talend | Connecting the Data-Driven Enterprise

Talend Administration Center

User Guide

6.2.1

Adapted for v6.2.1. Supersedes previous releases.

Publication date: July 7, 2016

Notices

End User License Agreement

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Preface

1. General information

1.1. Purpose

This User Guide explains how to manage *Talend Administration Center* functions in a normal operational context.

Information presented in this document applies to *Talend Administration Center* **6.2.1**.

1.2. Audience

This guide is for users and administrators of *Talend Administration Center*.

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

1.3. Typographical conventions

This guide uses the following typographical conventions:

- text in **bold:** window and dialog box buttons and fields, keyboard keys, menus, and menu options,
- text in **[bold]:** window, wizard, and dialog box titles,
- text in `courier`: system parameters typed in by the user,
- text in *italics*: file, schema, column, row, and variable names,
- The  icon indicates an item that provides additional information about an important point. It is also used to add comments related to a table or a figure,
- The  icon indicates a message that gives information about the execution requirements or recommendation type. It is also used to refer to situations or information the end-user needs to be aware of or pay special attention to.
- `Any command is highlighted with a grey background or code typeface.`
- The second person pronoun "you" used through out the document addresses the user of *Talend Administration Center* depending on his/her roles and rights and not any generic user. For more information, see *User roles/rights in the Administration Center*.

2. Feedback and Support

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

http://talendforge.org/forum

Chapter 1. Talend Administration Center: Concepts and Principles

The *Talend* solutions offer the opportunity to work cooperatively on various projects: Data Integration, ESB, Data Management, Data Services, Enterprise Integration, MDM, or all of them.

This collaborative work is handled via *Talend Administration Center*, a web-based application centralizing the management and administration of your studio. *Talend Administration Center* also centralizes the users' role management and access rights to your projects and the scheduling and monitoring of processes(Jobs).

Projects and processes are all centralized in a remote repository enabling resource sharing and project configuration.

Users created via *Talend Administration Center* will be able to connect to the projects they have been assigned to in the studio, where they will be able to create technical processes that would then be made available via *Talend Administration Center* for remote launching, scheduling and monitoring. See *Talend Studio User Guide* for further information about how to connect to the Remote Repository from the studio and about how to create processes (Jobs).

Talend Administration Center allows you to:

- Manage operating and connection information via the **Configuration** page of the application. For more information, see *Configuring Talend Administration Center*.
- Administrate projects, manage users and licenses via the **Projects**, **Users** and **Licenses** pages. For more information, see *Managing projects*, *Managing project references Managing project authorizations*, *Managing Users* and *Managing licenses*.
- Schedule deployment and roll-out of processes (Jobs) via the **Conductor** node and monitor them via the **Monitoring** node. For more information, see *Executing Jobs, Routes and Services* and *Monitoring task execution and accessing logs*.

Other pages might be available to you depending on your license. For more information, please refer to *What modules and features are available depending on your license* .

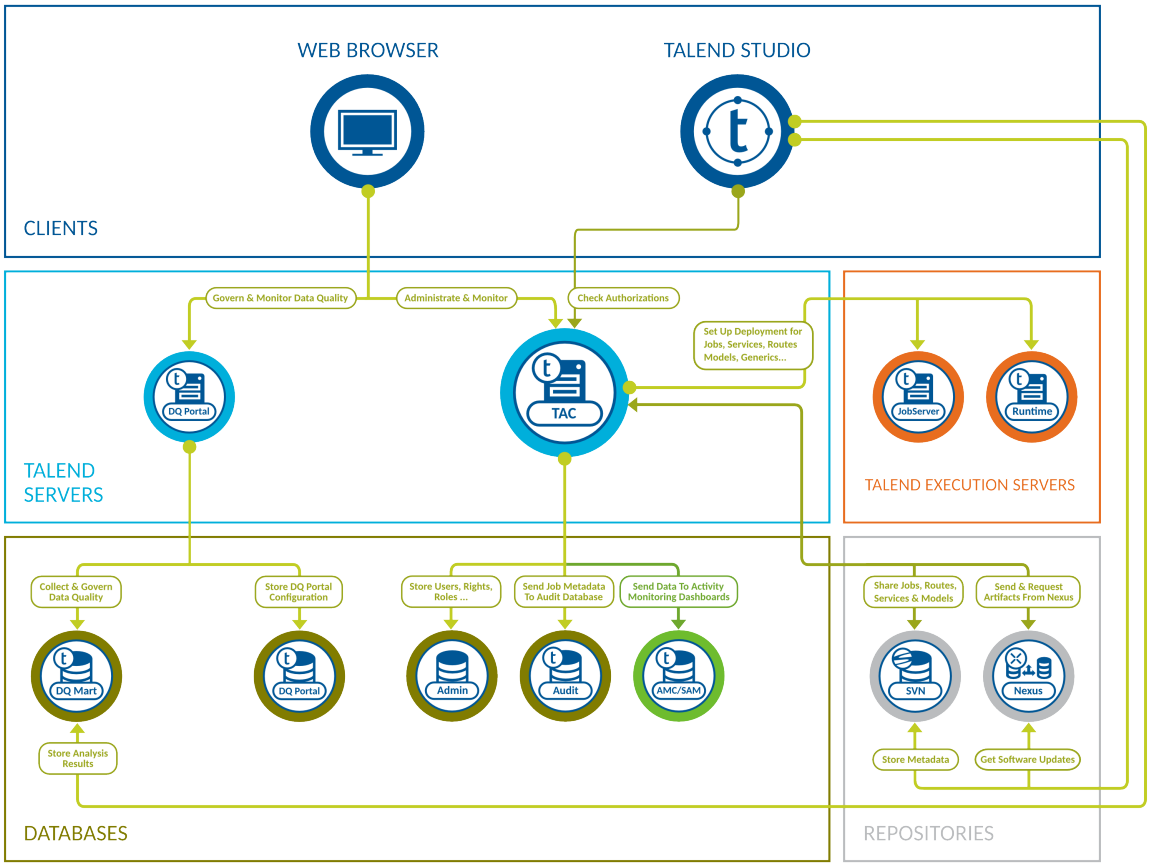
1.1. Operating principles

The operating principles could be summarized into the following major topics:

- building technical or business-related processes,
- administrating users, projects, access rights, and processes and their dependencies,
- deploying and executing technical processes,
- monitoring the execution of the technical processes.

Each of the above topics has been graphically described by isolating specific functionalities in different functional blocks.

The availability of some functionalities depends on your license. For more information on which functionalities are available to you, see *What modules and features are available depending on your license* .



Building processes. The chart shows the functional blocks involved in building technical processes, managing projects and administrating users' accounts:

In this description, several color-based types of functional block are defined:

- The **CLIENTS block** includes one or more Studio APIs and Web browsers that could be on the same or on different machines.

  From the Studio API, end-users can carry out technical processes: data integration processes (named Jobs), data service processes (named Services), or mediation Routes. From the Studio, Jobs, Services and Routes can be published on the Nexus Artifact Repository. The Studio allows the user to work on any project for which he has authorization for. For more information about the Studio, see *Talend Studio User Guide*.

From the Web browser, end-users connect to the remotely based Administration Center through a secured HTTP protocol.

The end-user category in this description may include developers, project managers, administrators and any other person involved in building technical processes. Each of these end-users will use either the Studio or the Administration Center or both of them depending on the enterprise policy. For more information about users' rights and roles, see *User roles/rights in the Administration Center*.

- The **TALEND SERVERS and DATABASES blocks** and the **SVN** grey circle include a web-based Administration Center (application server) connected to two shared repositories: one based on an SVN server and one based on a database server (**Admin**).

  The Administration Center enables the management and administration of all projects. Administration metadata (user accounts, access rights and project authorization for example) is stored in the database server and project metadata (Jobs, Routines, Business Models, Routes, Services, for example) is stored in the SVN server to easily share them between the different end-users.

For more information on how to install and configure the items of these functional blocks, see the *Talend Installation Guide*.

Deployment and execution. The chart also shows the execution servers (JobServers and Talend Runtimes) and the Nexus Artifact Repository. Artifact Repository is involved in publishing Jobs, Web, REST and data services, and mediation routes created in the studio or any other Java IDE, and the execution server is involved in deploying and executing them:

- The **Nexus** grey circle represents the Artifact Repository that stores all Jobs, Routes and Services that are published from the Studio and are ready to be deployed and executed in the execution server.
- The **TALEND EXECUTION SERVERS block** represents the execution servers that run the technical processes according to the execution scheduling set up in the *Talend Administration Center* Web application. Those execution servers can be:
  - One or more Talend Runtimes (execution container) deployed inside your information system. The Talend Runtime deploys and executes the Jobs, Routes and Services retrieved from the Artifact Repository according to the set up defined in the Administration Center via the web application.

    If you have several Talend Runtimes on which to deploy the artifacts, you will be able to load balance their execution according to your needs. All instances of Talend Runtime will communicate between each other via the Service Locator to identify the one more likely to deploy and execute the artifact(s) set to deployment in *Talend Administration Center*. The Talend Runtime elected for the deployment will request for the artifact(s) to deploy and execute from the Artifact Repository and the Artifact Repository will thus send the artifact(s) requested along with all the dependencies needed for its/their execution to the Talend Runtime, that will deploy and execute them.
  - One or more JobServers deployed inside your information system that run technical processes (Jobs) according to scheduled time, date or event set in the *Talend Administration Center* Web application.

For more information on how to manage deployment, see *Executing Jobs, Routes and Services*.

For more information on *Talend Runtime*, see the *Talend ESB Infrastructure Services Configuration Guide*.

For more information on how to install and configure the items of these functional blocks, see the *Talend Installation Guide*.

Monitoring. The chart also shows the Monitoring module:

- The **AMC/SAM** green circle shows the Activity Monitoring Console and the Service Activity Monitoring.

  The Activity Monitoring Console allows end-users to monitor the execution of technical processes. It provides detailed monitoring capabilities that can be used to consolidate collected log information, understand the

underlying data flows interaction, prevent faults that could be unexpectedly generated and support the system management decisions. For more information, see *Monitoring task execution and accessing logs*.

The Service Activity Monitoring allows the end-users to monitor service calls. It provides monitoring and consolidated event information that the end-user can use to understand the underlying requests and replies that compose the event, monitor faults that may be unexpectedly generated and support the system management decisions. For more information, see *Monitoring the Service activity*.

For more information on how to install and configure the Monitoring items, see the *Talend Installation Guide*.

1.2. What modules and features are available depending on your license

The modules shown in the Menu of *Talend Administration Center* depend on your license.

Please refer to the matrix below to see what modules and features ship with each license.

