/Studio

Download & Install TDI/Studio

Getting Started

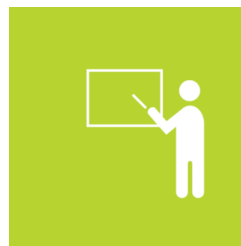
Building your first job Demo

## About this cookbook

### | What is the Talend TDI Cookbook?



Using the Talend Studio, this Cookbook gets you started with some of the basic skills in Data Integration on the Talend Data Integration Studio



The demo is built using customer information and a state information listing all 50 of the United States and demonstrates how Talend, joins data from two input files and creates an output file. In this Demo, Talend shows how easy it is to enrich the customer file with State codes.



Understand how Talend can be used to address all your Data Integration needs whether they are for Business Intelligence, Operations or Big Data.



## About Talend

### | What does Talend TDI offer?

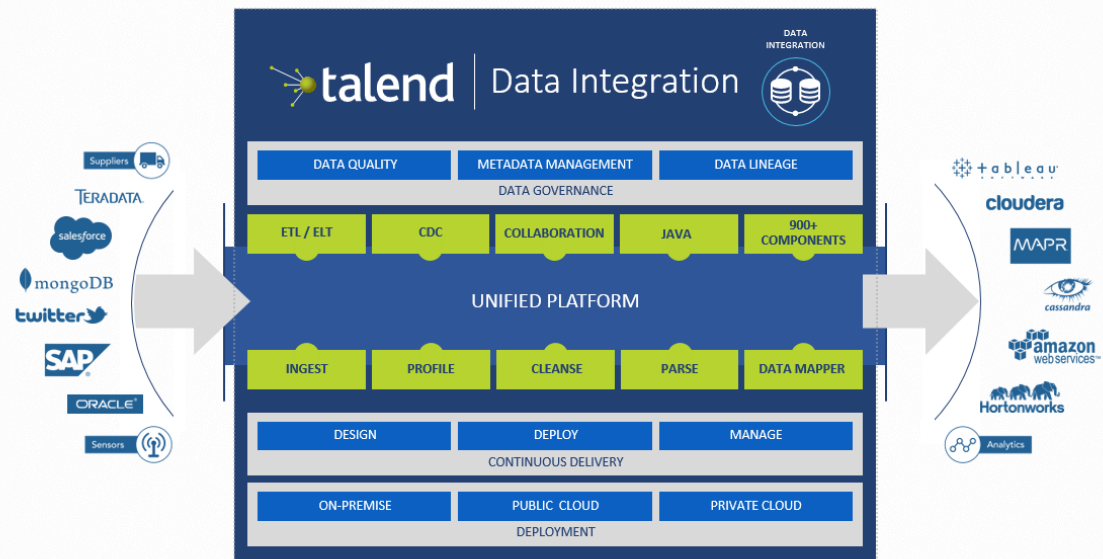
Talend provides thousands of must-have productivity features enabling you to quickly connect, transform and move all of your data.

- **Agile Integration** – Respond faster to business requests without writing code using over 900 out-of-the-box connectors, rich Eclipse-based graphical tools and an optimized-for-performance code generator.
- **Team Productivity** – Collaborate like never before using powerful versioning, impact analysis, testing and debugging, metadata management and shared repository tools.
- **Manage with Ease** – Be in the management cockpit using advanced monitoring and scheduling features with real-time data integration dashboards and centralized control for instant deployment across thousands of nodes.
- **Stay on the Cutting Edge** – Built on standards by the largest open source data integration developer community, you will not have to wait to be using the latest and coolest data integration features.
- **Develop and deploy 10 times faster** – The Eclipse-based Studio provides easy drag-and-drop, point-and-click job design with no need for hand-coding.
- **Lower cost of ownership** – With Talend’s subscription-based pricing model, you only pay for the number of developers using Talend Studio, saving you thousands of dollars over the competition.

## Talend Data Integration: Concepts & Principles

**Organizations' information systems tend to grow in complexity for several reasons:**

- The "layer stack-up trend" (a new solution is deployed although old systems are still maintained)
- Information systems need to be more and more connected to those of vendors, partners and customers.
- The multiplication of data storage formats (XML files, positional flat files, delimited flat files, multi-valued files and so on), protocols (FTP, HTTP, SOAP, SCP and so on) and database technologies.



Overview of Talend Data Integration (TDI)

Pre-requisites to Run TDI/Studio

Download & Install TDI/Studio

Getting Started

Building your first job Demo

## Talend Data Integration: Concepts & Principles

**How do we manage a proper integration of this data scattered throughout the company's information systems?**

**Various functions lie behind the data integration principle:**

- business intelligence or analytics integration (data warehousing)
- operational integration (data capture and migration, database synchronization, inter-application data exchange and so on).

**Talend Studio offers solutions to the problems companies face with system complexities by...**

- **addressing** both ETL for analytics and ETL for operational integration needs.
- **offering** industrialization features and extended monitoring capabilities

[Overview of Talend Data Integration \(TDI\)](#)[Pre-requisites to Run TDI/Studio](#)[Download & Install TDI/Studio](#)[Getting Started](#)[Building your first job Demo](#)

## What Pre-requisites are required to run TDI / Studio?

Below is a list of **system and software requirements** that are recommended prior to installing Talend Data Integration.

### Memory Usage and Data Usage

The recommended host machine should have:

Memory  
**3GB**

Disk  
Space  
**5GB**

### REQUIRED SOFTWARE

User will need a 64-bit version of supported Operating System (Windows, Mac, Linux).

For more information, refer to [Talend Help Center](#)

## How do I download a free Trial of Talend Data Integration?

### 30 DAY LICENSE

\* Business Email:

mbal@talend.com

\* First Name:

Mark

\* Last Name:

Balk

\* Company:

Talend

\* Industry:

Life Sciences

\* Phone:

\* Download Options: ⓘ

Studio Installer WIN

I have read and accepted the [terms](#) of use of this software

SUBMIT



Download Talend Data Integration at  
<https://info.talend.com/prodevaltedi.html>

### Follow the steps below to download and install TDI:

1. Complete the required fields on the form to start the download.
2. For download options, Select **the download for WIN = Windows or MAC.** (if using Linux pick the Archive/Zip option)
3.  Read and accept **Terms** of use.
4. Click on **“Submit”**.
5. The Download will start automatically. Follow the steps on the next page to save the a small Download Manager file that will help download the Studio

You will receive an email with a **license key attachment** and a second email with a list of support resources and videos.

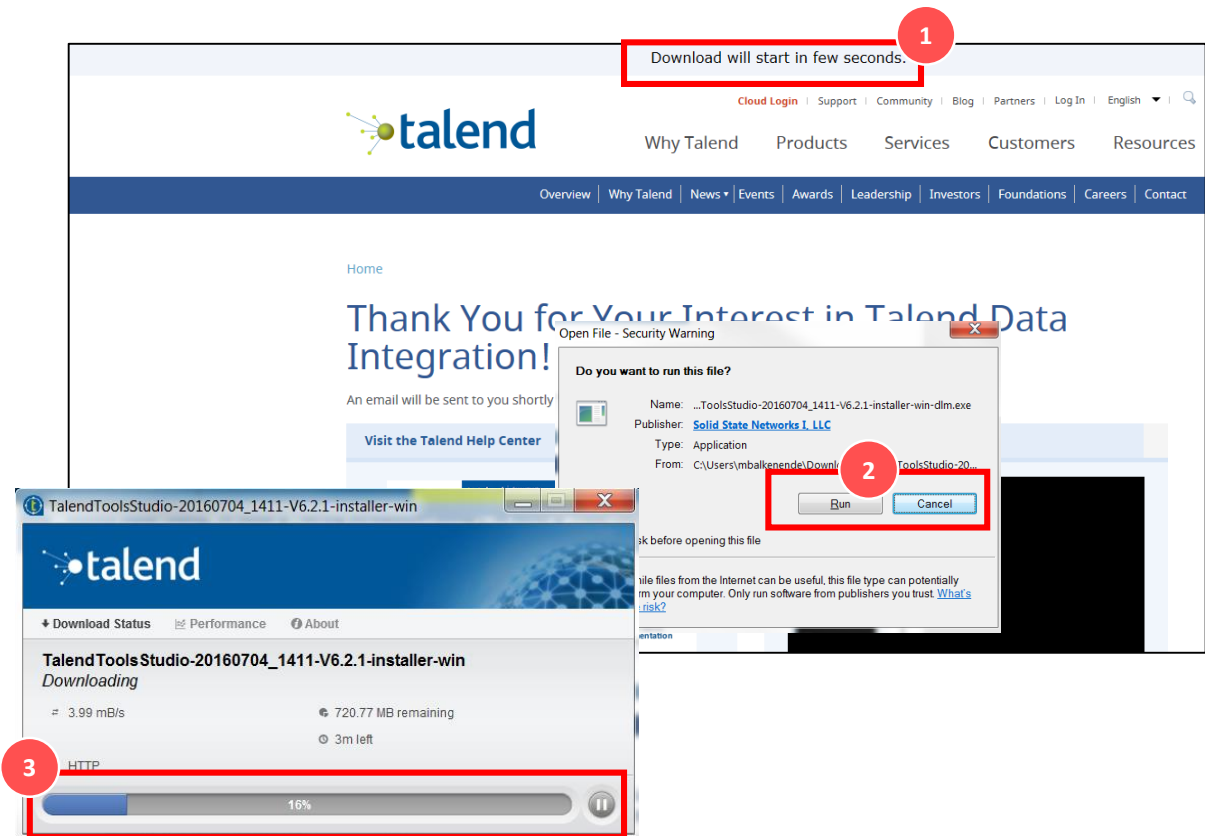
**NOTE:** Be sure to save the license key onto your local folder from the Talend email. If you do not receive your license key check spam mail or contact Talend support [customercare@talend.com](mailto:customercare@talend.com)



## Downloading Talend Data Integration (Talend Studio) - Cont.

Follow the steps below to download Talend Studio:

1. The top of the screen will display a message **“Download will start in a few seconds”**
2. Depending on the type of browser you are using you will be asked to save a file, for windows it is an .exe and for Mac it is a .dmg. This small file is a Download Manager to assist in downloading larger files. **Run the Download Manager file to start the download process.**
3. A message window will display while the file download is in progress.



Overview of Talend Data  
Integration (TDI)

Pre-requisites to Run  
TDI/Studio

Download & Install  
TDI/Studio

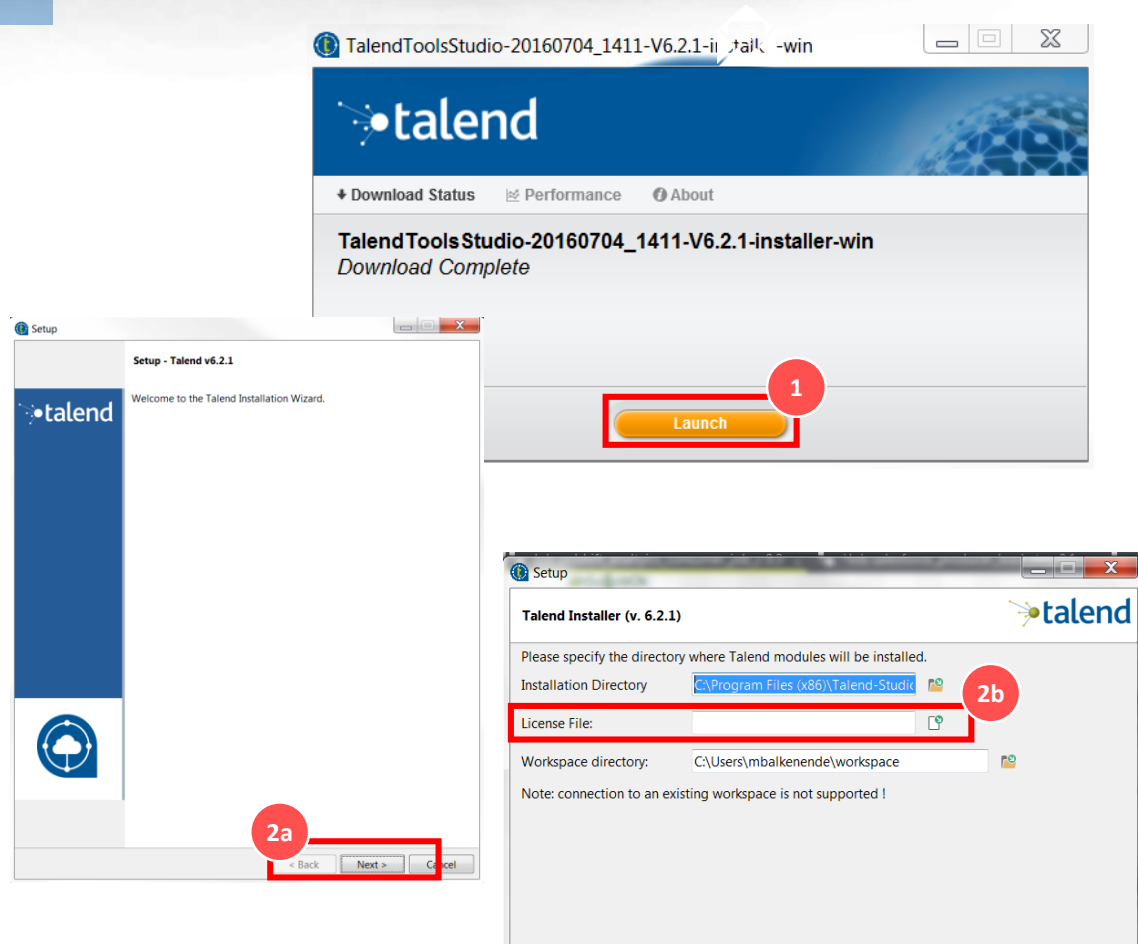
Getting Started

Building your first job  
Demo

## How do I Install Talend Studio?

To install Talend Studio,  
follow the steps below:

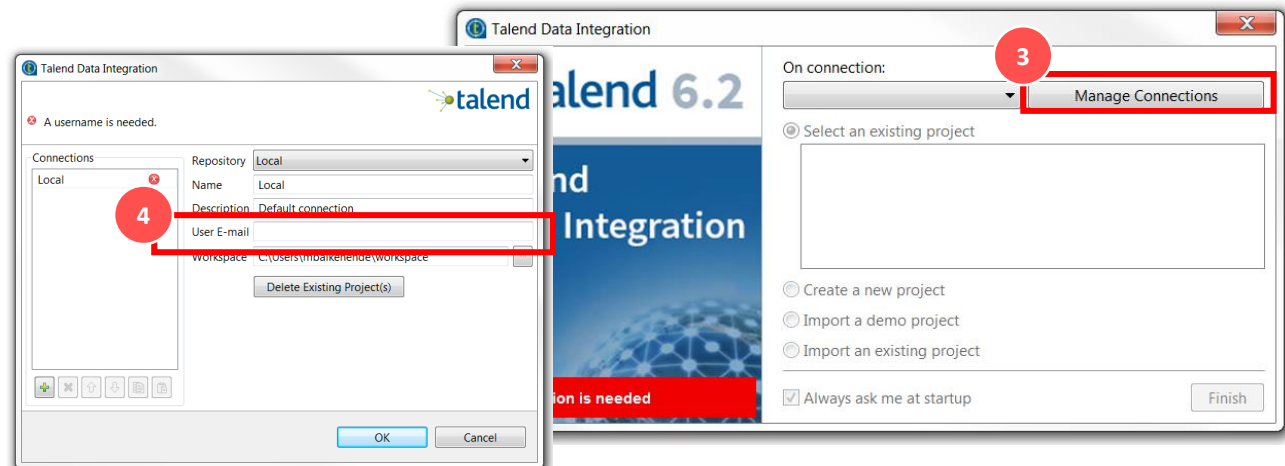
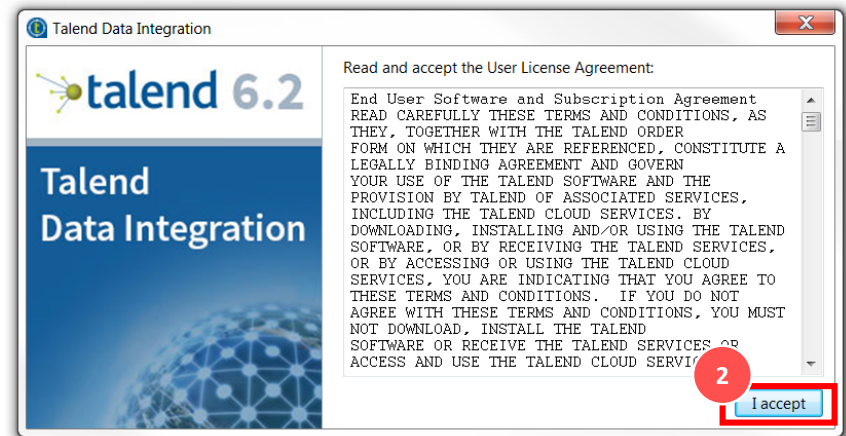
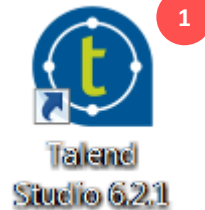
1. Once the Download Manager completes there will be a **“Launch”** button. Click on this but to start the installer.
2. Click on **Next** and follow the Install Wizards install steps. You will the **Trial License** during the install, you should have received it in an email from Talend Support, if you don't see it check your junk or spam folder first, if you still don't see it then contact Talend.  
[customer care@talend.com](mailto:customer care@talend.com)



## How do I Install Talend Studio? Cont.

To install Talend Studio, follow the steps below:

1. **Start the Studio** from Desktop. Or from Start menu on Windows
2. Read and accept the User license agreement. Click on **I accept**.
3. Next you need to create a connection click on **Manage Connection**
4. **Enter an Email** address in the User Email field and Click OK



## Welcome to Talend Studio?

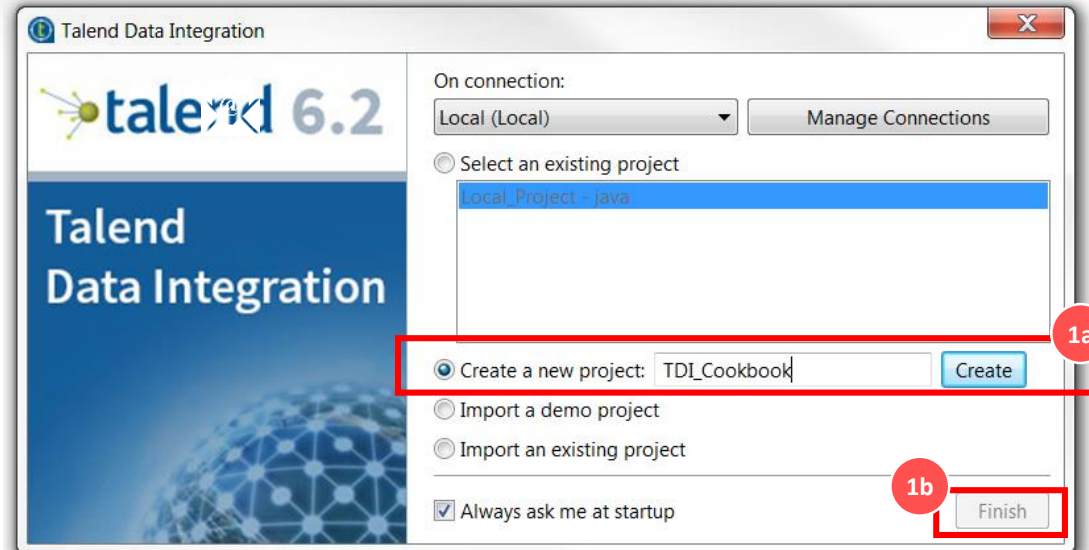
You are now ready to set up your project. In the Talend Studio Login window Select an option to define your project:

1. Select **Create a new Project**, name it “**TDI\_Cookbook**” specify a project name and click **Create**. (project name can not have spaces) then click Finish.

### Other options:

Select **Import a demo project** and click **Finish** to import a demo project that includes numerous samples of ready-to-use Jobs.

Select **Import an existing project** and click **Finish** to import an existing projects stored locally.



**Note:** The first time Studio is launched, you will be re-directed to a Talend Resources web page. It may be useful to bookmark this page for future reference while evaluating Talend’s product offerings.



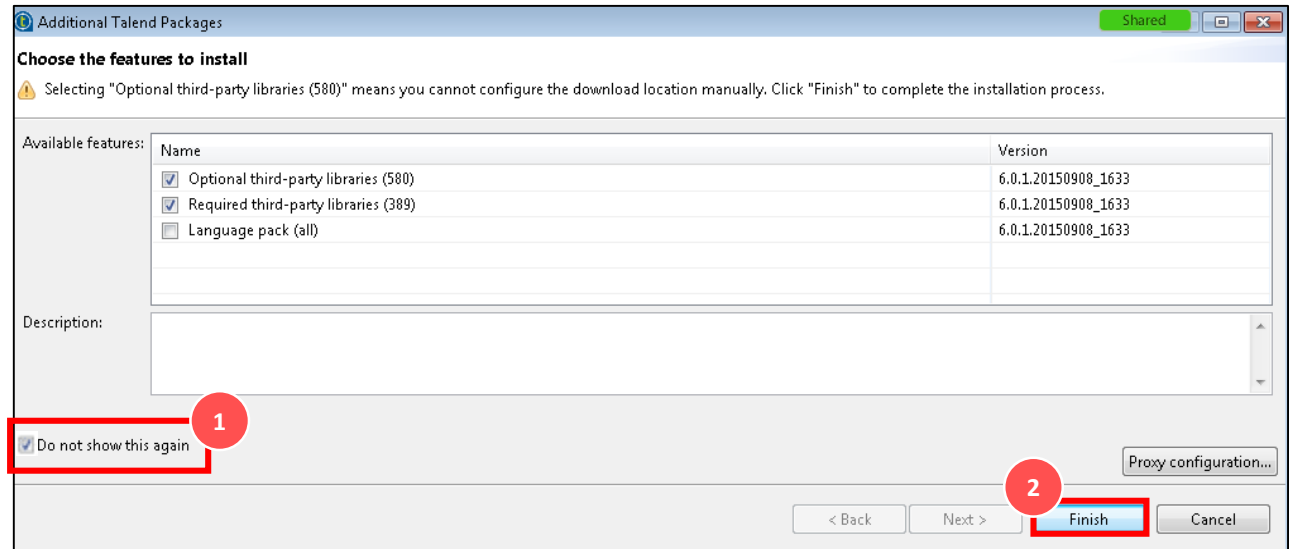
## Welcome to Talend Studio?

When you first log into Talend Studio you will receive messages about “Additional Talend Packages”, the packages recommended are selected by default.

### (optional)

Talend offers various languages, place a check in the box next to Language pack to install a language other than English.

1. Place a check  in the box next to "Do not show this again".
2. Click **Finish** to install all features.



## Welcome to Talend Studio?

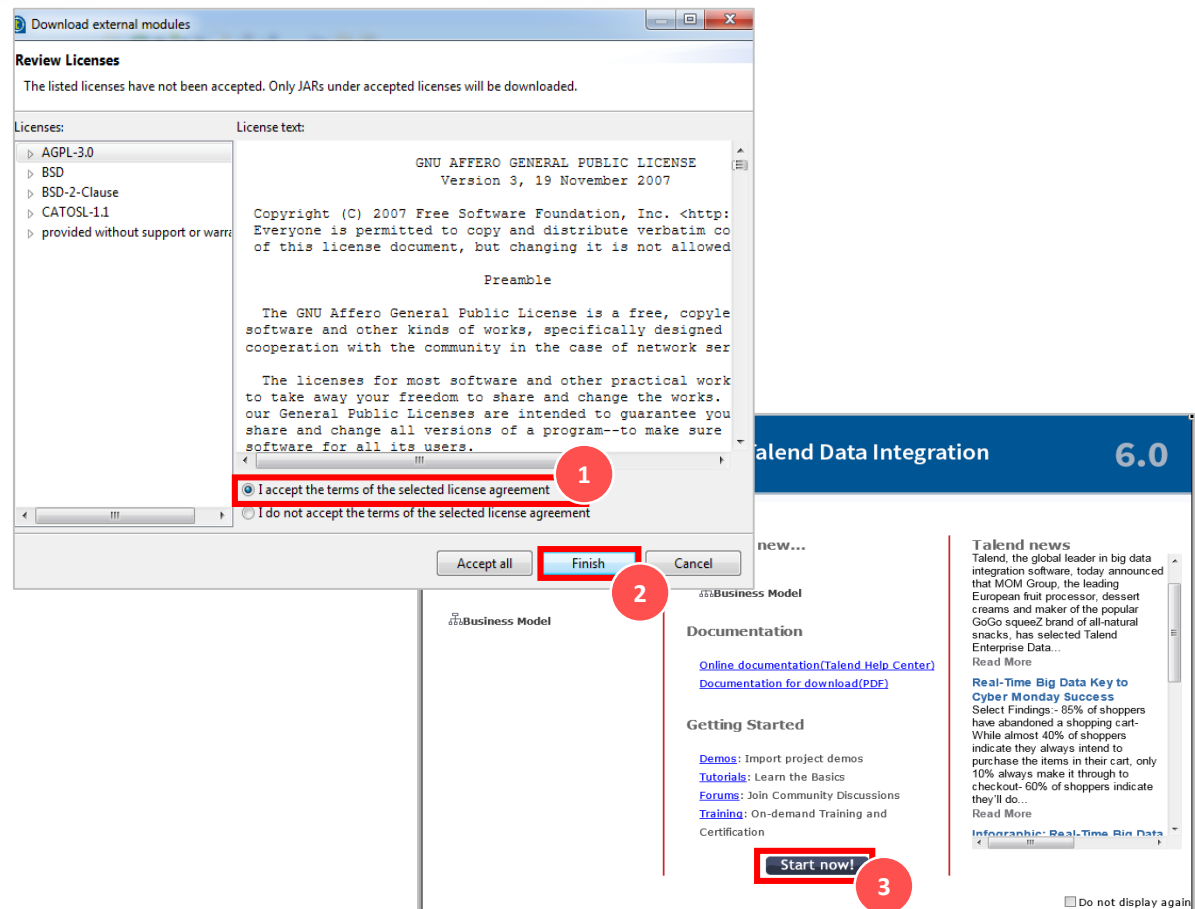
### Accept License agreement and Launch Studio:

1. Click on radio button **“I accept the terms of the selected license agreement”**
2. Next click **Accept All**.

**Note:** A second pop-up may come up to accept other licenses. Continue to **“Accept all”** license agreements for all required licenses that will need installation

The Talend Studio will open to a **Welcome Page**, which you can use to quickly launch new Jobs, analyses, or Business Models.

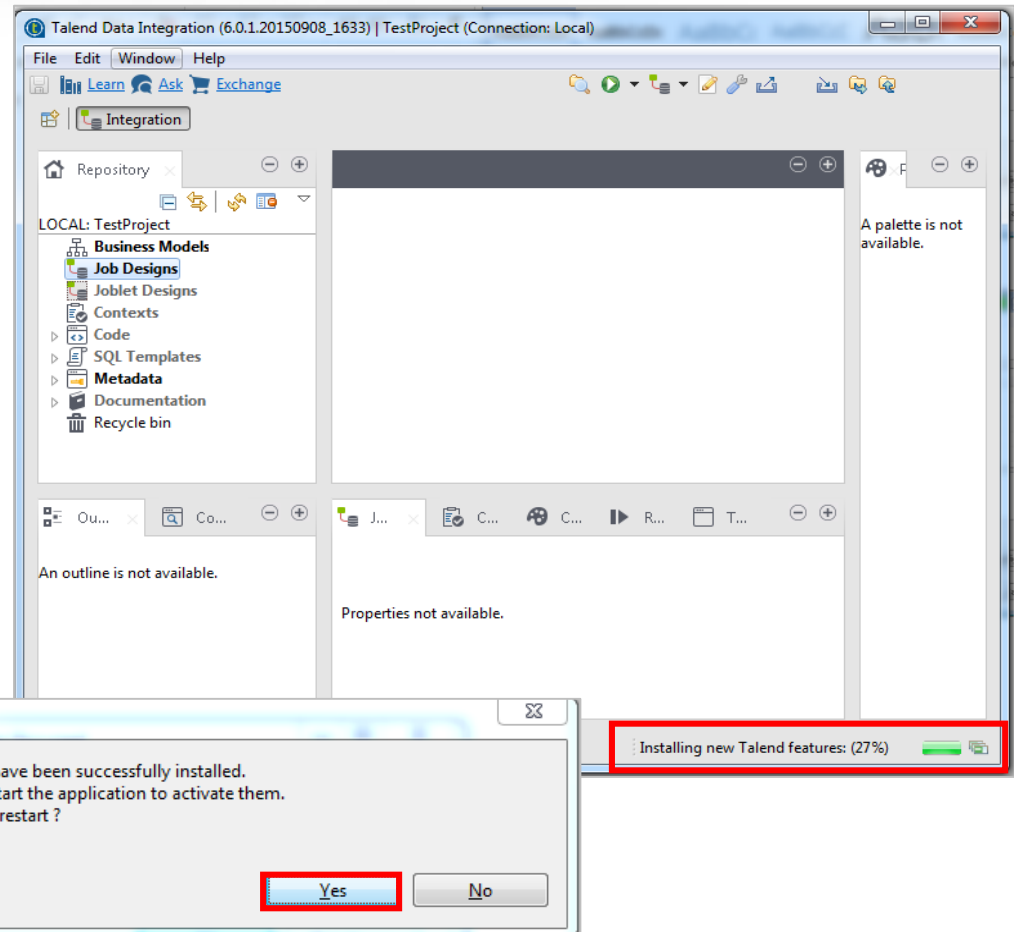
3. Click on **Start Now**.