		Talend ESB	**Talend Data Integration**	**Talend Big Data**	**Talend Data Management Platform**	**Talend Big Data Platform**	**Talend Data Services Platform**	**Talend Real-time Big Data Platform**	**Talend MDM Platform**	**Talend Data Fabric**
Artifact Repository										
	Software Update	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Releases/ Snapshots	✔	✔	✔	✔	✔	✔	✔	✔	✔
	User Libraries	✔	✔	✔	✔	✔	✔	✔	✔	✔
Conductor										
	ESB Conductor	✔					✔	✔	✔	✔
	Publisher	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Job Conductor		✔	✔	✔	✔	✔	✔	✔	✔
	Big Data Streaming							✔		✔
	Execution Plan		✔	✔	✔	✔	✔	✔	✔	✔
	Servers (JobServers, Talend Runtimes)	✔	✔	✔	✔	✔	✔	✔	✔	✔
	Virtual servers			✔	✔	✔	✔	✔	✔	✔
Repository Browser			✔	✔	✔	✔	✔	✔	✔	✔
Monitoring										
	Execution History and Timeline		✔	✔	✔	✔	✔	✔	✔	✔
	CommandLine		✔	✔	✔	✔	✔	✔	✔	✔

		Talend ESB	Talend Data Integration	Talend Big Data	Talend Data Management Platform	Talend Big Data Platform	Talend Data Services Platform	Talend Real-time Big Data Platform	Talend MDM Platform	Talend Data Fabric
	Activity Monitoring Console (Web application)		✔	✔	✔	✔	✔	✔	✔	✔
	Logging	✔	✔	✔	✔	✔	✔	✔	✔	✔
Real Time Statistics			✔	✔	✔	✔	✔	✔	✔	✔
Job execution recovering			✔	✔	✔	✔	✔	✔	✔	✔
Audit			✔	✔	✔	✔	✔	✔	✔	✔
Drools					✔	✔	✔	✔	✔	✔
Migration check		✔	✔	✔	✔	✔	✔	✔	✔	✔
ESB Infrastructure (Service Locator, Service Activity Monitoring, Authorization, Service Registry, Provisioning)		✔					✔	✔	✔	✔
MDM									✔	✔
Metaservlet		✔	✔	✔	✔	✔	✔	✔	✔	✔

1.3. User roles/rights in the Administration Center

The login and password that were provided to you enable you to get through the authentication page and access *Talend Administration Center*. Then, as an Administrator, you can define the roles and rights of all other users.

The table below describes the user roles/rights in *Talend Administration Center*. It details what menus and menu items in the Administration Center each type of user role can have access to and what type of access (read-write or read-only).

Note that modification of roles and rights of a user assigned to a project is taken into account after next startup, if this user is already connected to the project.

Menu/Menu item	Rights/Roles				Description
	Administrator	Operation manager	Designer	Viewer	
Licenses	w	-	-	-	View license information and set new license and token
Configuration	w	w	r	-	Configuration page
Users	w	-	-	-	Users page

Menu/Menu item	Rights/Roles				Description
	Administrator	Operation manager	Designer	Viewer	
Projects	w	r (following project authorization)	r (following project authorization)	-	Projects, reference projects and authorizations
Locks	-	r/w (following project authorization)	-	-	
Rights Management	w	-	-	-	Page that allows the administrator to restrict some rights to some roles
Backup	w	-	-	-	Page that allows the administrator to schedule a backup of a database or SVN repository
Notifications	w	w	-	-	
Software update	w	-	-	-	
Servers	-	w	r	r	Servers, virtual servers and assignments
Job Conductor	-	r/w (following project authorization)	r (following project authorization)	r (following project authorization)	Tasks, triggers
Big Data Streaming	-	r/w (following project authorization)	r (following project authorization)	r (following project authorization)	Tasks
ESB Conductor	-	r/w (following project authorization)	r	-	Tasks
Publisher	-	r/w (following project authorization)	r	-	Tasks, triggers
Execution Plan	-	r/w (following project authorization)	r (following project authorization)	r (following project authorization)	
Monitoring	-	r/w (with rights to create connection, following project authorization)	r	-	Jobs, tasks execution monitoring, CommandLine
Audit	-	r/w (following project authorization)	w (following project authorization)	r (following project authorization)	
BRMS (Drools)	-	r/w (following project authorization)	w	-	Drools handles specific right management
Service Locator	-	r/w (following project authorization)	r	-	
Service Activity Monitoring	-	r	r	-	
Authorization	-	r/w (following project authorization)	r	-	
Service Registry	-	r/w (following project authorization)	r	-	

Menu/Menu item	Rights/Roles				Description
	Administrator	**Operation manager**	**Designer**	**Viewer**	
Studio	-	r	r/w (following project authorization)	r (following project authorization)	
Repository Browser	-	r/w (following project authorization)	r/w (following project authorization)	r (following project authorization)	

w: read/write access

r: read only access

-: no access

Note that:

- Any user with r (read-only) rights is able to generate, deploy and execute Jobs in *Talend Administration Center*.
- The second person pronoun "you" used through out the document addresses the user of *Talend Administration Center* depending on his/her roles and rights and not any generic user of the Administration Center.

For more information about the pages you can access through each menu item, see *What modules and features are available depending on your license* .

1.4. What domains can you work in depending on your user type and license

The license used in *Talend Administration Center* enables an administrator to create and administrate projects and users of different types, according to this license and the actual requirements. For more information about license settings, see *Accessing the Administration Center for the first time* and *Managing licenses*.

The table below describes what you can do in your product according to your user type and licence:

	Talend Data Fabric	**Talend MDM Platform**	**Talend Real-Time Big Data Platform**	**Talend Data Services Platform**	**Talend Big Data Platform**	**Talend Data Management Platform**	**Talend Big Data**	**Talend Data Integration**	**Talend ESB**
Master Data Management user	Master Data Management + Data Quality + Data Integration + ESB + Big Data	Master Data Management + Data Quality + Data Integration + ESB							
Data Quality user	Data Quality + Data Integration + ESB + Big Data	Data Quality + Data Integration + ESB	Data Quality + Data Integration + ESB + Big Data	Data Quality + Data Integration + ESB	Data Quality + Data Integration + ESB + Big Data	Data Quality + Data Integration + ESB			
Data Integration/ ESB user	Data Integration + ESB + Big Data	Data Integration + ESB	Data Integration + ESB + Big Data	Data Integration + ESB	Data Integration + ESB + Big Data	Data Integration + ESB	Data Integration + Big Data	Data Integration	ESB

	Talend Data Fabric	**Talend MDM Platform**	**Talend Real-Time Big Data Platform**	**Talend Data Services Platform**	**Talend Big Data Platform**	**Talend Data Management Platform**	**Talend Big Data**	**Talend Data Integration**	**Talend ESB**
Data Preparation user	Data Preparation	Data Preparation	Data Preparation	Data Preparation	Data Preparation	Data Preparation	Data Preparation	Data Preparation	Data Preparation

Furthermore, in a Studio, users will not be able to access the projects unless they are using the appropriate license and have acquired the project authorization from the administrators.

For more information about user and project management in *Talend Administration Center*, see *Managing Users*, *Managing projects*, and *Managing project authorizations*.

Chapter 2. Getting started with Talend Administration Center

Talend Administration Center is a web-based application delivered with one default Administrator account.

This account enables the administrator to:

- create, delete and edit all *Talend Studio* users and projects.
- monitor and schedule remote job executions.

Talend Administration Center is also delivered with one default configuration account which enables you to manage your system applications and database connection.

Any user account registered in *Talend Administration Center* accesses a limited version of the Administration Center to manage login information or access the monitoring and execution scheduling console.

2.1. Prerequisites

Check that:

- The remote repository is created on a dedicated Git or SVN server.
- The *Talend Administration Center* web application is deployed on an application server.

  For more information, see the section about compatible application containers in the *Talend Installation Guide*.
- A login and password, and a license key have been provided to you, allowing the Administrator to get through the authentication page and access to *Talend Administration Center*. For more information regarding user roles and rights in the Administration Center, see *User roles/rights in the Administration Center*.

  After the first connection, it is strongly recommended not to use the default user account to access the application for security reasons. You can either change the default credentials of this account (*admin@company.com*/*admin*) or create another administrator user and remove the default account.
- Since *Talend Administration Center* is a web-based application, you need a web browser to be able to run it.

  For more information, see the section about compatible web browsers in the *Talend Installation Guide*.

For more information regarding other installation requirements, check the *Talend Installation Guide*.

2.2. Accessing the Administration Center

- After the first connection, it is strongly recommended not to use the default user account to access the application for security reasons. You can either change the default credentials of this account (*admin@company.com*/*admin*) or create another administrator user and remove the default account.
- If you want to change the default password that allows you to change the database configuration, you have to edit the `database.config.password` parameter value in the *configuration.properties* file. For more information, see the *Talend Installation Guide*.

To access the Administration Center, do the following:

1. In the address bar of your web browser, type in or paste the URL address corresponding to the location of *Talend Administration Center*.

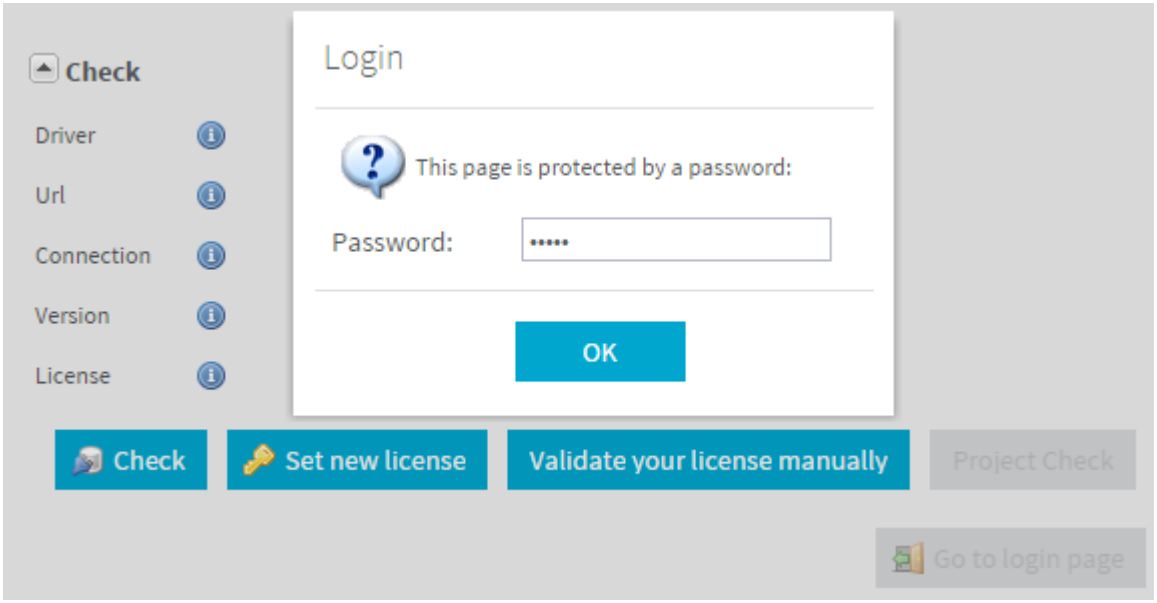
   For example: *http://localhost:8080/org.talend.administrator*
2. Press **Enter** to display *Talend Administration Center*.

2.2.1. Accessing the Administration Center for the first time

When you access *Talend Administration Center* for the first time, you will have to complete checking steps before being able to log in.

1. When you access *Talend Administration Center* for the first time, type in the administrator password (by default, it is *admin*) in the **Database Configuration** page and click **OK**.

After the first connection, it is strongly recommended not to use the default user account to access the application for security reasons. You can either change the default credentials of this account (*admin@company.com*/*admin*) or create another administrator user and remove the default account.



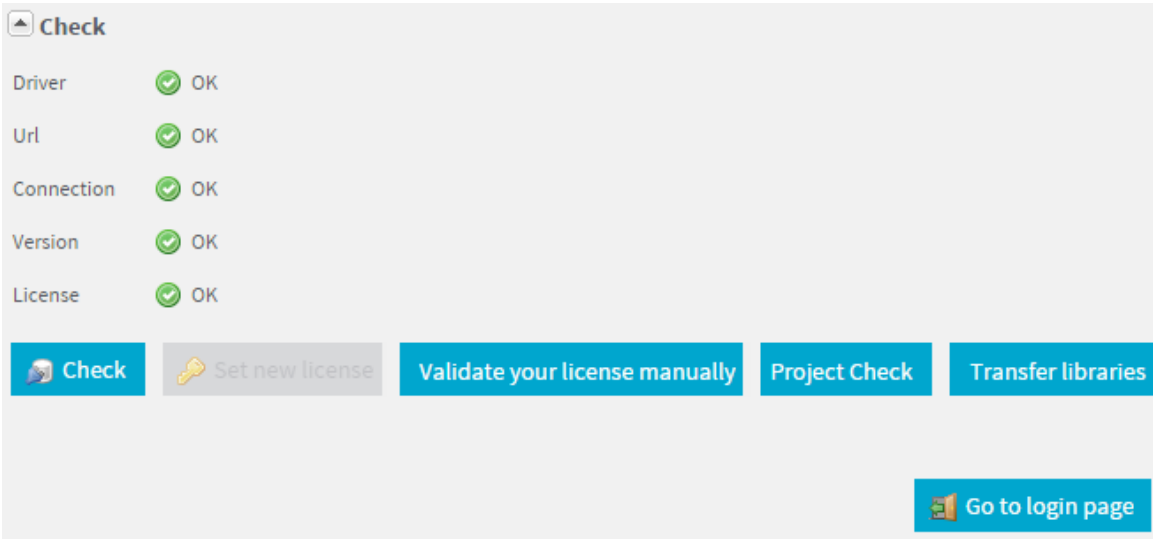
2. Upon validation of your password, *Talend Administration Center* runs a series of checks. If no license or an invalid license is found, you will be prompted to specify a license. Click the **Set new license** button.

3. Click **Browse** to browse to your license file and click **Upload**.

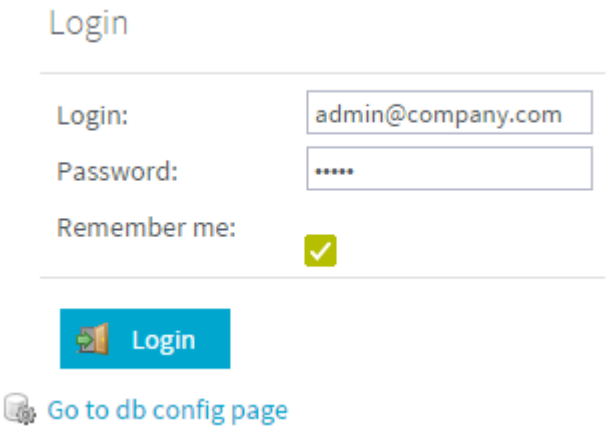
   The license determines the types of users and projects you can manage as an administrator in *Talend Administration Center*. For more information, see *What domains can you work in depending on your user type and license*.

4. Upon validation of your license, *Talend Administration Center* runs a series of checks again, and displays the following options:

   - **Set new license**: allows you to set a new license by repeating the previous step.
   - **Validate your license manually**: allows you to validate the loaded license. For more information, see *Generating a validation request*.
   - **Project Check**: allows you to migrate existing projects to your new *Talend Administration Center*.
   - **Transfer libraries**: allows you to move external libraries stored on SVN or Nexus to the official Nexus repository where libraries are stored. For more information, see *Migrating external libraries*.
   - **Go to login page**: allows to you to open the login page to log in to the *Talend Administration Center*.



5. Click **Go to login page** and type in the login and password provided by **Talend** in the **[Login]** dialog box.



By default, the **Remember me** check box is selected so that you can directly log in to *Talend Administration Center* the next time without having to enter the password again. If you are using a public computer, however, we recommend that you clear this check box for enhanced security.

6. Click the **Login** button.

   Talend Administration Center opens up on a welcome page.

   The menus and menu items shown vary according to the edition of *Talend Administration Center* currently in use. They also vary according to your role, whether you are an Administrator, Operation manager, Designer or Viewer.

2.2.2. Migrating external libraries

If you migrate to a newer *Talend Administration Center* application, it is recommended to transfer the shared external libraries that were stored in another repository to the pre-configured Nexus repository --called *talend-custom-libs-release* that is embedded in the *Talend Administration Center* archive file.

- If you migrate from a version 5.x to a version 6.x, you need to move the libraries from your Subversion libraries repository to the new *talend-custom-libs-release* Nexus repository.
- If you migrate from version 6.0, 6.1 or 6.2, you need to move the libraries from the *talend-custom-libs* Nexus repository to the new *talend-custom-libs-release* Nexus repository.

If so, you need first to execute the Nexus migration script that is embedded in the *Talend Administration Center* archive file. For more information, see the *Talend Migration Guide*.

From Subversion to Nexus

1. Go to the *Talend Administration Center* **Database configuration** page.
2. Click **Transfer libraries** to open the **[Transfer libraries]** window, select the **SVN to Nexus** tab and fill in the connection information to the Subversion repository where your libraries are stored.

   The connection information to the new Talend Nexus repository (*talend-custom-libs-release*) are filled in by default.
3. Click **Transfer** to start the migration of your libraries. A progress bar indicates the status of the migration, and a message is displayed to confirm the migration success.

   Your external libraries are now stored in the Talend Nexus repository.

From Nexus to Nexus

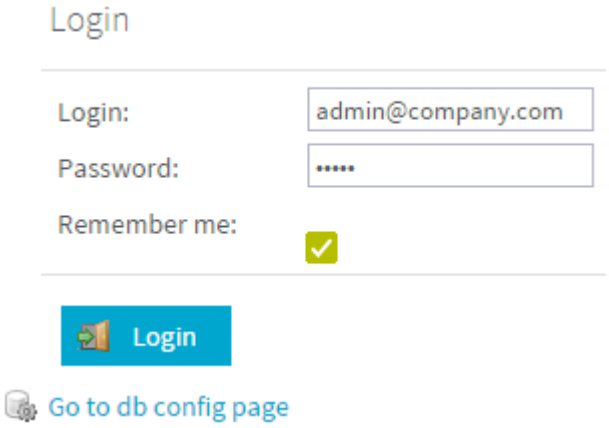
1. Go to the *Talend Administration Center* **Database configuration** page.
2. Click **Transfer libraries** to open the **[Transfer libraries]** window, select the **Nexus to Nexus** tab and fill in the connection information to the Nexus repository where your libraries are stored.

   The connection information to the new Talend Nexus repository (*talend-custom-libs-release*) are filled in by default.
3. Click **Transfer** to start the migration of your libraries. A progress bar indicates the status of the migration, and a message is displayed to confirm the migration success.

   Your external libraries are now stored in the Talend Nexus repository.

2.2.3. Logging in to a previously configured Administration Center

1. Open a Web browser and navigate to the *Talend Administration Center* URL address.
2. In the **[Login]** window, type in the login and password provided by *Talend*.



By default, the **Remember me** check box is selected so that you can directly log in to *Talend Administration Center* the next time without having to enter the password again. If you are using a public computer, however, we recommend that you clear this check box for enhanced security.

3. Click the **Login** button.

   Talend Administration Center opens up on a welcome page.

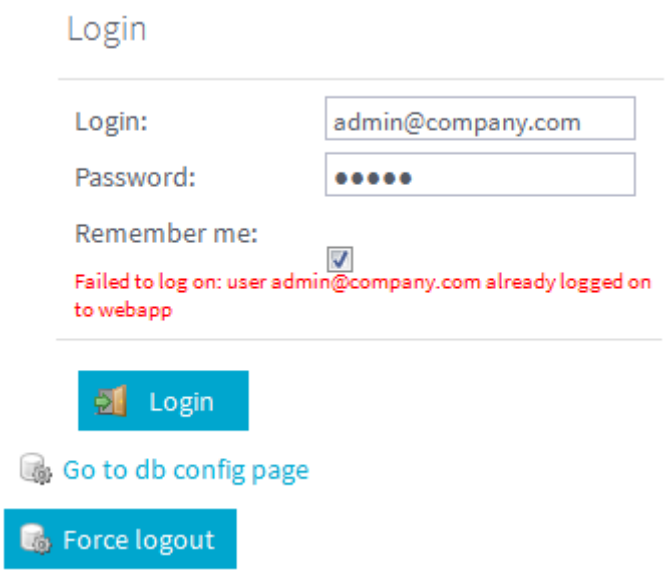
   The menus and menu items shown vary according to the edition of *Talend Administration Center* currently in use. They also vary according to your role, whether you are an Administrator, Operation manager, Designer or Viewer.

2.2.4. Logging in when your login is already in use

If you or another user have already logged in using the same authentication information, a **Force logout** button displays on the **[Login]** window along with a corresponding error message.

Prerequisite: In the **Login Page** node of the **Configuration** page, the **Enable Force logout** option has been set to **true**.

1. Click **Force logout** to log out the previous session.
2. Click **Login** to be able to log in to the Administration Center successfully.



2.2.5. Logging off the Administration Center

Click the **Logout** button at the bottom of the tree view of *Talend Administration Center* to log off from the active session. To log on again, fill in your authentication details.