## Welcome to Talend Studio?

### The main Talend Studio page will display:

- The bottom right corner of the page will show a progress bar indicating that Talend is installing new features.
- Wait for installation to complete prior to starting a job design.
- Once installation is complete you will receive a “successful installation” message. You will need to restart the Studio application by clicking, **Yes**.



Overview of Talend Data Integration (TDI)

Pre-requisites to Run TDI/Studio

Download & Install TDI/Studio

Getting Started

Building your first job Demo

## Welcome to Talend Studio?

| This is the main Talend Studio page:

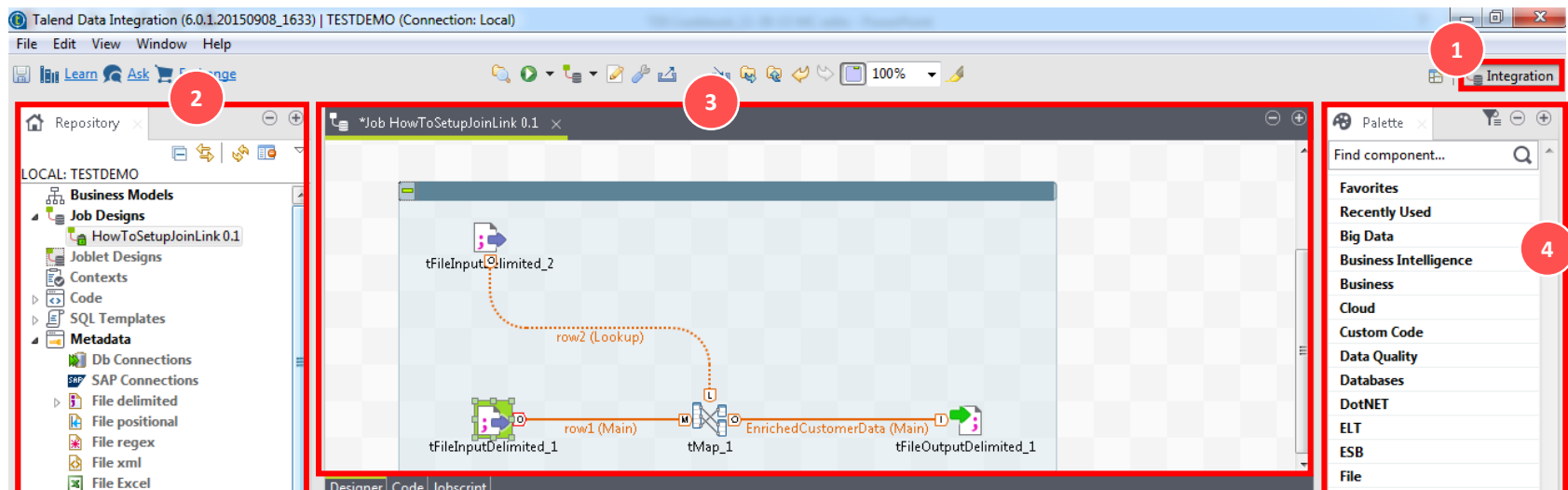
1. If the Studio does not look like the image displayed here make sure to click on the **Integration perspective** tab in the upper right hand corner.

Talend Studio consists of **three major parts**:

2. **Repository** - listing all the DI artifacts in Talend Studio.




3. **Job Designer** - where Jobs are designed and components are configured.

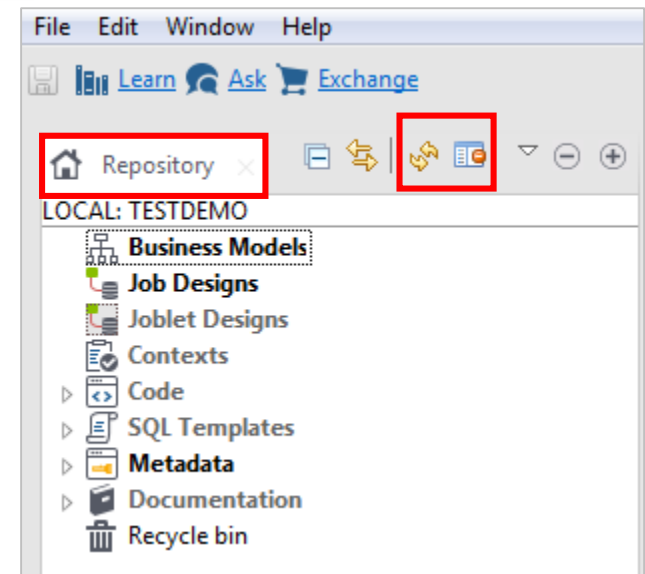
4. **Component Palette** – providing 800+ components and connectors.





## Talend Studio – Repository

- The **Repository** tree view gathers all the technical items that can be used either to describe business models or to design Jobs. It gives access to any item including **Business Models**, **Job Designs**, as well as reusable routines or documentation.
- The **Repository** centralizes and stores all necessary elements for any Job design and business modeling contained in a project.
- This display illustrates the elements stored in the **Repository**.
  -  The **Refresh** button allows you to update the tree view with the last changes made
  -  The **Activate filter** button allows you to open the filter settings view so as to configure the display of the Repository view.
  -  The **Switch branch** button is displayed when your Studio is connected to a remote project. It allows you to switch across project branches without the need of restarting your Studio. For further information, see the Getting Started Guide.
- The **Repository** tree view stores all your data (Business, Jobs, Joblets) and metadata (Routines, DB/File connections, any meaningful Documentation and so on).

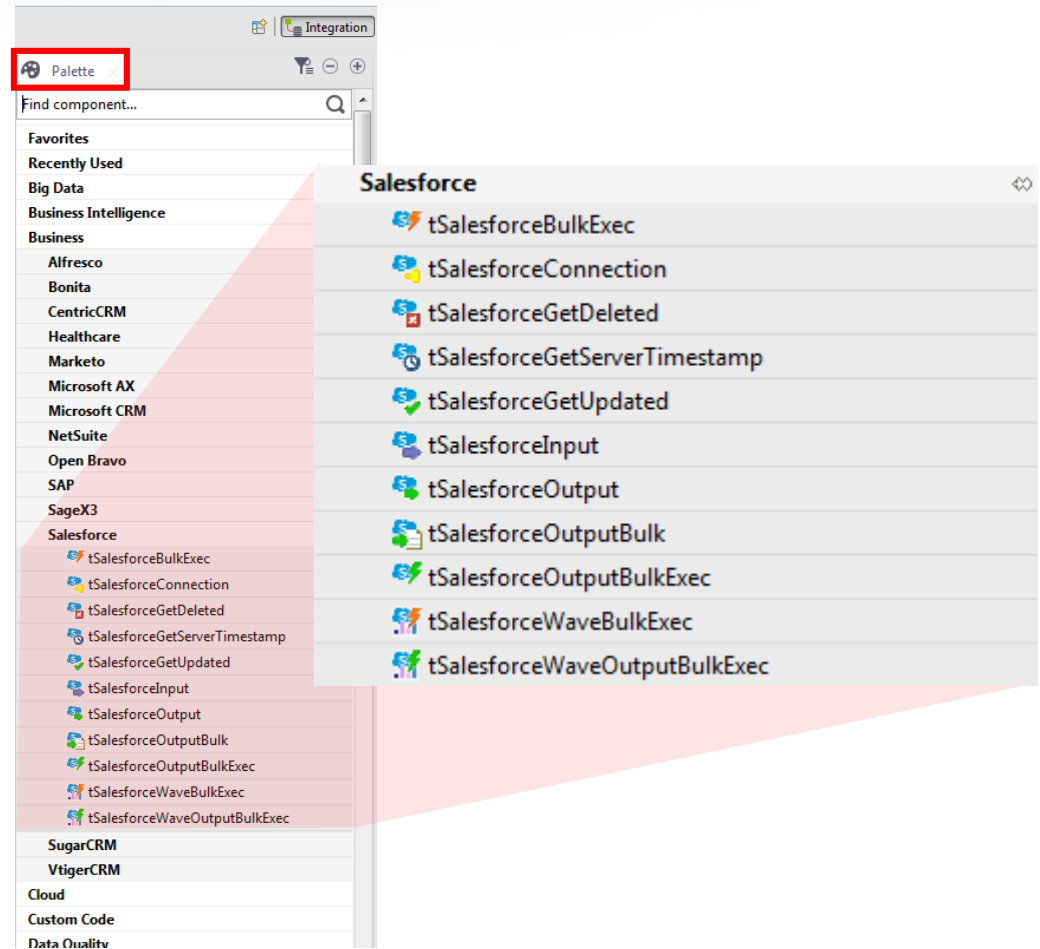


### Talend Studio – Component Palette

From the **Palette**, depending on whether you are designing a Job or modeling a Business Model, you can drop technical components or shapes, branches and notes to the design workspace for Job design or business modeling.

800+

Components



## Talend Studio – Design Window

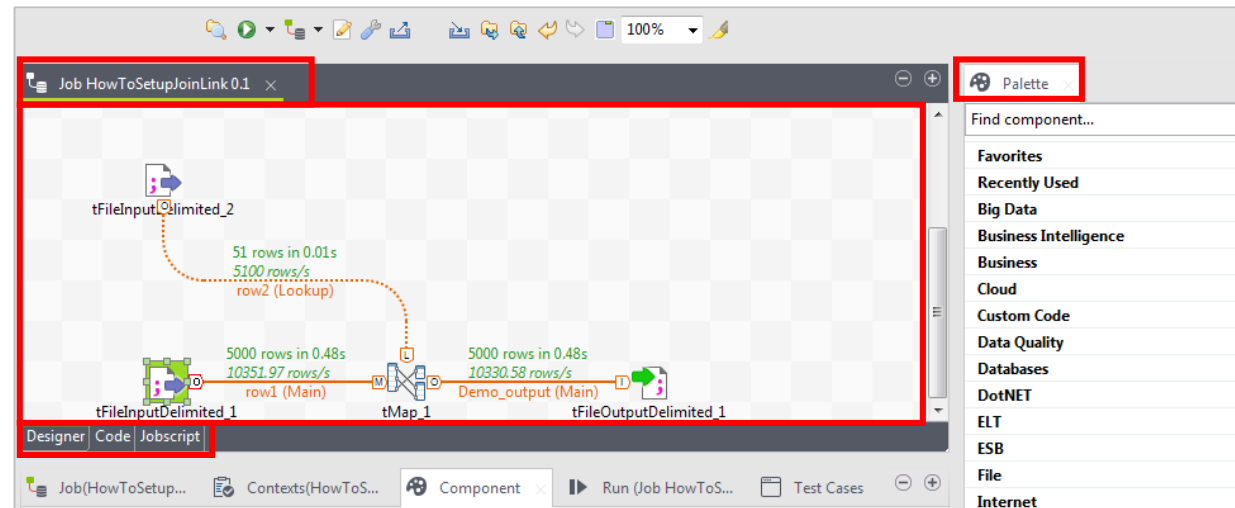
In the *Talend Studio's* design workspace, both Business Models and Job Designs can be laid out.

For both Business Models and Job Designs: active designs display in a easily accessible tab system above this workspace.

For Job Designs only. Under this workspace, you can access several other tabs:

- the **Designer tab**. It opens by default when creating a Job. It displays the Job in a graphical mode.
- the **Code tab**. It enables you to visualize the code and highlights the possible language errors.
- the **Jobscript** enables you to visualize and edit the Jobscript

A **Palette** is docked at the top of the design workspace to help you draw the model corresponding to your workflow needs.



## Talend Studio – Component Configuration

The configuration tabs are located in the lower half of the design workspace. Each tab opens a view that displays the properties of the selected element in the design workspace. These properties can be edited to change or set the parameters related to a particular component or to the Job as a whole.

The **Component** view gathers all information relative to the graphical elements selected in the design workspace.

The screenshot displays the Talend Studio interface. The top part shows a job design workspace with a flow: **tFileInputDelimited\_1** (5000 rows in 0.48s, 10351.97 rows/s, row1 (Main)) connects to **tMap\_1** (5000 rows in 0.48s, 10330.58 rows/s, Demo\_output (Main)), which then connects to **tFileOutputDelimited\_1**. A **tFileInputLimited\_2** component (51 rows in 0.01s, 5100 rows/s, row2 (Lookup)) is also shown. The bottom part of the screen shows the **Component** configuration view for **tFileInputDelimited\_1**. The **Component** tab is highlighted with a red box. The configuration includes:

- Basic settings:** Property Type: Repository; DELIM:Customers
- Advanced settings:** "When the input source is a stream or a zip file, footer and random shouldn't be bigger than 0."
- Dynamic settings:** File name/Stream: "C:/Talend/Cutomer example - file delimited/005/customer.csv"
- View:** Row Separator: "\n"; Field Separator: ";"
- Documentation:**  CSV options
- Validation Rules:** Header: 6; Footer: 0; Limit: [empty]; Schema: Repository; DELIM:Customers - metadata
- Skip empty rows;  Uncompress as zip file;  Die on error



## Talend Studio – Run Window

The **Run** view is used to execute your job after all components are configured.

The **Execution window** within the run view displays the progress of the execution. The log includes any error message as well as start and end messages. It also shows the Job output in case of a **tLogRow** component is used in the Job design.

The screenshot displays the Talend Studio interface during a job execution. The main workspace shows a job design with the following components and data flow:

- tFileInputDelimited\_2**: Connected to **tFileInputDelimited\_1**.
- tFileInputDelimited\_1**: Processing 5000 rows in 0.48s at 10351.97 rows/s. It is labeled as **row1 (Main)**.
- tMap\_1**: Processing 5000 rows in 0.48s at 10330.58 rows/s. It is labeled as **Demo\_output (Main)**.
- tFileOutputDelimited\_1**: Receiving data from **tMap\_1**.

The **Run** button in the top toolbar is highlighted with a red box. Below the workspace, the **Job HowToSetupJoinLink** execution window is also highlighted with a red box. It contains the following log output:

```
Starting job HowToSetupJoinLink at 13:27 16/11/2015.
[statistics] connecting to socket on port 3868
[statistics] connected
[statistics] disconnected
Job HowToSetupJoinLink ended at 13:27 16/11/2015.
```

The execution window also features a **Run** button, **Kill** button, and **Clear** button, all highlighted with a red box. The **Line limit** is set to 100 and **Wrap** is checked.