2.2.6. Resetting your password

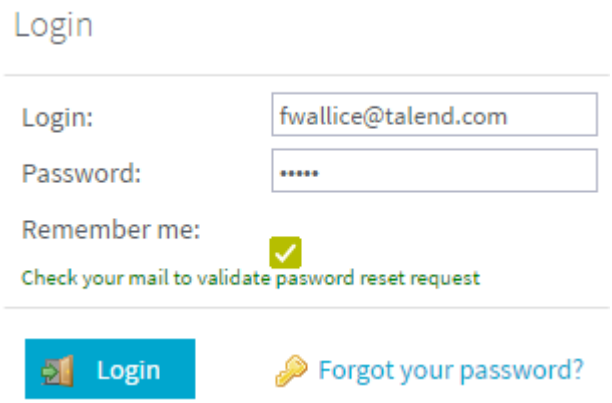
Send a new password by email (with an SMTP protocol)

If you forgot your connection password to *Talend Administration Center*, you can perform on of the following operations to send an email holding a link to a password resetting form:

- click the **Forgot your password?** button. To activate this option and display the button, you have to activate an SMTP protocol in the **Configuration** page of *Talend Administration Center*. For more information on how to configure the SMTP protocol, see *Setting up an SMTP protocol*. If this **Forgot your password?** button does not display even though you activated SMTP, it can mean that this option has not been activated at installation time. In this case, contact your Administrator who will be able to enable it from the *configuration.properties* file. For more information about the *configuration.properties* file, see the *Talend Installation Guide*.

- use the `resetPassword` the MetaServlet application For more information on MetaServlet, see *Non-GUI operation in metaServlet*.

1. In the **[Login]** window, click **Forgot your password?**.



   An informative message is displayed on the **[Login]** window and the email with the new password is sent to the email address specified in the **Login** field.

2. With this new sent password, log in to *Talend Administration Center* again and define a new customized password in the **Users** page. For more information about the **Users** page, see *Changing user passwords*.

Set the password to *admin* again (without SMTP protocol)

If you have not configured an email server, you can execute an SQL statement in the application database to set the user password to *admin* again.

1. Open the database web console. To do so, go to the **Configuration** page of *Talend Administration Center*, expand the **Database** node and click the URL next to the **Web Console** field.

2. In the database, execute the following statement:

   ```
   UPDATE `user` set `password`=0x21232F297A57A5A743894A0E4A801FC3 where id =<userID>;
   ```

   where `0x21...` corresponds to the encrypted password *admin*.

   Note that you can find the ID (number) corresponding to the user for which you want to edit the password by executing this statement:

   ```
   select id, login from user;
   ```

3. With this new password, log in to *Talend Administration Center* again and define a new customized password in the **Users** page.

   For more information about the **Users** page, see *Changing user passwords*.

   For more information about the advanced configuration you can perform on the *Talend Administration Center* database, see the *Talend Installation Guide*.

2.3. Configuring *Talend Administration Center*

Only users that have the Administrator or Operation Manager role and rights can have the read-write access to this page. Other users, depending on their roles, can have either the read-only access or no access to this page. For further information on access rights, see User roles/rights in the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the appropriate authorization by the Administrator.

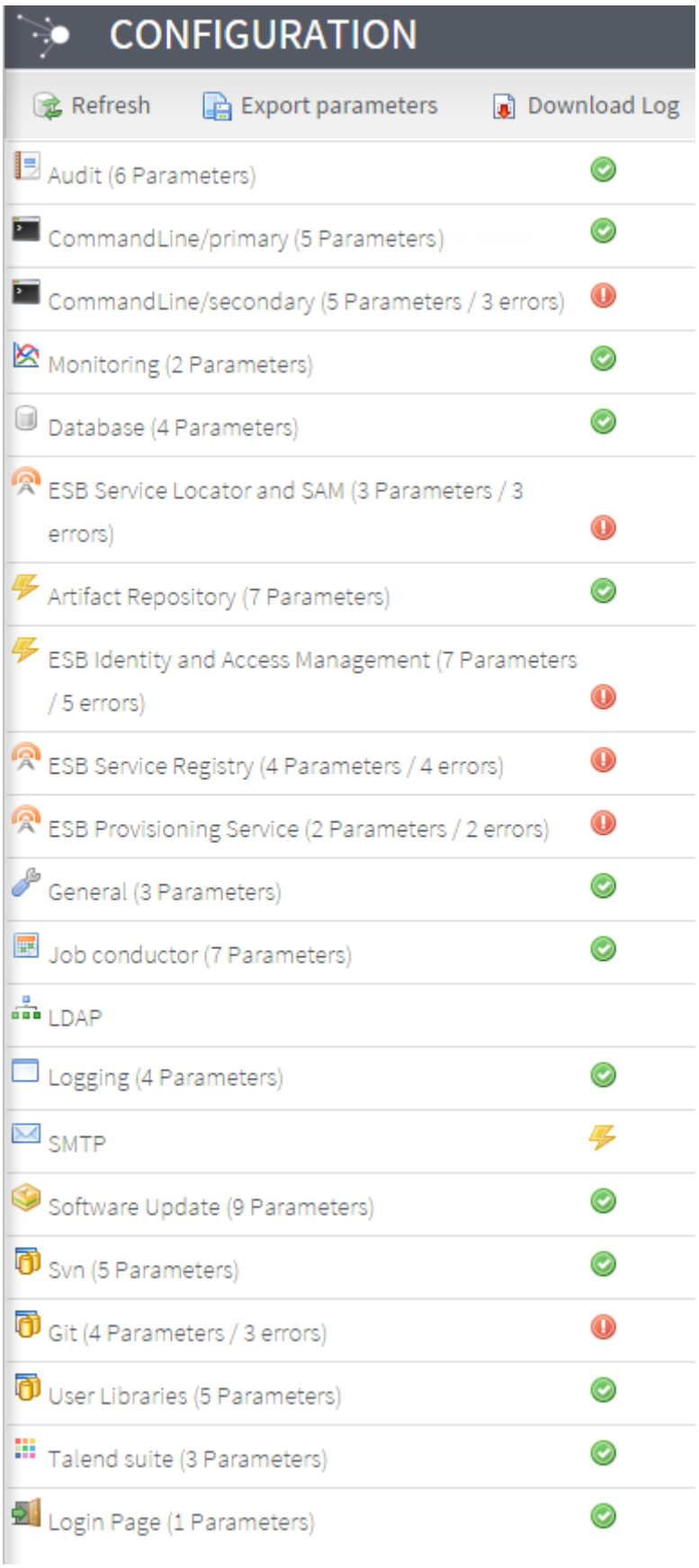
From *Talend Administration Center* home page, you can access the **Configuration** page that offers accurate details on application parameters and their related values including database connection. The items displayed in this page depend on your license. Thus, some of the sections below may refer to modules that are not available in your *Talend Administration Center* application.

To find out if you have access to the different modules described in the sections below, please refer to *What modules and features are available depending on your license* .

2.3.1. Accessing the Configuration page

The **Configuration** page offers accurate details on application parameters and their related values including database connection. All these parameters are grouped by module. This helps understand and troubleshoot module-related problems.

To access the **Configuration** page, click **Configuration** in the **Menu** tree view. The figure below illustrates an example.



The second column in the configuration tabular list indicates whether a parameter is correctly set up or empty or wrong.

The same icons appear as well in front of the group titles. They indicate whether the corresponding module is up and running and well configured or if it contains any wrong parameter or is simply down .

From this page, you can:

- detect system problems and cut down repair time.
- check for database connection and recover system parameters. For more information, see *Setting up the CommandLines' parameters* and *Checking the database connection details*.
- edit the value of the parameter in question directly in the list by clicking the icon if it shows next to the parameter value, or
- export all system parameters, including database connection details, using the **Export parameters** button on the toolbar.
- download log file(s) from your **Administration Center**. In case of issue with *Talend Administration Center*, click **Download log** on the toolbar and save the zip containing the log file(s) so that you could send them to **Talend Support** later.

For more information on how to import/export system parameters, check the relevant section in the *Talend Installation Guide*.

2.3.2. Configuring parameters according to your system

The parameters described in the following sections do not follow the same order as the application interface (which is alphabetical) because they are sorted in order of importance, from essential to optional. It it thus recommended to follow this order when configuring your application.

2.3.2.1. Setting up SVN or Git parameters

Your project metadata is either stored in Subversion or Git. If you are using a SVN/Git repository, you can modify the location URL, user and password from *Talend Administration Center*.

When you will connect to a remote repository in the Studio, you will have to enter the URL of your *Talend Administration Center* in the **Web-app URL** field so that the Studio can retrieve these parameters.

Prerequisites:

- the repository is on the Subversion/Git server and you have copied its URL.

  For Git users:

  - it is recommended to check via `git bash` that the repository is accessible, that you can push your changes on it and, if you use SSH, that the host is known.
  - all branches/tags are visible for all projects on the same Git repository. Therefore, if you create some branches/tags for one project, all other projects on the same Git repository will have the same list of branches and tags.
- the SVN/Git username and password correspond to an existing user in Subversion/Git.

  For Git users: note that the SSH key passphrase feature is not supported in this release of *Talend Administration Center*.

1. On the **Menu** tree view, click **Configuration**.
2. Click the **Svn** or **Git** group to display its parameters.

   The following parameters are editable according to your use:

Parameter	Value
Branches whitelist	Select **True** or **False** in the list. This function allows you to filter the project on the defined SVN/Git branches or tags in order to reduce the use of disk resources and improve performances. For more information, see To create a Git or SVN Branch white list.
Server location url / **Git server url**	Type in the location URL to your Subversion/Git server repository.
Username	Type in the name of the Subversion/Git user.
Password	Type in the password of the Subversion/Git user.
Commit Log Pattern	Define the Subversion/Git commit log pattern according to your log format convention. For more information about commit log patterns, see the *Talend Studio User Guide*. The log pattern will be automatically applied to all commit logs, except user logs if the **Svn user log option** is activated (SVN only). For more information about this option, see *Adding a project*. Example: the pattern `start {0} end` will add the word `start` before the log message body and `end` after the log message body. The default pattern is `{0}`, namely no leading or trailing information is added to any log message.

   These parameters are usually set up when installing the product, so, for more information, see the relevant section of *Talend Installation Guide*.

2.3.2.2. Setting up the user library location

Some specific third-party Java libraries or database drivers (*.jar* files), known as external modules, can be required by some components or by some connection wizards. Due to license restrictions, may not be able to ship certain external modules within *Talend Studio* but allows you to download, install and store them in a shared repository (either SVN, or Nexus which is delivered with the *Talend Administration Center* archive file).

Note that, if you are working in collaborative mode and you do not fill these parameters, the external libraries that you have downloaded at Studio start-up will not be shared and thus the other users of *Talend Administration Center* will not be able to use CommandLine to generate their Jobs. Additionally, if you migrate to a more recent version of *Talend Administration Center*, those required libraries will not be backed up.

Finally, note that for users with **Designer** role to have access to user libraries configuration, they need to have the corresponding **Configuration visualization** right selected on the **Rights management** page. For more information, see *Managing rights associated with roles*.

For more information about these external libraries, see the *Talend Installation Guide*.

1. On the **Menu** tree view, click **Configuration**.
2. Click the **User Libraries** group to display its parameters.

   The following parameters are editable according to your use:

Parameter	Value
Libraries Repository	Select the repository where the external libraries will be stored. It is either NEXUS (recommended) or SVN.