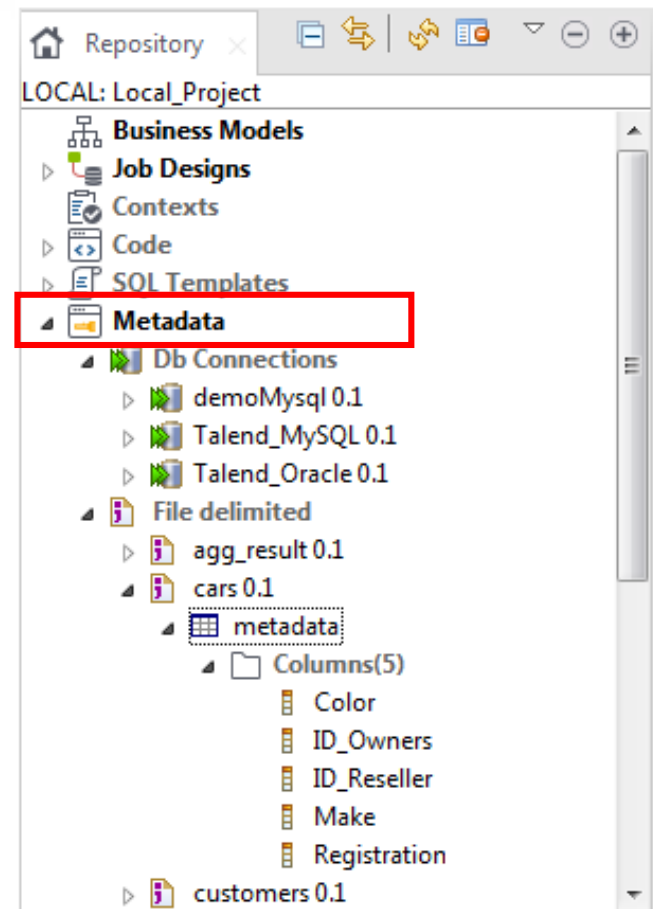
## Talend Studio – Metadata Repository

**Metadata in Talend Studio is definitional data that provides information about or documentation of other data managed within Talend Studio.**

Click **Metadata** in the **Repository** tree view to expand the folder tree. Each of the connection nodes will gather the various connections and schemas you have set up.

You can create and manage various metadata items in the **Repository** that can be used in all your Job designs.

- The **Metadata** folder in the **Repository** tree view stores reusable information on files, databases, and/or systems that you need to create your Jobs.
- Various corresponding wizards help you store these pieces of information that can be used later to set the connection parameters of the relevant input or output components and the data description called "schemas" in a centralized manner in *Talend Studio*.



Overview of Talend Data Integration (TDI)

Pre-requisites to Run TDI/Studio

Download & Install TDI/Studio

Getting Started

Building Your First Job Demo (Scenario)

## Talend Data Integration Demo

| In this Demo, you will see how you can...

### Read Source

See how the "Delimited File" wizard within Talend Studio can help you deal with complex file formats. You can create specific Schemas for all your needs.

### Enrich and Transform Data

The tMap component will be used to enrich your source data with lookups and data transformations.

### Write Target

Output your enriched data to any number of targets.

## Talend Data Integration Demo

In this Demo, we will use a customer.csv file with customer information and a state.txt file listing all 50 of the United States.

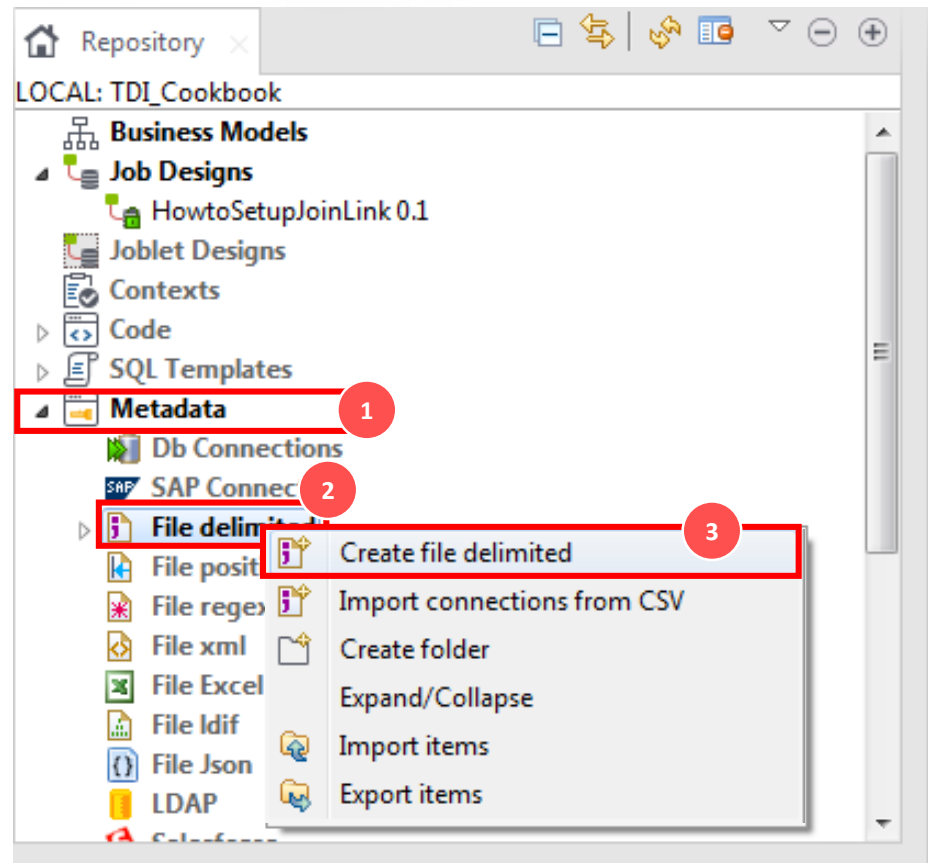
These files can be retrieved by [clicking here](#)

Save these files to this location on your local Drive. (C:\TalendDemo)

We will begin by Creating the customers metadata

In the Repository on the left of the Talend Studio main screen:

1. Expand the **Metadata** node.
2. Right-click on **File delimited**.
3. In the menu, click **Create file delimited** to open the **New Delimited File** wizard.



## Talend Data Integration Demo

## | In the New Delimited File wizard:

1. In the **Name** field, name the metadata *customers*.
2. Add a **Purpose**. Example: "Define Customer Metadata"
3. Add a **Description**. Example: "Defines the schema for customer data"
4. Click **Next** to continue.

The screenshot shows the 'New Delimited File' wizard in Talend Studio, Step 1 of 4. The wizard is titled 'Add a Metadata File on repository' and 'Define the properties'. It shows fields for Name, Purpose, Description, Author, Locker, Version, Status, and Path. Red circles and lines highlight the Name, Purpose, and Description fields, and the Next button at the bottom.

Name	Customers
Purpose	Define Customer Metadata
Description	Defines the schema for customer data
Author	user@talend.com
Locker	
Version	0.1
Status	
Path	

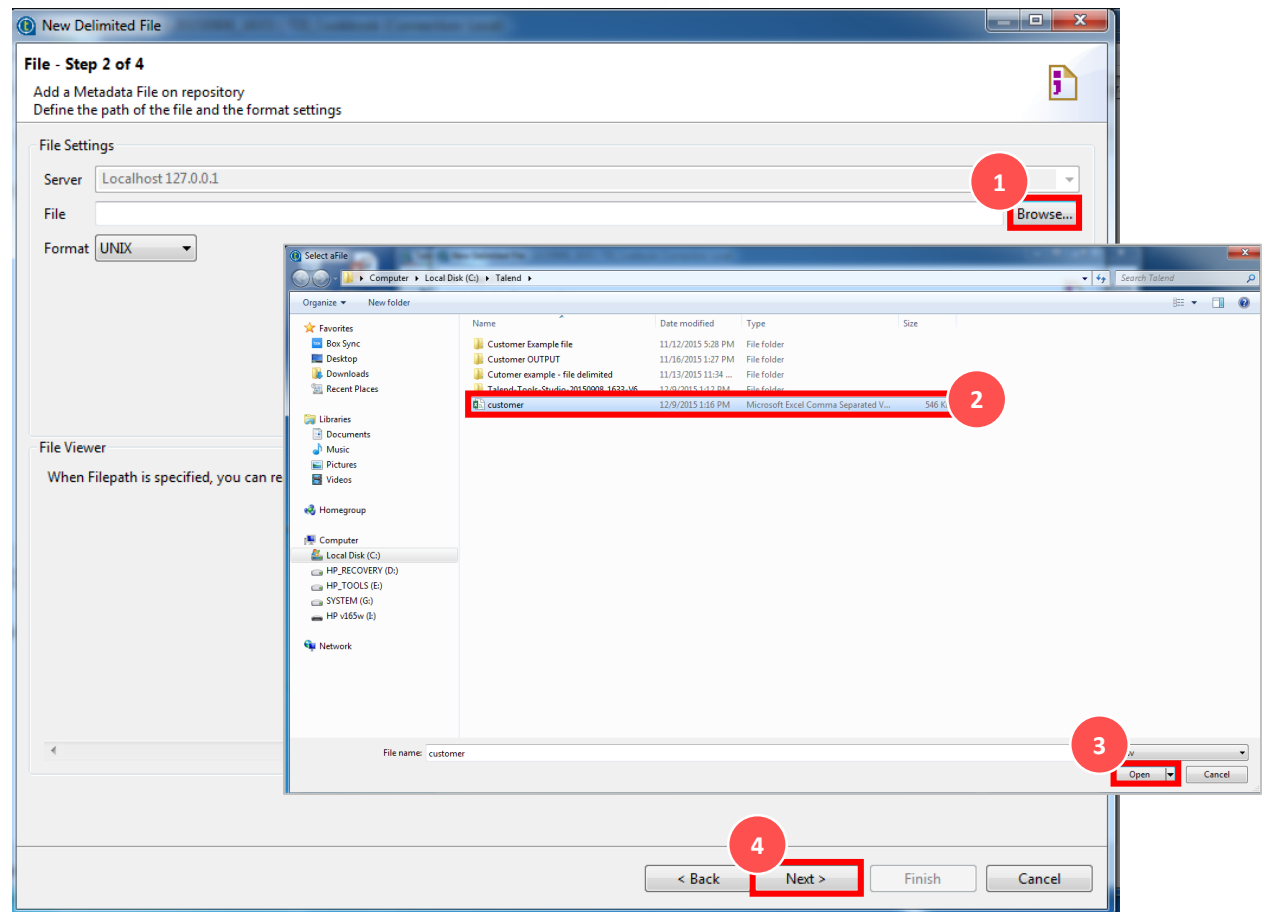
< Back 4 Next > Finish Cancel



## Talend Data Integration Demo

### In the New Delimited File wizard:

1. Click **Browse**
2. Select the *customer.csv* file from your computers local drive. (**C:\TalendDemo**)
3. Click **Open**.
4. Click **Next**.



### Talend Data Integration Demo

1. In the **Preview** area at the bottom of the wizard, check the **Set heading row as column names** box to retrieve the file column names.
2. Click **Refresh Preview** to update the structure and data preview.
3. Click **Next**.

**NOTE:** When you check the **Set heading row as column names** box, the number you entered in the **Header** field is incremented.

**File - Step 3 of 4**  
Add a Metadata File on repository  
Define the setting of the parse job

**File Settings**  
 Encoding: US-ASCII  
 Field Separator: Semicolon Corresponding Character: ";"  
 Row Separator: Standard EOL Corresponding Character: "\n"

**Escape Char Settings**  
 CSV  Delimited  
 Escape Char: Empty  
 Text Enclosure: Empty  
 Split row before field

**Rows To Skip**  
 If any rows must be ignored, specify the following parameters  
 Header:  1  
 Footer:   
 Skip empty row

**Limit Of Rows**  
 If the number of lines must be limited, specify this number  
 Limit:

**Preview** Output

Set heading row as column names **Refresh Preview**

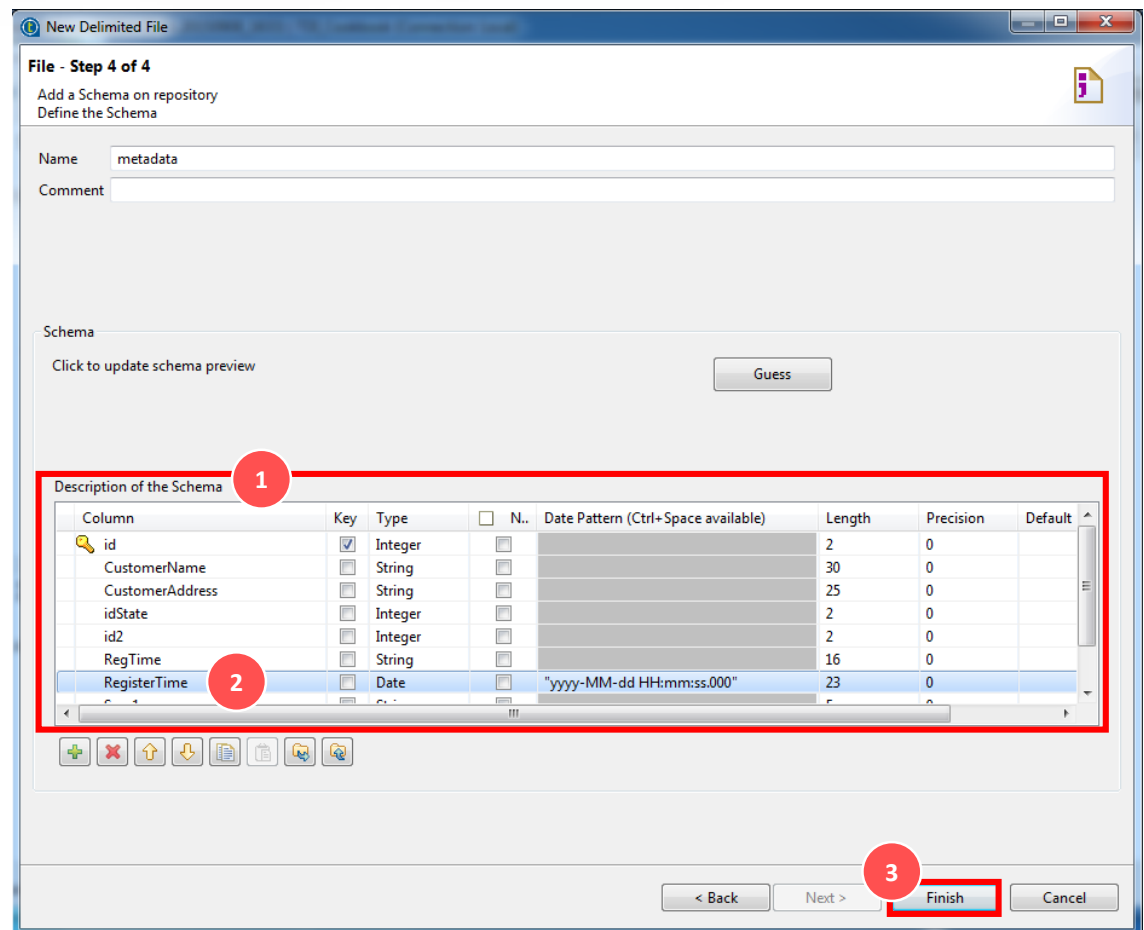
id	CustomerName	CustomerAddress	idState	id2	RegTime	RegisterTime	Sum1	Sum2,,
1	Griffith Paving and Sealcoatn	talend@apres91	7	41	03/11/2006 09:20	2001-01-17 06:26:40.000	67852	61521.4852,,
2	Bill's Dive Shop	511 Maple Ave. Apt. 1B	35	5	19/11/2004 15:48	2002-06-07 09:40:00.000	88792	15434.1000,,
3	Childress Child Day Care	662 Lyons Circle	1	28	16/02/2005 08:27	1990-04-01 21:00:00.000	35340	17856.8818,,
4	Facelift Kitchen and Bath	unknown	0	15	22/08/2002 09:55	1972-04-23 18:00:00.000	6097.	55560.2387,,
5	Terrinni & Son Auto and Truck	770 Fymer Rd	0	9	28/06/2001 09:15	1982-04-19 10:26:40.000	5146	39098.1148

Export as context Revert Context

< Back **Next >** Finish Cancel

## Talend Data Integration Demo

1. In the **Description of the Schema** table, set the columns as shown in the screenshot.
2. In the **RegisterTime** Column, verify the date pattern matches the date format as specified in the file. Date format should be specified as: "yyyy-MM-dd HH:mm:ss.000" (quotes should be included)
3. Click **Finish** to close the wizard.