Parameter	Value
Library location url	Type in the location URL to the Nexus repository/SVN directory where the external libraries downloaded at Studio start-up are stored. By default, it is *http://localhost:8081/nexus* on Nexus. IMPORTANT: If you use Subversion, this directory must be created outside the repository in which your projects are stored.
Library username	Type in the name of the Nexus/Subversion user which has access to the libraries repository. By default, it is *talend-custom-libs-admin* on Nexus.
Library password	Type in the password of the Nexus/Subversion user which has access to the libraries repository. By default, it is *talend-custom-libs-admin* on Nexus.
Repository ID	Type in the repository ID in which libraries will be stored. By default, it is *talend-custom-libs* on Nexus.

2.3.2.3. Setting up the CommandLines' parameters

From *Talend Administration Center*, you can set the parameters of two Commandlines: host, port, archive path and the user component path. To ensure failover, the second CommandLine is used when the first one is down. To set the parameters of the CommandLines, complete the following:

1. On the **Menu** tree view, click **Configuration**.
2. Click the **CommandLine** group to display the parameters.

   The following parameters are editable as required:

Parameter	Value
Host	Type in the IP address of the CommandLine.
Port	Type in the port number on which the CommandLine will be queried.
Job generation folder	Type in the path to the folder where you want your jobs to be generated.
User component path	If you are using user components, copy them in a folder on your CommandLine server, then type in the path to this folder in this field. If you are not using user components, leave this field blank.
Version	This field allows you to check whether the CommandLine version is the same as the database version.

A message will display in the **CommandLine** header page, indicating to which CommandLine you are connected and if your CommandLines are down.

2.3.2.4. Setting up the Job Conductor parameters

When deploying and executing tasks in *Talend Administration Center*, multiple files are created and stored locally. These files include the Job archives, execution, recovery and deployment logs. From *Talend Administration Center*, you can modify the path to those log files. To do so, proceed as follows:

1. On the **Menu** tree view, click **Configuration**.
2. Click the **Job Conductor** group to display its parameters.

The parameters are the following:

Parameter	Value
Generated jobs folder	Type in the path to the folder containing the Job execution archives, grouped by execution tasks.

Parameter	Value
Task logs folder	Type in the path to the folder containing the Job execution logs, grouped by execution tasks.
Number of execution logs	Enter how many execution log files (of all Jobs) you want to store in the dedicated folder. This value prevails over the value of the 'Maximum age of log file(d)' field.
Maximum age of log file(d)	Enter how long the log files of all Jobs will be kept, in days, before they are removed.
Maximum number of generated jobs	Enter how many generated Job archives you want to store in the dedicated folder. This value prevails over the value of the 'Maximum age of generated job(d)' field.
Maximum age of generated job(d)	Enter how long the generated Job archives will be kept, in days, before they are removed.
Quartz servlet	Shows the status of the Job Conductor. It can be **Initialized** or **Not initialized**.

2.3.2.5. Setting up the ESB parameters

If your license includes the ESB option, you need to configure several parameters to make the best use of the corresponding features.

Setting up the ESB Service Locator and Service Activity Monitoring parameters

From *Talend Administration Center*, you can set the parameters of Service Locator and Service Activity Monitoring.

- Service Locator provides service consumers with a mechanism to discover service endpoints at runtime.
- Service Activity Monitoring is a monitoring server for your services.

1. On the **Menu**, click **Configuration**.
2. Click the **ESB Service Locator and SAM** group to display the parameters.

   The following parameters are editable as required:

Parameter	Value
Service Locator Server(s)	Type in the URL to the Service Locator server(s) and the credentials to access the server(s) when authentication is enabled. If there are multiple servers, separate them with a comma, for example: *192.168.0.1:2181,192.168.0.2:2181;user=tesb;password=tesb*
Service Activity Monitoring Server	Type in the URL to the Service Activity Monitoring server.
Authentication Type	The authentication required on the Service Activity Monitoring server end. The types available are **None**, and **Basic**.
Username	Type in the username to connect to the Service Activity Monitoring server if the authentication type is **Basic**.
Password	Type in the password to connect to the Service Activity Monitoring server if the authentication type is **Basic**.

Setting up the ESB Identity and Access Management

To be able to authorize the Resources to the Roles and Users created in the Talend Identity Management Service from the Authorization page, you need to have properly installed and configured it, and set up the XACML Policy registry.

For more information about the installation of Talend Identity Management Service, see the *Talend Installation Guide*. For how to use Talend Identity Management Service, and how to set up the XACML Policy registry, refer to *Talend ESB Infrastructure Services Configuration Guide*.

1. On the **Menu** tree view, click **Configuration**.
2. Click the **ESB Identity and Access Management** group to display its parameters.

   The parameters are the following:

Parameter	Value
Identity Service URL	Type in the location URL to your Identity Service. The default is *http://localhost:8080/syncope-console*.
Identity Service Rest URL	Type in the Rest interface URL of your Identity Service for the Administration Center to get the user data. The default is *http://localhost:8080/syncope/cxf*.
Authentication Type	The authentication type is **Basic** by default.
Identity User	Type in the username to connect to your Identity Service. The default is *admin*.
Identity Password	Type in the password to connect to your Identity Service. The default is *password*.
Authorization (PAP) URL	The URL of the XACML Policy Registry to retrieve policies from. The default is *http://localhost:8040/services/XacmlRegistryAtom*.

Setting up the ESB Service Registry

To be able to manage services, policies and their relations in the **Service Registry** page, you need to have properly set up the registry and the Service Registry feature. For how to set up the Service Registry, refer to *Talend ESB Infrastructure Services Configuration Guide*.

1. On the **Menu** tree view, click **Configuration**.
2. Click the **ESB Service Registry** group to display its parameters.

   The parameters are the following:

Parameter	Value
Service Registry API	The URL of the Service Registry interface. The default is *http://localhost:8040/services/registry/admin*.
Authentication Type	The authentication required on the Service Registry server end. The types available are **None**, and **Basic**.
Username	Type in the username to connect to the Service Registry if the authentication type is **Basic**.
Password	Type in the password to connect to the Service Registry if the authentication type is **Basic**.
Lookup Service	The URL of the Lookup Service interface. The default is *http://localhost:8040/services/registry/lookup*.
Authentication Type	The authentication required by the Lookup Service. The types available are **None**, and **Basic**.
Username	Type in the username to connect to the Lookup Service if the authentication type is **Basic**.
Password	Type in the password to connect to the Lookup Service if the authentication type is **Basic**.

Setting up the ESB Provisioning Service

To be able to distribute features and resources, and configure your Talend Runtimes more easily via the **Provisioning** page, you need to have properly set up the **Provisioning Service** feature. For how to set up the **Provisioning Service**, refer to *Talend ESB Infrastructure Services Configuration Guide*.

1. On the **Menu** tree view, click **Configuration**.
2. Click the **ESB Provisioning Service** group to display its parameters.

The parameters are the following:

Parameter	Value
Provisioning Service API	The URL of the **Provisioning** interface. The default is *http://localhost:8040/services/provision/admin*.
Authentication Type	The authentication required on the **Provisioning Service** server end. The types available are **None**, and **Basic**.
Username	Type in the username to connect to the **Provisioning Service** if the authentication type is **Basic**.
Password	Type in the password to connect to the **Provisioning Service** if the authentication type is **Basic**.

2.3.2.6. Setting up the Artifact Repository parameters

To retrieve all the artifacts published in the artifact repository and configure their execution, you have to connect your *Talend Administration Center* to the Nexus artifact repository.

For more information about how to install the artifact repository, see the *Talend Installation Guide*.

Nexus is based on Sonatype Nexus. For more information on how to use it, see Sonatype Nexus's documentation on http://www.sonatype.org/nexus.

1. On the **Menu** tree view, click **Configuration**.
2. Click the **Artifact Repository** group to display its parameters.

   The parameters are the following:

Parameter	Value
Artifact repository type	Select the type of artifact repository (NEXUS). This artifact repository is embedded within the *Talend Administration Center* archive. For more information on how to configure this artifact repository in the Studio and in Talend Runtime, see the *Talend Installation Guide*.
Nexus/Artifact repository url	Type in the location URL to your repository, *http://127.0.0.1:8081/nexus* by default.
Nexus/Artifact repository username	Type in the username to connect to your repository. By default, it is *admin* for the Nexus artifact repository.
Nexus/Artifact repository password	Type in the password to connect to your repository. By default, it is *Talend123* for the Nexus artifact repository.
Nexus/Artifact Default Release Repo	Type in the name of the repository into which to publish the Release version of your artifact item by default. By default, it is *releases* for the Nexus artifact repository.
Nexus/Artifact Default Snapshot Repo	Type in the name of the repository into which to publish the Snapshot version of your artifact item by default. By default, it is *snapshots* for the Nexus artifact repository.
Nexus/Artifact Default Group ID	Type in the name of the group in which to publish your artifact item by default.

2.3.2.7. Setting up the link to the Monitoring modules

From *Talend Administration Center*, you can access the monitoring modules that allow you to monitor your Jobs and projects (**Activity Monitoring Console** page) and to display the logged events (**Logging** page).

The Talend Activity Monitoring Console application is integrated both within the Studio and within the Web application. For more information about this application and its operation, see the *Talend Activity Monitoring Console User Guide*.

To set up the parameters of these modules, proceed as follows:

1. In the **Menu** tree view, click **Configuration**.
2. Click the **Monitoring** node to display the parameters.

The following parameter is editable according to your needs:

Parameter	Value
AMC url	Type in the URL address of the Activity Monitoring Console application, *http://localhost:8080/amc* for example.  *"http://localhost:8080/amc" is only given as example. Depending on your configuration, you may have to replace <localhost> with the IP address of the Web server application and <8080> with its actual port.*
Kibana url	Type in the URL address of the Kibana application, *http://localhost:8080/kibana* for example.  *"http://localhost:8080/kibana" is only given as example. Depending on your configuration, you may have to replace <localhost> with the IP address of the Web server application and <8080> with its actual port.*

2.3.2.8. Setting up the Logging parameters

In *Talend Administration Center*, there are two types of collected logs:

- the technical logs, that gather technical events like the status of connections and servers, and so on.
- the business logs, that gather all users' actions, like the creation, connection, deletion, and edition of a user, a Job and so on.

Those logs are collected by Logstash and displayed on the **Logging** page thanks to the Kibana Web application whose URL needs to be configured in the **Monitoring** node of the **Configuration** page as explained in *Setting up the link to the Monitoring modules*. For more information about the extended logging module, see *Displaying log events*.

You can modify the log file paths and threshold. To do so, complete the following:

1. On the **Menu** tree view, click **Configuration**.
2. Click the **Logging** group to display its parameters.

The parameters are editable according to your use:

Parameter	Value
Technical log file path	Type in the path to the technical log file of *Talend Administration Center*. The specified folder must exist. For example, if you enter *c:/logs/technical.log*, the *technical.log* file will be created in the existing *c:/logs* folder.  If no path has been set or if the path is invalid, the technical logs will be appended in Tomcat logs.
Technical log threshold	Select the level of logs you want to append between DEBUG, INFO, WARN, and ERROR from the drop-down list.