Overview of Talend Data  
Integration (TDI)Pre-requisites to Run  
TDI/StudioDownload & Install  
TDI/Studio

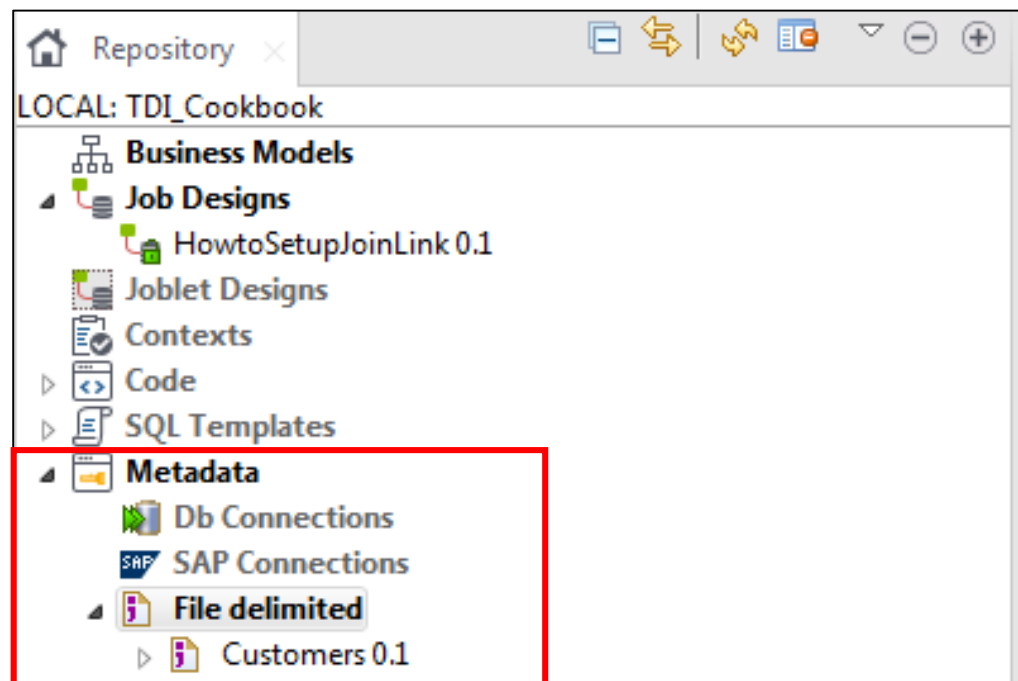
Getting Started

Building Your First Job  
Demo (Scenario)

## Talend Data Integration Demo

| In the Repository on the left:

1. The *customers* metadata is displayed in the **Metadata** > **File delimited** node.

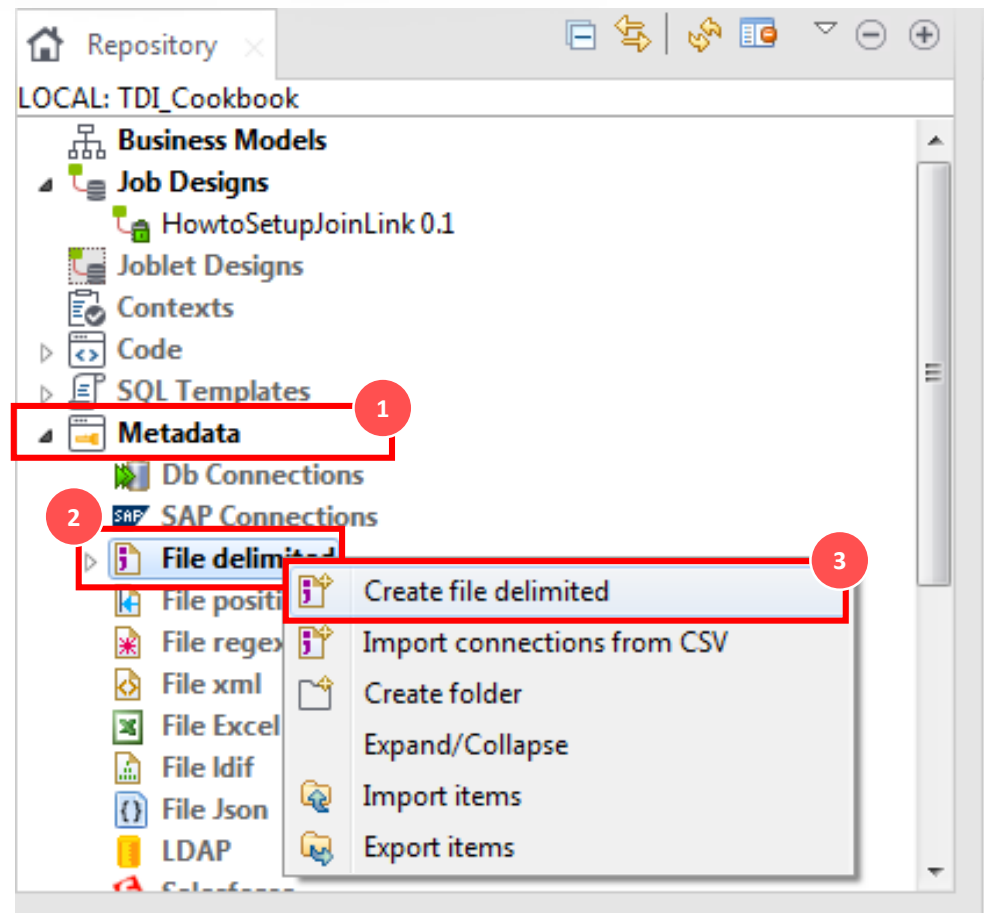
The customers metadata is created!

## Talend Data Integration Demo

Next, we are ready to create the [states metadata](#)

In the Repository on the left of the Talend Studio main screen:

1. Expand the **Metadata** node.
2. Right-click on **File delimited**.
3. In the menu, click **Create file delimited** to open the **New Delimited File** wizard.





## Talend Data Integration Demo

### In the New Delimited File wizard:

1. In the **Name** field, name the metadata *states*.
2. Add a **Purpose**. Example: "Define States Metadata"
3. Add a **Description**. Example: "Defines the schema for states data"
4. Click **Next** to continue.

The screenshot shows the 'New Delimited File' wizard in Talend Studio. The window title is 'New Delimited File'. The main title is 'File - Step 1 of 4' and the subtitle is 'Define the properties'. The form contains the following fields:

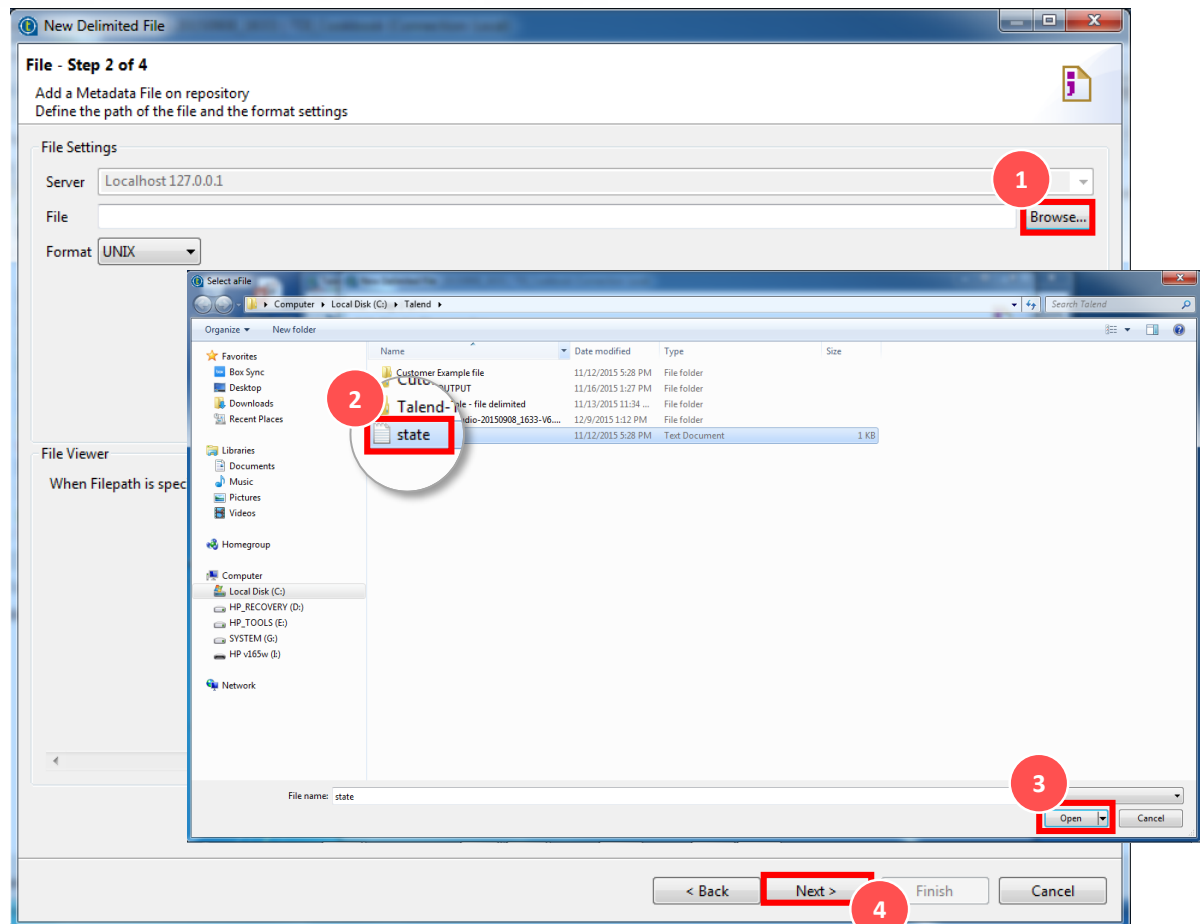
Name	States
Purpose	Define States Metadata
Description	Defines the schema for states data
Author	user@talend.com
Locker	
Version	0.1
Status	
Path	

At the bottom of the wizard, there are four buttons: '< Back', 'Next >', 'Finish', and 'Cancel'. The 'Next >' button is highlighted with a red box and a red circle with the number 4.

## Talend Data Integration Demo

### In the New Delimited File wizard:

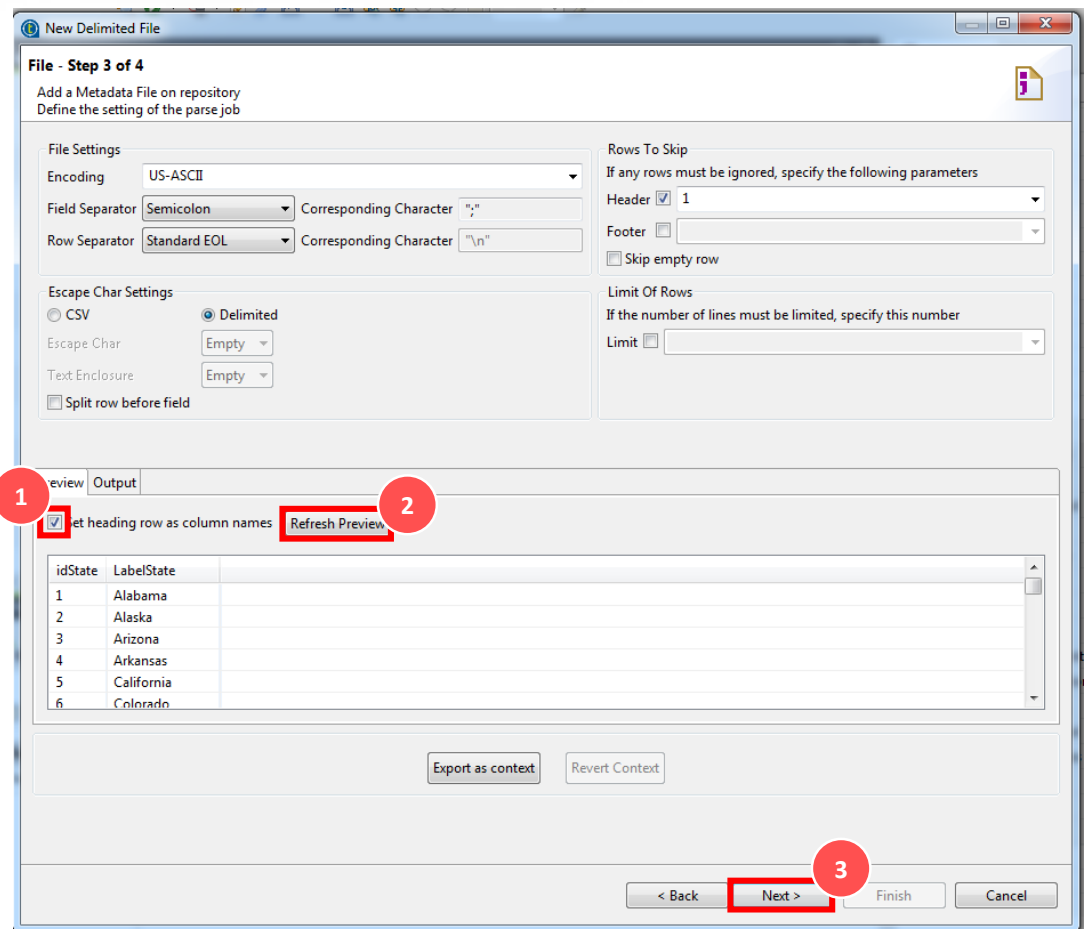
1. Click **Browse**
2. From your computers local drive (C:\TalendDemo), Select the **state.txt** file.
3. Click **Open**.
4. Click **Next**.