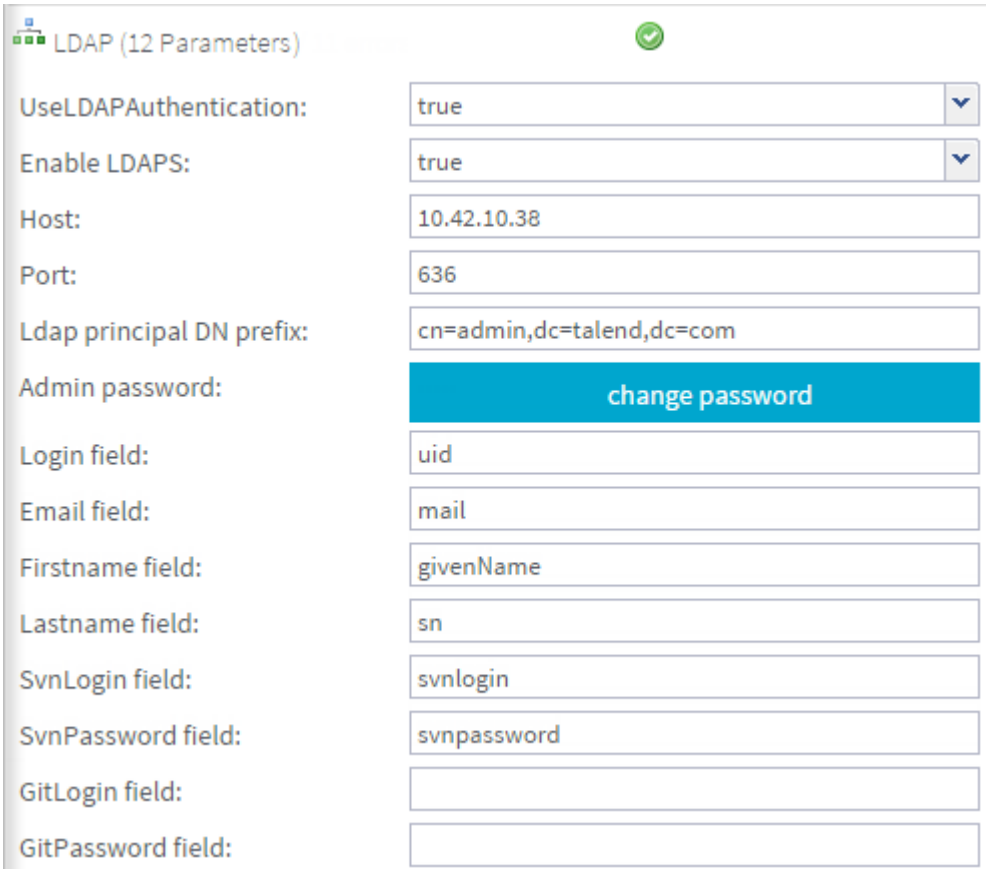
Parameter	Value
Business log file path	Type in the path to the business log file of *Talend Administration Center*. The specified folder must exist. For example, if you enter *c:/logs/business.log*, the *business.log* file will be created in the existing *c:/logs* folder. If no path has been set or if the path is invalid, the business logs will not be recorded.
Logstash host and port	Type in the host and port corresponding to the Logstash instance. By default, it is *localhost:8050*. This field automatically turns green when the Talend Logserver is launched.

You can also do this manually by editing the *log4j.xml* file. For information related to this Log4j file, see the relevant section in the *Talend Installation Guide* and for more information on how to enable and customize the log4j feature from the Studio, see the *Talend Studio User Guide*.

2.3.2.9. Setting up an LDAP(S) protocol

If you use an LDAP or LDAPS directory to list your resources, in particular your personnel, you can use this directory to authenticate the **Administration Center** users. For more information on how to configure the keystore for LDAPS, see the *Talend Installation Guide*.

1. On the **Menu**, click **Configuration** and then click the **LDAP** group to display the parameters. Note that the data displayed in the capture below is used as an example, and that the field values must correspond to the values defined in your LDAP configuration.



2. Set the parameters as the following:

Parameter	Value
UseLDAPAuthentication	Select *true* to activate LDAP authentication or *false* to deactivate it from the drop-down list.

Parameter	Value
Enable LDAPS	Select *true* to activate LDAP over SSL (LDAPS) authentication or *false* to deactivate it from the drop-down list. For more information on how to configure the keystore for LDAPS, see the *Talend Installation Guide*.
Host	Type in the IP address and the host of the LDAP server.
Port	Type in the port of the LDAP server.
Ldap principal DN prefix	Type in the login of the user who has the right to search on the specified root or branch.
Admin password	Type in the password of the user who has the right to search on the specified root or branch.
Login field	Type in the name of the attribute representing the data that corresponds to the user's login. This field must correspond to the field defined in your LDAP configuration.
Email field	Type in the name of the attribute representing the data that corresponds to the user's Email. This field must correspond to the field defined in your LDAP configuration.
Firstname field	Type in the name of the attribute representing the data that corresponds to the user's Firstname. This field must correspond to the field defined in your LDAP configuration.
Lastname field	Type in the name of the attribute representing the data that corresponds to the user's Lastname. This field must correspond to the field defined in your LDAP configuration.
SvnLogin field / **GitLogin field**	Type in name of the attribute representing the data that corresponds to the user's SVN or GIT login. This field must correspond to the field defined in your LDAP configuration. If you use the LDAP system to handle the SVN and Git credentials, the recommended way is to edit these credentials through LDAP and not through the **Users** page as *Talend Administration Center* will automatically retrieve the changes done on these credentials.
SvnPassword field / **GitPassword field**	Type in name of the attribute representing the data that corresponds to the user's SVN or GIT password. This field must correspond to the field defined in your LDAP configuration. If you use the LDAP system to handle the SVN and Git credentials, the recommended way is to edit these credentials through LDAP and not through the **Users** page as *Talend Administration Center* will automatically retrieve the changes done on these credentials. For more information on how to manage encryption of the SVN password in *Talend Administration Center*, see the article Managing encryption of SVN passwords in LDAP for Talend Administration Center.

Once the LDAP authentication is activated, the creation of the user account in the **Users** page is modified. From now on, only the **Distinguished name** is required as the other information about the user is retrieved from the LDAP directory. This way, user's login and password used to connect to *Talend Administration Center* or to *Talend Studio* are those defined in the LDAP directory.

For more information on the creation of a user account using LDAP authentication system, see *How to add a user with LDAP*.

2.3.2.10. Setting up an SMTP protocol

On *Talend Administration Center*, you can get notified when an event occurs. To realize this feature, you should first set up the parameters of the email system which will send notifications to you.

1. On the **Menu** tree view, click **Configuration**.
2. Click the **SMTP** group to display the parameters.

The following parameters are editable according to your use:

Parameter	Value
Use SMTP	Select *true* to activate SMTP or *false* to deactivate it.

Parameter	Value
Host	Type in the IP address of your mail server.
Port	Type in the port of your mail server.
Require SSL	Select *true* if your email server uses an SSL authentication.
Username	Type in the email address that will be displayed as the sender information in the notification received by the recipients. Whether this field is optional depends on your local configuration of SMTP authentication. An anonymous user may be used to send notifications. By default, the first admin email address will be used.
Password	If your email server requires an authentication, type in the password corresponding to the mailbox that will send the notification. If your message server is anonymous, this field is optional.
From Address (optional)	Type in the SMTP *From* email address, *admin@company.com* for example. By default, if the field is empty, it is the value of the SMTP User Name that will be used.

Once the SMTP parameters are set up, you can configure the notifications that will be sent, from the **Notification** page. For more information on the notifications, see *Managing notifications*.

If one of the SMTP parameters is down, a warning will display at the top of the **Notification** page to inform the user that the notification might not work due to an SMTP server connection error.

2.3.2.11. Setting up Software Update parameters

From *Talend Administration Center*, you can edit the **Software Update** parameters.

The following parameters are editable according to your needs:

Parameter	Value
Talend update url	Location URL to the *Talend* remote repository from which software updates are retrieved, this field is filled by default.
Talend update username and **Talend update password**	Type in the credentials of the software update repository user that you received from *Talend*.
Local repository url	Type in the location URL to the repository where software updates are stored. By default, it is *http://localhost:8081/nexus/*.
Local deployment username and **Local deployment password**	Type in the credentials of the user with deployment rights to the local repository. By default, it is *talend-updates-admin/talend-updates-admin*.
Local reader username and **Local reader password**	Type in the credentials of the user with read rights to the local repository. By default, no credentials are required but you are free to define them if you want to disable public access to the repository.
Local repository ID	Type in the ID of the repository in which software updates are published. By default, it is *talend-updates*.

These parameters are usually set up when installing manually the software update repository. For more information, see the *Talend Installation Guide*.

For more information on checking updates via the artifact repository, see *Checking for updates*.

2.3.2.12. Enabling the 'Force Logout' option

In order to force the logging out of a user who is already connected to a session with its credentials, you need to enable this option. For more information, see *Logging in when your login is already in use*.

1. On the **Menu** tree view, click **Configuration**.

2. Click the **Login Page** to display the **Enable Force logout** parameter, and select the *true* value if you want to enable the option, or *false* if you want to disable it.

2.3.3. Checking the parameters configured by default

Some generic parameters are filled in by default in the **Configuration** page. The following sections describe how to display those parameters and edit them if needed.

2.3.3.1. Checking general information about Talend Administration Center

To check the general information of *Talend Administration Center*, do the following:

1. On the **Menu** tree view, click **Configuration**.
2. Click the **General** group to display the parameters.

   The following parameters are read only:

Parameter	Value
WepApp version	Version number of *Talend Administration Center*
Db model version	Model version number of the Database that should match the version number of *Talend Administration Center*.
Location	Url of *Talend Administration Center*

2.3.3.2. Checking the database connection details

All data related to project information and administration: administration data, user declaration and authorization, task list, trigger list, etc. are stored in a database. By default, this database is an H2 embedded database. But you can choose to store those data in another compatible database system (MySQL, MS SQL and Oracle). For more information about those *Talend Administration Center* database management systems, see the *Talend Installation Guide*.

From *Talend Administration Center*, you can display the database connection settings and status. To do so, complete the following:

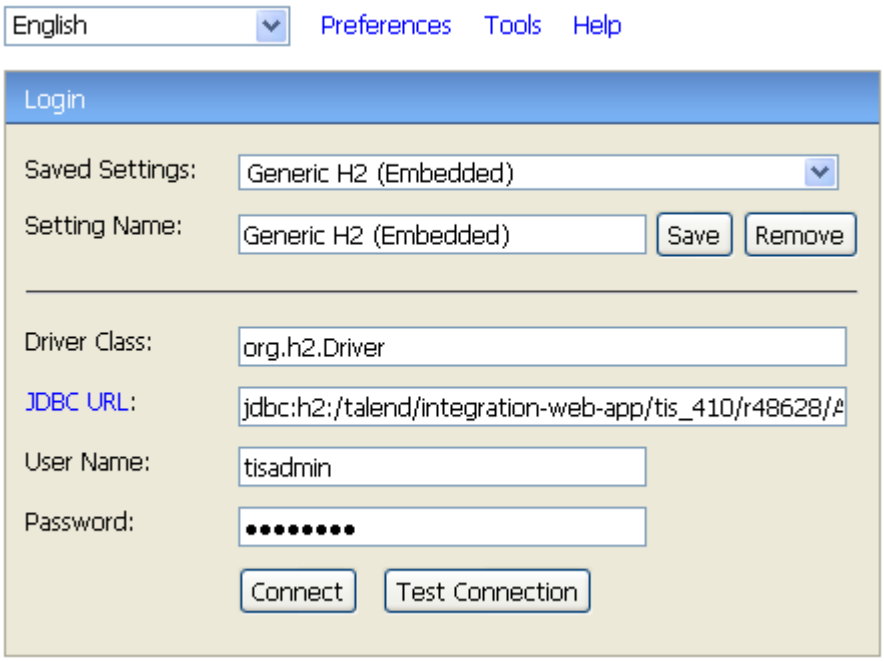
1. On the **Menu**, click **Configuration** click the **Database** group to display the parameters.

   The following parameters are read only:

Parameter	Value
Url	Url of the database in which all *Talend Administration Center* information is stored
User	Name of the administrator of the database
Driver	Driver of the *Talend Administration Center* database.
Web Console	URL of the H2 Web console  *This field will not display if you choose to store the data in another database system than the default H2 one.*

2. If you want to access the projects and administration data via the default Web console provided, click the **URL** of the **Web Console** field.

The following login page opens:



3. In the **Password** field, type in the connection password to the database, by default *tisadmin*.
4. Click **Connect**.

   A Web database administration page opens.

   If you choose another database system and find out that one of the parameters is wrongly set, you have to click the link **Go to db config page** from the **Login** page to access the **Database configuration** page that gives both database connection status and settings. This page is protected by a password, therefore you can click **Cancel** if you do not have this administrator password and want to go back to the **Login** page.

   For more information about logging in to *Talend Administration Center*, see *Accessing the Administration Center*.

   *If the **Go to db config page** link on the **Login** page is hidden, you need to activate it from the configuration.properties file. For more information, see the Talend Installation Guide. Moreover, you can modify database connection information directly from the configuration.properties file.*

   For more information on how to set, import or export database connection details, check the relevant section in the *Talend Installation Guide*.

2.3.3.3. Checking the configuration for audit

The parameters used for driving audit and storing audit data are set up automatically during the process of installation of your Administration Center. The **Configuration** page allows you to check this configuration and specify the directory where you need to store the audit reports.

- In the **Reports stored path** field of the **Audit** area, type in the path pointing to the folder of interest for storing the audit reports.

  The other fields in this area present the connection parameters to the database, initially an H2 database named *talend_audit*, dedicated to storing audit data. With *Talend Administration Center*, you can manage this audit database the same way as you do to the database storing the data related to project information and

administration. For further information about this way of management, see *Checking the database connection details*.

When need be, you are able to create a custom audit database using the **Audit** page of *Talend Administration Center*. For further information, see *Customizing audit database*.

2.3.4. Advanced configuration of links in the Menu

2.3.4.1. Setting up links to other Talend suite Web applications

If you have other **Talend** web applications like *Talend Data Quality Portal* and *Talend MDM Web User Interface*, you can access them from *Talend Administration Center*.

To set the link to the corresponding web application, complete the following:

1. In the **Menu** tree view, click **Configuration** to open the corresponding page.
2. Expand **Talend suite** and then click in the line corresponding to the web application to which you want to set the link. Set the parameters as the following:

Parameter	Value
Data Quality portal	Type in the URL to *Talend Data Quality Portal* web application. For example, *http://10.66.10.42:8080/tdqportal/*
Drools	Type in the URL to **Drools Kie Workbench**. For example, *http://10.42.10.84:8080/kie-drools-wb/*
MDM	Type in the URL to *Talend MDM Web User Interface* web application. For example, *http://10.84.10.42:8080/talendmdm/secure/*

Once the links are set, the corresponding modules display on the **Menu** of *Talend Administration Center* and in the **Welcome** page. You simply have to click on one of them to access the corresponding web application or page.

For more information about the installation of these applications, see the *Talend Installation Guide*.

2.3.4.2. Setting up dynamic links

A dynamic link is an item you can click to open the website of interest directly from *Talend Administration Center*. Once configured, it appears on the **Menu** tree view and by one single click, directs you to the website it is associated with.

To configure a dynamic link, proceed as follows:

1. Stop your Tomcat server if it is already launched.
2. Open the *configuration.properties* file of the *Talend Administration Center* to be used. This file is located in the *classes* folder of this *Talend Administration Center* on your Tomcat server which path may be:

   <TomcatPath>\webapps\org.talend.administrator\WEB-INF\classes where *<TomcatPath>* designates the Tomcat installation path.

3. At the end of the file for example, enter the dynamic link of interest using the given syntax: `dynamiclink.<key>=<label>#<url>#<order>`.

   For example, you can create the link to http://www.talend.com by entering `dynamiclink.talendcom=Talend#http://www.talend.com#8` or the link to http://www.talendforge.org by entering `dynamiclink.talendforge=Talendforge#http://www.talendforge.org#9`.

   In this syntax, `<key>` indicates the technical key of this link configured, `<label>` is the link name displayed on the **Menu** tree view, `<url>` is the website address you need to link to and `<order>` specifies the position of this link on the **Menu** tree view.

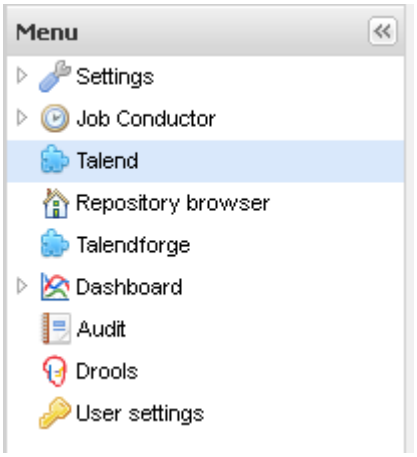
```
dynamiclink.talendcom=Talend#http://www.talend.com#8
dynamiclink.talendforge=Talendforge#http://www.talendforge.org#9
```

   For further information about the order numbers used by *Talend Administration Center* to arrange the **Menu** items, check the *menuentries.properties* file provided in the same *classes* folder.

4. Save the *configuration.properties* file edited.

   Then launch your Tomcat server and log in the deployed *Talend Administration Center*, the two dynamic links created appear on the **Menu** tree view.



2.4. Managing users, projects and licenses

In *Talend Administration Center*, the user with an administrator role can create users and give them specific roles, update and delete them. For more information, see *Managing Users*.

The administrator is able to add projects, edit their information, authorizations and references. For more information, see *Managing projects*, *Managing project authorizations*, *Managing project references*, and *Removing locks on projects*.

This user can also add and validate several licenses in the web application. For more information, see *Managing licenses*.

2.4.1. Managing Users

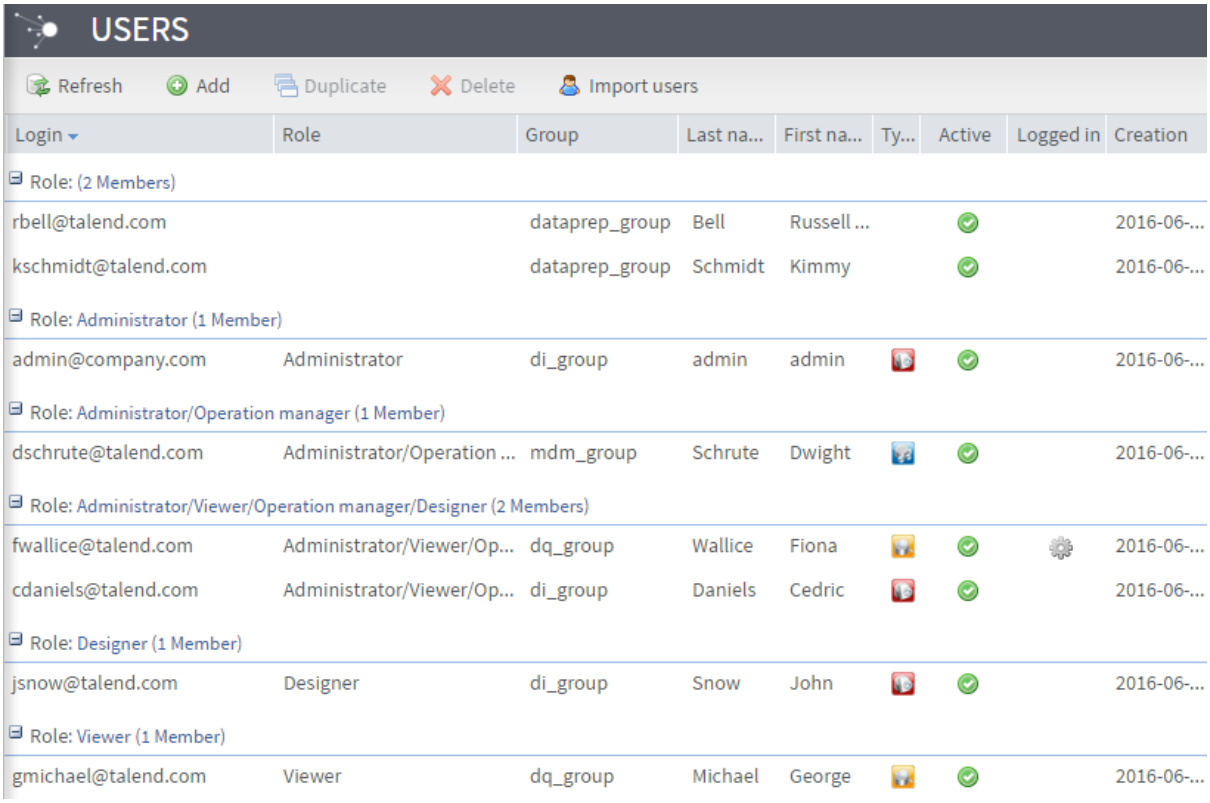
Only users that have the Administrator role and rights can have read-write access to this page. For further information on access rights, see User roles/rights in the Administration Center.

From the **Users** page, you can manage the users of *Talend Studio* stored in the remote repository.

2.4.1.1. Accessing the users' list

To access the list of user accounts, click **Users** in the **Menu** tree view. This list displays all accounts whether they are Administrators, Operation managers, Designers or Viewers.