## Talend Data Integration Demo

1. In the **Preview** area at the bottom of the wizard, check the **Set heading row as column names** box to retrieve the file column names.
2. Click **Refresh Preview** to update the structure and data preview.
3. Click **Next**.

**NOTE:** When you check the **Set heading row as column names** box, the **Header** field is incremented.



**New Delimited File**  
File - Step 3 of 4  
Add a Metadata File on repository  
Define the setting of the parse job

**File Settings**  
Encoding: US-ASCII  
Field Separator: Semicolon Corresponding Character: ";"  
Row Separator: Standard EOL Corresponding Character: "\n"

**Escape Char Settings**  
CSV  Delimited   
Escape Char: Empty  
Text Enclosure: Empty  
 Split row before field

**Rows To Skip**  
If any rows must be ignored, specify the following parameters  
Header  1  
Footer   
 Skip empty row

**Limit Of Rows**  
If the number of lines must be limited, specify this number  
Limit

Preview | Output  
 Set heading row as column names Refresh Preview

idState	LabelState
1	Alabama
2	Alaska
3	Arizona
4	Arkansas
5	California
6	Colorado

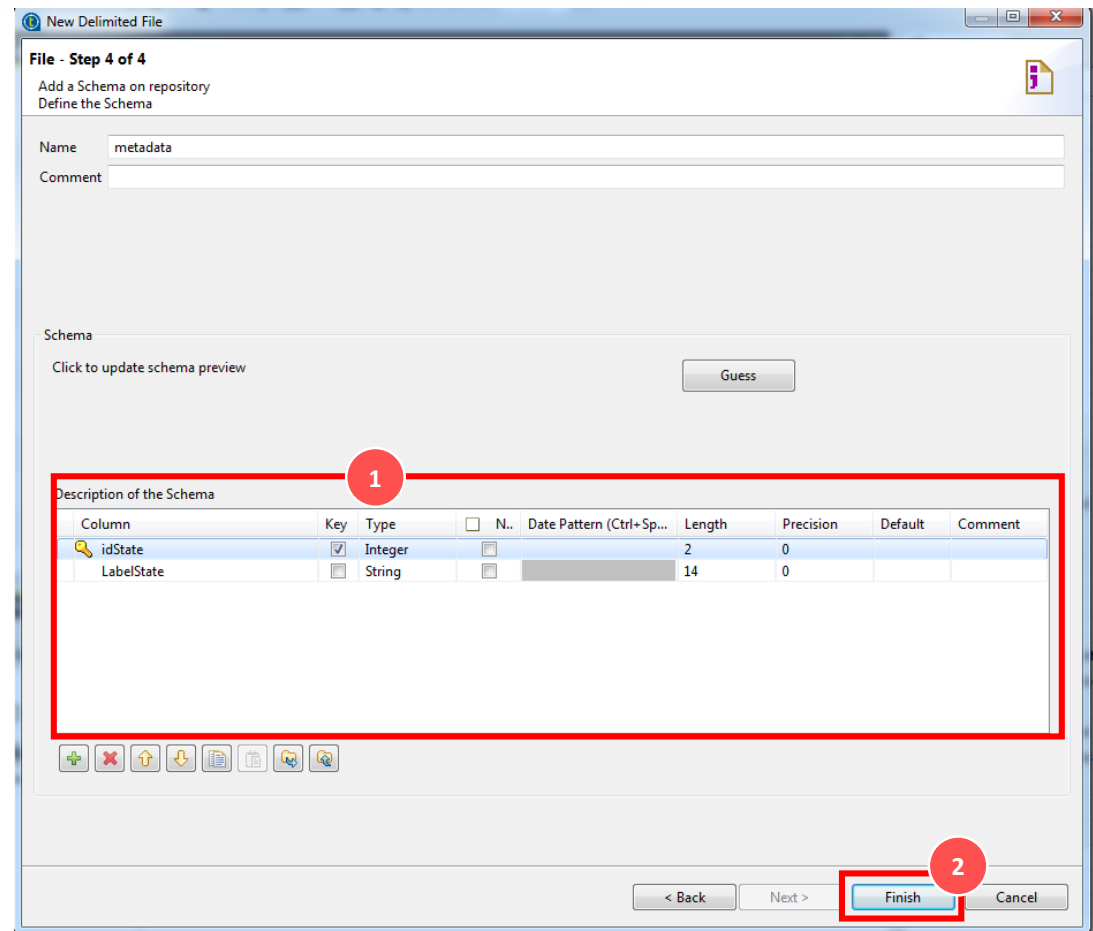
Export as context Revert Context

< Back Next > Finish Cancel

## Talend Data Integration Demo

1. In the **Description of the Schema** table, set the columns as shown in the screenshot.

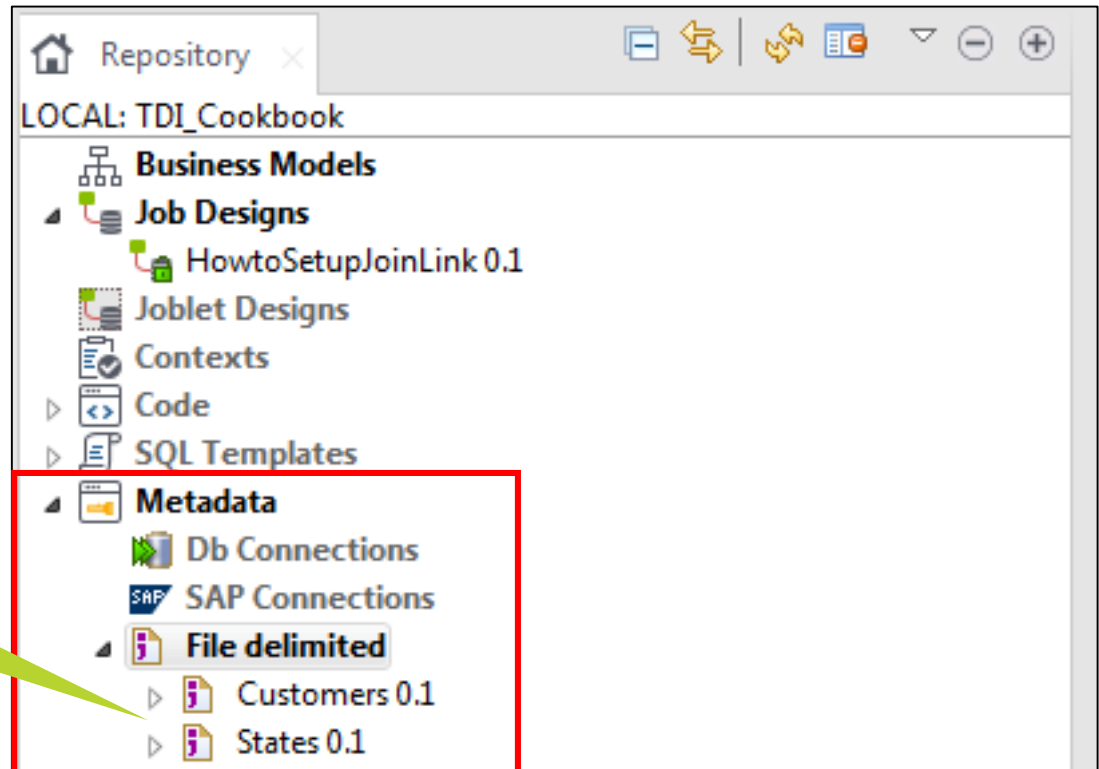
2. Click **Finish** to close the wizard.



## Talend Data Integration Demo

## | In the Repository on the left:

1. The *states* metadata is displayed in the **Metadata > File delimited** node.



The two metadata files now exist,  
and can be used in a Job.

Now, we are ready to Build our job!



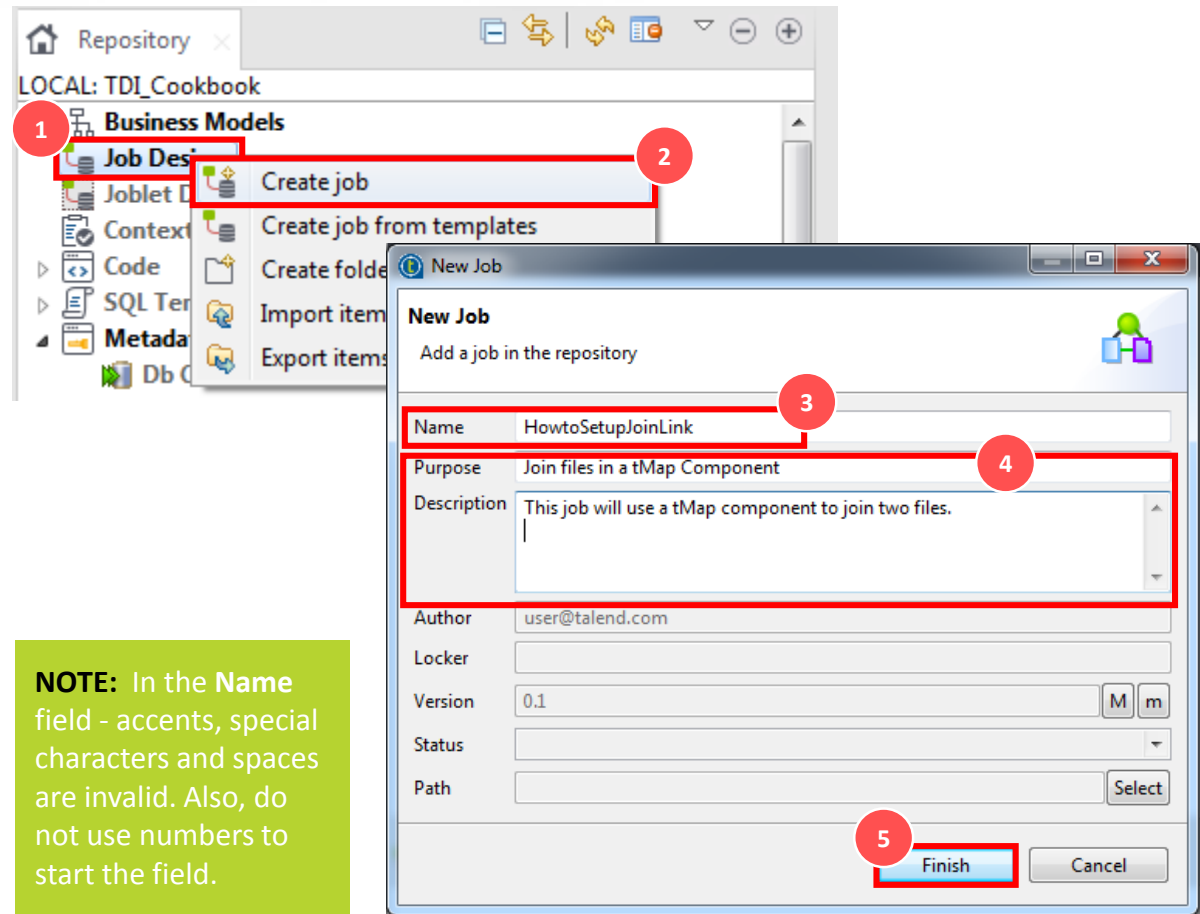
## Talend Data Integration Demo

Now that we have created our metadata we are ready to use a tMap component to join data from the two input files (customer and states) to create an output file.

## Let's Create the Job Design

## In the Repository on the left:

1. Right-click on **Job Designs**
2. Next click **Create Job** to open the **New Job** wizard.
3. In the **Name** field, fill in: *HowtoSetupJoinLink*.
4. Add an appropriate Purpose and Description. **Purpose:** Join files in a tMap Component. **Description:** This job will use a tMap component to join two files.
5. Click **Finish** to close the wizard and create your Job. The **Job Designer** opens an empty Job.

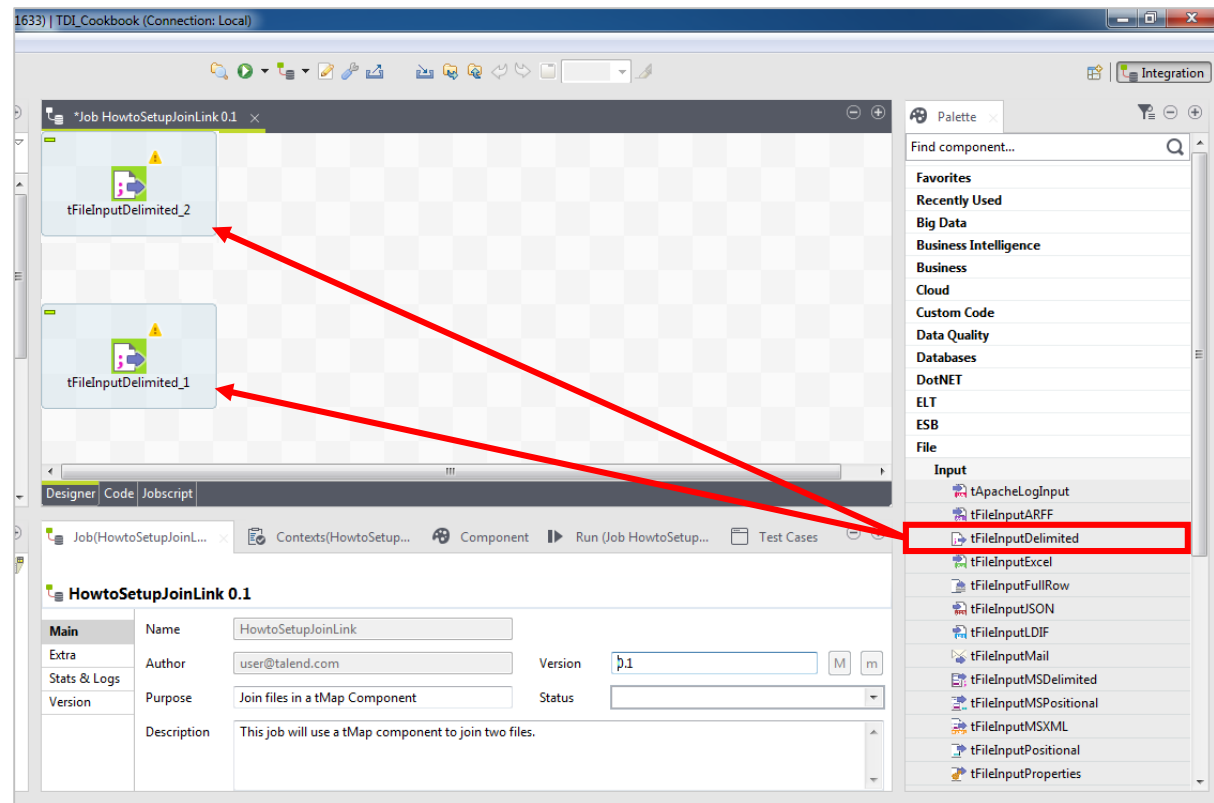


## Talend Data Integration Demo

Set the connectors reading the  
file delimited parameters:

In the Palette on the right:

1. the **File** family and the **Input** sub-family.
2. Click on the **tFileInputDelimited** component, drag and drop it on the Job Designer.
3. Do the same to add a second **tFileInputDelimited** component. (drag and drop)



## Talend Data Integration Demo

### In the Job Designer:

1. Double-click **tFileInputDelimited\_1** to show the corresponding **Component** view to define its **Basic settings**.
2. In the **Component view**: Select **Repository** in the **Property Type** list, Click [...] to select Customers metadata.
3. In the Repository content window, select **Customers metadata** file then. Click **OK**.
4. Click [...] next to the **Edit schema** field to check the file schema.

The **Edit parameter** using **repository** wizard opens.

The screenshot displays the Talend Job Designer interface with the following annotations:

- 1a**: A red box highlights the **tFileInputDelimited\_1** component in the job canvas.
- 1b**: A red box highlights the **Component** view tab in the bottom toolbar.
- 2a**: A red box highlights the **Repository** dropdown menu in the **Property Type** section.
- 2b**: A green box highlights the [...] button next to the **Schema** field.
- 3a**: A blue box highlights the **Customers 0.1** metadata file in the **Repository Content** window.
- 3b**: A blue box highlights the **OK** button in the **Repository Content** window.
- 4**: A purple box highlights the [...] button next to the **Edit schema** field in the component properties.

## Talend Data Integration Demo

## In the Edit parameter using repository wizard:

1. Select **View schema** in the **option** list as you only want to verify the schema.
2. Click **OK**.
3. The **Schema of tFileInputDelimited\_1** wizard opens.

## In the Schema of tFileInputDelimited\_1 wizard:

4. The schema is the same as the one you created in the **Repository** view in **Metadata > File delimited**. Be sure all boxes are checked in "Used Columns".
5. Click **OK**.

The screenshot shows two overlapping windows. The top window is titled "Edit parameter using repository" and contains a list of options: "View schema" (selected), "Change to built-in property", and "Update repository connection". The bottom window is titled "Schema of tFileInputDelimited\_1" and displays a table of columns with checkboxes in the "Used Column" column.

Used Column	Column	Key	Type	N..	Date Pattern (Ctrl+Space availa...	Len...	Prec...
<input checked="" type="checkbox"/>	id	<input checked="" type="checkbox"/>	int	<input type="checkbox"/>		2	0
<input checked="" type="checkbox"/>	CustomerNa...	<input type="checkbox"/>	String	<input type="checkbox"/>		30	0
<input checked="" type="checkbox"/>	CustomerAd...	<input type="checkbox"/>	String	<input type="checkbox"/>		25	0
<input checked="" type="checkbox"/>	idState	<input type="checkbox"/>	int	<input type="checkbox"/>		2	0
<input checked="" type="checkbox"/>	id2	<input type="checkbox"/>	int	<input type="checkbox"/>		2	0
<input checked="" type="checkbox"/>	RegTime	<input type="checkbox"/>	String	<input type="checkbox"/>		16	0
<input checked="" type="checkbox"/>	RegisterTime	<input type="checkbox"/>	Date	<input type="checkbox"/>	"yyyy-MM-dd HH:mm:ss.000"	23	0
<input checked="" type="checkbox"/>	Sum1	<input type="checkbox"/>	String	<input type="checkbox"/>		5	0
<input checked="" type="checkbox"/>	Sum2_	<input type="checkbox"/>	String	<input type="checkbox"/>		12	0

## Talend Data Integration Demo

## In the Job Designer:

1. Double-click **tFileInputDelimited\_2** to show the corresponding **Component** view to define its **Basic settings**.
2. In the **Component** view: Select **Repository** from the **Property Type** list and click [...].
3. The **Repository Content** wizard opens.

## In the Repository Content wizard:

4. Select the *states* metadata to automatically fill in the **tFileInputDelimited\_2** **Basic settings** with the *state.txt* file properties.
5. Click **OK**.

The screenshot illustrates the process of configuring a Talend component. It shows the Job Designer interface with two components, tFileInputDelimited\_1 and tFileInputDelimited\_2. The component tFileInputDelimited\_2 is selected, and its properties are visible in the bottom panel. The 'Property Type' is set to 'Repository'. The 'Repository Content' wizard is open, showing a tree view of metadata. The 'States 0.1' metadata is selected. The 'OK' button is highlighted.

Annotations in the image:

- 1a: Red box around tFileInputDelimited\_2 in the Job Designer.
- 1b: Red box around the 'Component' tab in the Job Designer.
- 2a: Green box around the 'Repository' dropdown in the Component view.
- 2b: Green box around the '...' button in the Component view.
- 3: Blue circle around the 'Repository Content' wizard title bar.
- 4: Purple circle around the 'States 0.1' metadata item in the wizard.
- 5: Black circle around the 'OK' button in the wizard.
- 1c: Red circle around the 'Basic settings' tab in the Component view.



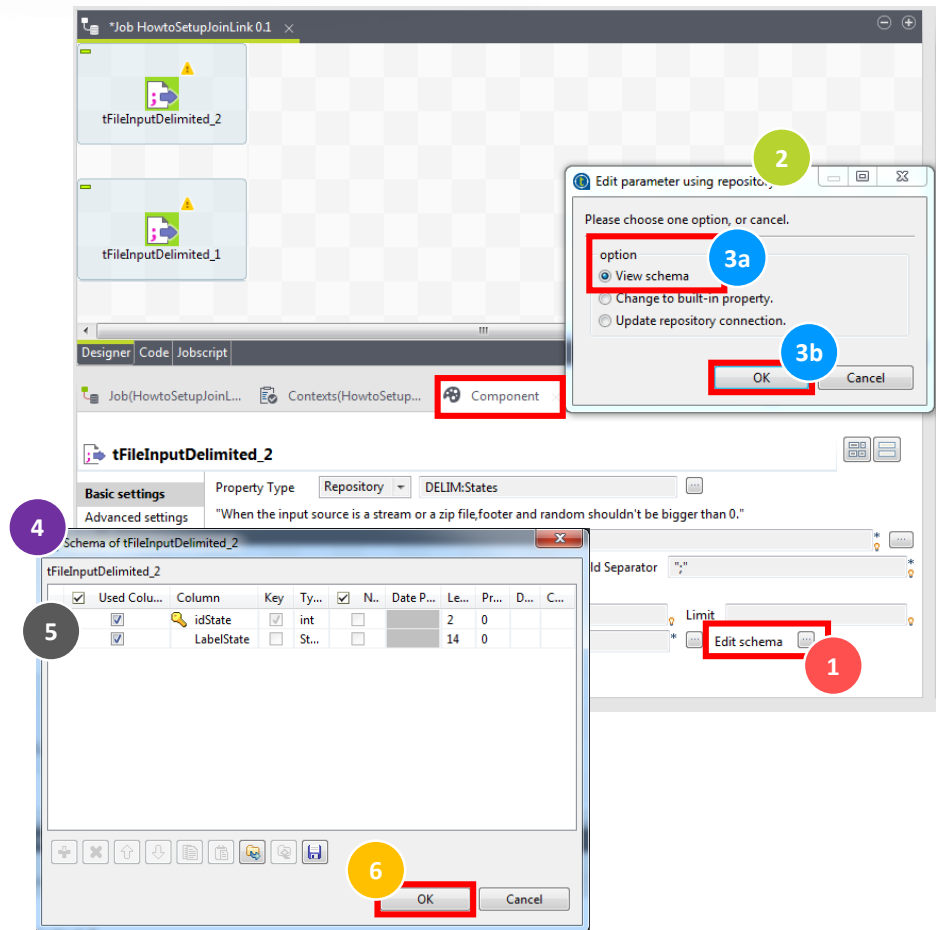
## Talend Data Integration Demo

### In the Component view:

1. Click [...] next to the **Edit schema** field to check the file schema.
2. The **Edit parameter using repository** wizard opens.
3. Keep **View schema** selected as you only want to verify the schema and click **OK**.
4. The **Schema of tFileInputDelimited\_2** wizard opens.

### In the Schema of tFileInputDelimited\_2 wizard:

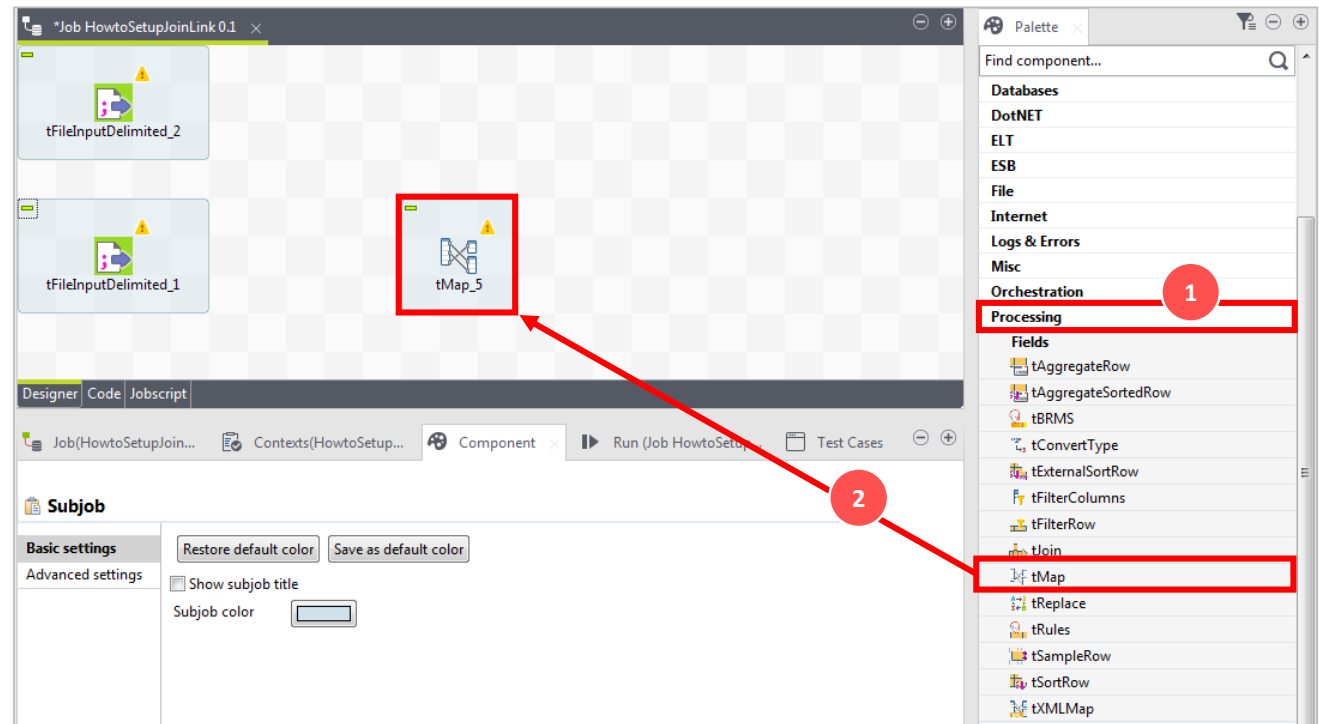
5. The schema is the same as the one available in the **Repository** view in **Metadata > File delimited**.
6. Click **OK**



## Talend Data Integration Demo

## In the Palette:

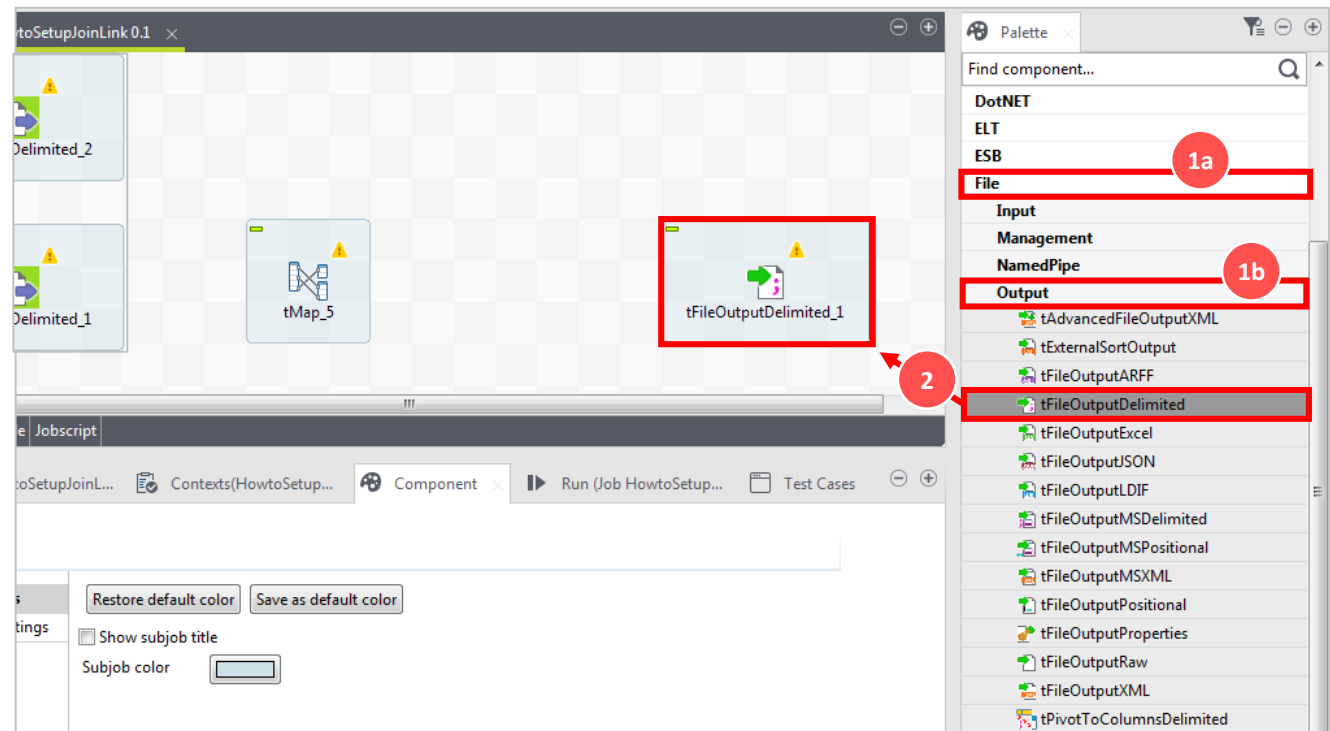
1. To add the processing component, click **Processing** family.
2. Click on the **tMap** component and drop it on the Job Designer.



## Talend Data Integration Demo

## In the Palette:

1. To add the output component, click **File** family and then **Output** family.
2. Click on the **tFileOutputDelimited** component, drag and drop it on the Job Designer.

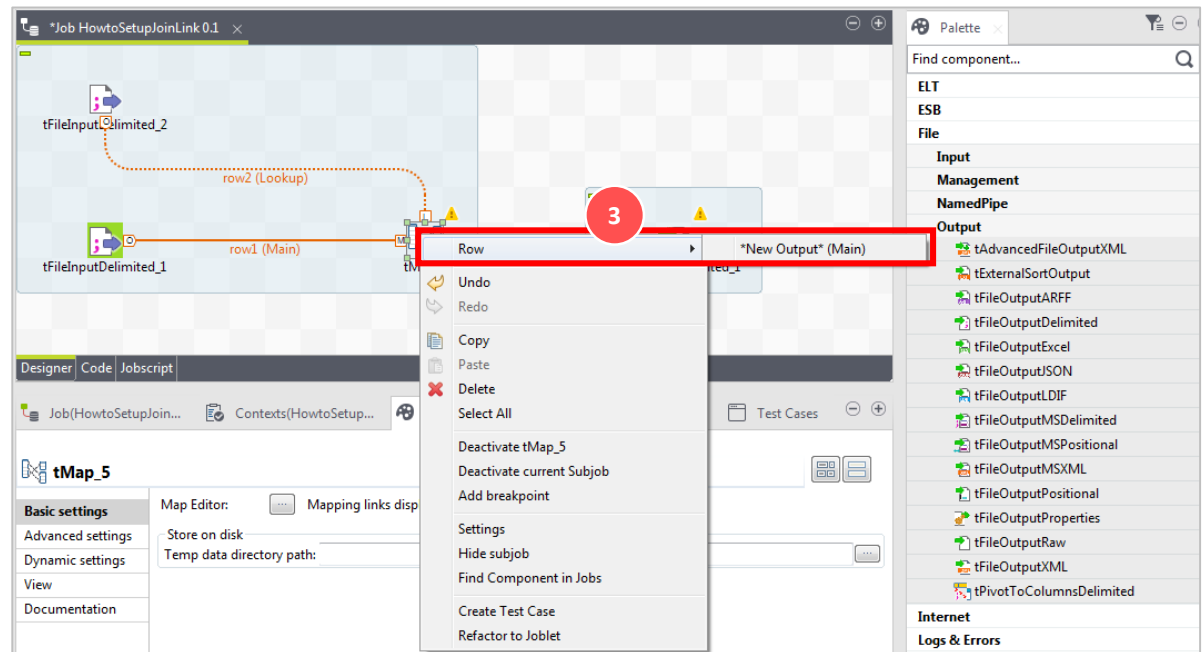


## Talend Data Integration Demo

## In the Job Designer

## | Link the components:

1. To link the components together, right-click on **tFileInputDelimited\_1**, hold and drag it to the **tMap**.
2. Do the same to link the **tFileInputDelimited\_2** to the **tMap**
3. To link the **tMap** component to the **tFileOutputDelimited** right click on the **tMap** and select **row** > **\*New Output\*(Main)** and connect it to **tFileOutputDelimited**

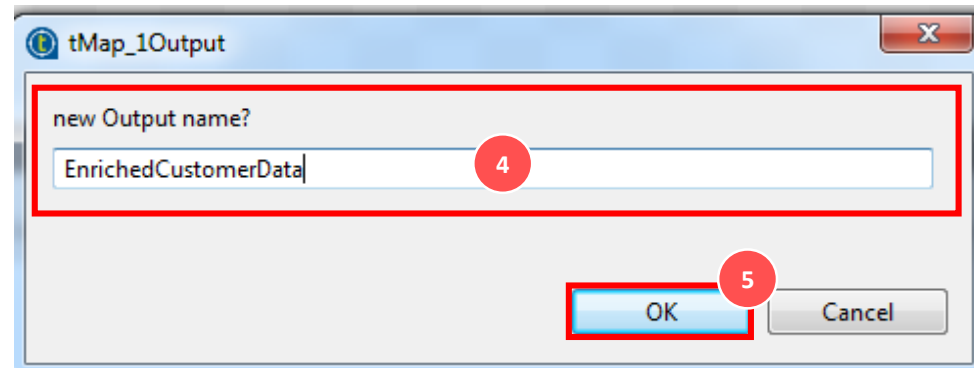


## Talend Data Integration Demo

## In the Job Designer

| [Link the components cont.:](#)

4. In the **tMap\_1 Output** wizard, name the link between the **tMap** and the **tFileOutputDelimited**: (for the purpose of this exercise) we will name it *EnrichedCustomerData*.
5. Click **OK**, a message window will appear, "Do you want to get the schema of the target component? **Click Yes**



Overview of Talend Data  
Integration (TDI)Pre-requisites to Run  
TDI/StudioDownload & Install  
TDI/Studio

Getting Started

Building Your First Job  
Demo (Scenario)

## Talend Data Integration Demo

## In the Job Designer:

1. Double-click on the **tMap** to open the tMap editor.

**NOTE:** You can also select the **tMap** in the Job Designer, click on the **Component** view and click [...] next to the **Map Editor** field to open the tMap editor.

The screenshot shows the Talend Job Designer interface for a job named "Job HowToSetupJoinLink 0.1". The job design is displayed on a checkered background. It consists of several components: "tFileInputDelimited\_2" (top left), "tFileInputDelimited\_1" (bottom left), "tMap\_5" (center), "Demo\_output (Main)" (center right), and "tFileOutputDelimited\_1" (bottom right). A red circle with the number "1" is placed over the "tMap\_5" component, indicating it is the target for the next step. The "Designer" tab is active, and the "Component" view is selected in the bottom toolbar. The "tMap\_1" editor is open at the bottom, showing the "Map Editor" field with a dropdown arrow, and the "Mapping links display as:" dropdown set to "Auto". The "Basic settings" section is expanded, showing "Store on disk" and "Temp data directory path:" fields.



## Talend Data Integration Demo

### In the tMap editor:

1. In the **row1** table, select the *id*, *CustomerName* and *CustomerAddress* columns and drag them to the **output** table.
2. Then select the *idState* column of the **row 1** table and drag it to the *idState* column of the **row2** table. This creates a join between the two tables.
3. In the **row2** table, select the *LabelState* column and drag it in the **output** table.
4. Click **OK**.
5. The **Propagate** message box opens.
6. Click **Yes** to propagate the schema you defined in the tMap editor to the next component.

The screenshot shows the Talend Data Integration tMap editor interface. It features a central workspace with three tables: **row1**, **row2**, and **EnrichedCustomerData**. The **row1** table has columns: id, CustomerName, CustomerAddress, idState, id2, RegTime, RegisterTime, Sum1, Sum2\_... The **row2** table has columns: Expr. key, LabelState. The **EnrichedCustomerData** table has columns: rowLid, rowLCustomerName, rowLCustomerAddress, rowLLabelState. Red arrows and numbered circles (1-6) illustrate the mapping process: 1. Dragging id, CustomerName, and CustomerAddress from row1 to the output table. 2. Dragging idState from row1 to idState in row2. 3. Dragging LabelState from row2 to the output table. 4. Clicking the OK button in the Propagate dialog. 5. The Propagate dialog box is open, asking 'Would you like to propagate changes?'. 6. The Yes button is selected.

Below the workspace, the Schema editor and Expression editor are visible. The Schema editor shows the schema for row1 and EnrichedCustomerData. The Expression editor is empty.

Column	Key	Type	N...	Date Pattern (...)	Length	Precision	Defa...	Comm...
id	<input checked="" type="checkbox"/>	int	<input type="checkbox"/>		2	0		
CustomerName	<input type="checkbox"/>	String	<input type="checkbox"/>		30	0		
CustomerAddress	<input type="checkbox"/>	String	<input type="checkbox"/>		25	0		
idState	<input type="checkbox"/>	int	<input type="checkbox"/>		2	0		

Column	Key	Type	N...	Date Pattern (...)	Length	Precision	Defa...	Comm...
id	<input checked="" type="checkbox"/>	int	<input type="checkbox"/>		2	0		
CustomerName	<input type="checkbox"/>	String	<input type="checkbox"/>		30	0		
CustomerAddress	<input type="checkbox"/>	String	<input type="checkbox"/>		25	0		
LabelState	<input type="checkbox"/>	String	<input type="checkbox"/>		14	0		

Propagate dialog box:

Would you like to propagate changes ?

Yes No

## Talend Data Integration Demo

### In the Job Designer:

1. Double-click on the **tFileOutputDelimited** to show the corresponding **Component** view to define its **Basic settings**.

### In the Component view:

2. Click [...] next to the **File Name** field to specify the path of the file to be created. Navigate to your local drive C:/Talend and name the output file *EnrichedCustomers.csv* then click **open**.
3. Check the **Include Header** box to include the column headings in the output file.

The screenshot displays the Talend Job Designer interface. The top part shows a job flow with components: tFileInputDelimited\_2, tFileInputDelimited\_1, tMap\_5, and tFileOutputDelimited\_1. A red box labeled '1a' highlights the tFileOutputDelimited\_1 component. Below the job flow, the 'Component' view for tFileOutputDelimited\_1 is shown. A red box labeled '1b' highlights the 'Component' button in the toolbar. The 'Basic settings' tab is active, and a red box labeled '1c' highlights the 'File Name' field, which contains the path 'C:/Talend/EnrichedCustomers.csv'. A red box labeled '2' highlights the file name input area. Another red box labeled '3' highlights the 'Include Header' checkbox, which is checked.

Overview of Talend Data Integration (TDI)

Pre-requisites to Run TDI/Studio

Download & Install TDI/Studio

Getting Started

Building Your First Job Demo (Scenario)

## Talend Data Integration Demo

### In the Job Designer:

#### Run the Job

1. Press **Ctrl+S** to save the Job.
2. In the run tab, Click on **Run** to execute the job.

The **Run** view displays at the bottom of **Talend Studio** and the execution window follows the Job execution.

- The HowtoSetupJoinLink Job is working!
- It joins data from two input files and creates an output file. In this Demo, we enriched the customer file with State codes.

The screenshot displays the Talend Studio Job Designer interface. On the left, a tree view shows the job structure: LOCAL: TDI\_Cookbook > Business Models > Job Designs > HowtoSetupJoinLink 0.1. The main workspace shows a job diagram with three components: tFileInputDelimited\_2 (51 rows in 0.04s, 1307.69 rows/s, row2 (Lookup)), tFileInputDelimited\_1 (5000 rows in 0.48s, 10416.67 rows/s, row1 (Main)), and tMap\_5 (5000 rows in 0.48s, 10416.67 rows/s, EnrichedCustomerData (Main)). The job is connected to tFileOutputDelimited\_1. Below the workspace, the 'Run' button is highlighted with a red box and a '2a' callout. The execution window below shows the job name 'Job HowtoSetupJoinLink' and the 'Run' button highlighted with a red box and a '2b' callout. The execution log displays the following text: 

```
Starting job HowtoSetupJoinLink at 14:24 10/12/2015.
[statistics] connecting to socket on port 3602
[statistics] connected
[statistics] disconnected
Job HowtoSetupJoinLink ended at 14:24 10/12/2015. [exit code=0]
```

Now you have to document it!

## Talend Data Integration Demo

### In the Job Designer:

#### Document the Job

To document your Job, give it a title.

1. Click in the **blue area** around it.

2. Click the **Component** view.

3. Check the **Show subjob title** check box and in the **Title** field, fill in the corresponding title: *Set up a Join link*.

4. **Save** your Job again.

**That's It...**

The Job is working and it's documented.

The screenshot displays the Talend Job Designer interface. The top part shows a job flow diagram with components: tFileInputDelimited\_2, tFileInputDelimited\_1, tMap\_5, and tFileOutputDelimited\_1. A red box labeled '1' points to a blue area around the tMap\_5 component. Below the diagram, the 'Designer' tab is active, and the 'Component' view is selected, indicated by a red box labeled '2'. The 'Subjob' configuration panel is visible, with the 'Show subjob title' checkbox checked and a red box labeled '3' around it. The 'Title' field is filled with 'Set up a Join link'.

Overview of Talend Data Integration (TDI)

Pre-requisites to Run TDI/Studio

Download & Install TDI/Studio

Getting Started

Building your first job Demo

## Conclusion

### | Companies need to integrate more data sources than ever before

- **Why Change?** You need to keep up with business requests, and hand-coding ETL projects is not efficient anymore
- **Why Now?** You have a new data integration project and/or a mandate to reduce costs using current tools
- **Why Talend?** TDI is the fastest, most cost effective way to connect data




### The good news is that...

With Talend, you are just a few clicks away from making this a reality.

### | What are your next steps?

Now that you understand how you can address your data integration challenges using Talend ...

The next step would be to discuss your specific project requirements with your Talend sales representative.



Let's take one final look at how Talend will help you...

## Conclusion

### How will Talend help you?

#### Develop 10 times faster and do more with your data

First, Talend Studio features over **800 connectors** to natively connect databases, flat files, cloud-based applications and more data.

Graphical drag-and-drop tools and wizards speed design, test creation, and generation of code in the languages you need – much better than hand-coding.

Continuous delivery data integration means fewer software defects and faster time-to-market.

#### Monitor and manage complex deployments with ease

Second, TDI incorporates powerful capabilities for managing all data integration deployments from the simplest jobs to the most complex ones, from single jobs to thousands of jobs, and with data volumes ranging from a few records to terabytes of data – all through a central console, the Talend Administration Center.

The Activity Monitoring Console monitors job events (successes, failures, warnings, etc.), execution times and data volumes through a single console, so you have a single view of job status.

#### Expect the lowest total cost of ownership of any solution

And third, Talend lowers operations costs.

Talend's zero footprint solution takes the complexity out of...

- ✓ integration deployment,
- ✓ management,
- ✓ maintenance

A usage based subscription model provides a fast return on investment without large upfront costs.

Talend is easy to get started, has a vast community for support, and you can leverage in-house resources since completely standards-based.