Note that when you access this list for the first time, only the default administrator account shows on the list.



The account list provides the following pieces of information for each user:

Column	Description
Login	User's email address used to login to the remote repository of *Talend Studio*.
Role	Administrator, Operation manager, Designer and Viewer. For more information, see *User roles/rights in the Administration Center*.
Group	Group to which the user has been added. For more information, see *Grouping users by user type*.
Last Name	Last name of the user.
First Name	First name of the user.
Type	Data Integration/ESB, Data Quality and Master Data Management according to the license you set in *Talend Administration Center*. For more information, see *What domains can you work in depending on your user type and license*.
Active	The user account is activated when the corresponding **Active** column is filled with . If an account is deactivated, the icon displays and the user can not access *Talend Administration Center* and/or *Talend Studio*.
Logged in	Indicates which users are logged in the *Talend Studio* (icon) and *Talend Administration Center* (icon) and for what period of time.
Creation	The creation date of the account in *Talend Administration Center*.
SVN/Git login	The user login to SVN/Git. Note that this user must have been previously created in SVN/Git. If you use the LDAP system to handle the SVN and Git credentials, the recommended way is to edit these credentials through LDAP and not through the **Users** page as *Talend Administration Center* will automatically retrieve the changes done on these credentials.

New designer users, not created by the Administrator, can appear in the list and consume users from the license. Those designers are created from *Talend Studio* when users create their sandbox project. For more information on how users create sandbox projects, see *Talend Studio User Guide* and for more information on how to manage sandbox projects, see *Managing sandbox projects* in the present User Guide.

The buttons on the toolbar of the **Users** page allow you to refresh the display of the account list, add a new account, duplicate an account which already exists, delete one or more accounts and import users.

The right panel of the **Users** page allows you to create new user accounts and to modify selected accounts. For more information, see *Adding a user* and Editing a user.

The two areas, **Data** and **Connection stats**, in this panel display more detailed information about the selected account. For more information, see *Displaying the connection information of a user*.

You can hide/show this panel by clicking respectively the  and the  buttons located in the upper right corner of the panel.

2.4.1.2. Adding a user

Talend Administration Center enables you to add new user accounts from the **Users** page. You can also use this page to create users with LDAP.

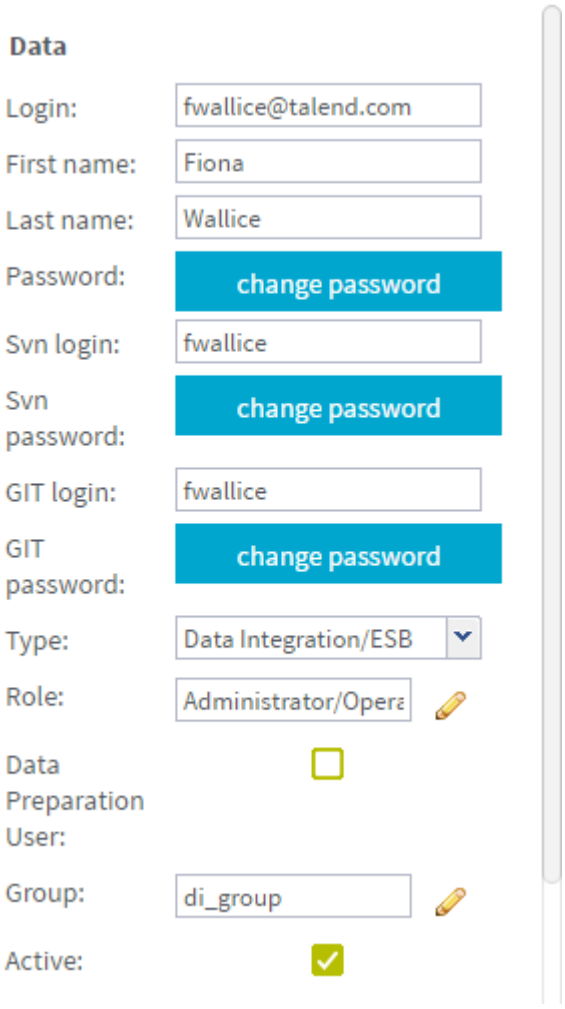
When you want to use the LDAP system to list and authenticate users, you must first activate LDAP authentication in *Talend Administration Center*. For more information on activating LDAP authentication, see *Setting up an LDAP(S) protocol*.

However, creating a user account with LDAP is slightly different from the default operation. With LDAP, only the Distinguished name and the role are required, while with the default operation, the **First name**, **Last name** and **Password** are all required.

For more information on the two user creation modes, see the following sub-sections.

How to add a user (default)

1. On the **Users** page, click **Add** to create a new account. You can create a Viewer, Designer, Operation Manager, Administrator or a user with several of these roles.



2. In the **Data** panel to the right, fill in the following information.

Field	Description
Login	Type in the user's email address that will be used to log on to the remote repository of *Talend Studio*.
First Name	Type in the user's first name.
Last Name	Type in the user's last name.
Password	Type in a password for this account.
SVN/GIT login	Type in the SVN or GIT login (or both, depending on where your projects are stored) in order for the user to commit the modifications made on *Talend Studio* with this SVN/GIT login instead of the default one. Note that the login and password must correspond to a user that has been previously created in SVN/GIT.
SVN/GIT password	Type in the SVN/GIT password corresponding to the SVN/GIT login. Note that the login and password must correspond to a user that has been previously created in SVN/GIT.
Type	Select the type of project the user will be working on depending on the license you set in *Talend Administration Center*. For more information, see *What domains can you work in depending on your user type and license*. If the license set in *Talend Administration Center* is a Data Integration or ESB license only, this field will not display as there will not be other types available.

Field	Description
Role	Click  to open a dialog box where you can select from the list the check box of the user role(s) you want to assign to the selected user.  You can assign the user several roles at the same time. To do so, select the check boxes of the roles you want to assign to the selected user and click **Validate** in the dialog box. The role(s) will define the read and write privileges relating to the management of all entities in *Talend Administration Center*. For more information on user roles, see *User roles/rights in the Administration Center*.
Group	Click  to open a dialog box where you can select from the list the check box of the user group(s) in which you want to add to the selected user. Note that the user group must have been previously created. Once created, this group can be assigned to a project of the same type. For more information on user roles, see *User roles/rights in the Administration Center*.
Active	Activate/deactivate an account to enable/disable the selected user to access *Talend Administration Center* and/or *Talend Studio*.

3. Click **Save** to validate the creation of the new user or click **Cancel** to cancel it.

To perform this action via the MetaServlet application, use the `createUser` command. For more information about the MetaServlet parameters, see *Parameters and actions in metaServlet*.

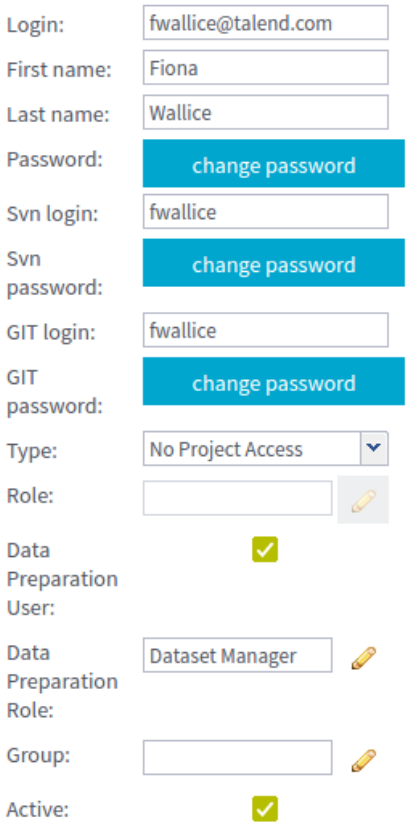
How to add a Data Preparation user

Talend Administration Center allows you to add Data Preparation user accounts to the web application. These users can either be related to Talend Data Preparation only, or to hybrid projects with both Data Preparation and other project types (Data Integration for example).

Prerequisite: Your license includes Data Preparation user types.

How to add a user with Data Preparation type

This type of user only has a read-write access to the User Settings of *Talend Administration Center* and can be assigned to a Data Preparation user group type. For more information on user groups, see *Grouping users by user type*.



1. On the **Users** page, click **Add** to create a new Data Preparation user account.
2. In the **Data** panel to the right, fill in the following information:

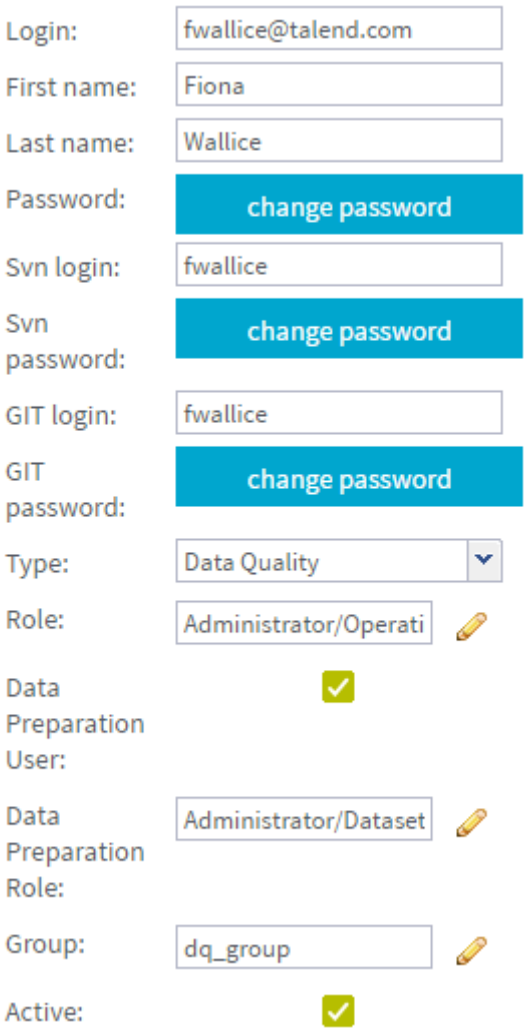
   Enter the user's name, login (email address) and password for this account.

   Click  next to the **Role** field to open a dialog box where you can select from the list the check box of the role(s) you want to assign to the selected user.

   Click  next to the **Group** field to open a dialog box where you can select from the list the check box of the user group(s) in which you want to add the selected user.
3. Select the **Data Preparation User** check box to set this account as a Data Preparation account.
4. Set the Data Preparation user **Type** to **No Project access** as this user is not linked to any projects and will only work in Talend Data Preparation.
5. Click  next to the **Data Preparation Role** to open a dialog box where you can select from the list the check box of the Data Preparation role(s) you want to assign to the selected user.
6. Click **Save** to validate the creation of the new user.

How to add a hybrid Data Preparation user

This type of user cannot be assigned to a Data Preparation user group type, but it can be assigned to the user group type corresponding to its own user type (a hybrid Data Preparation/Data Integration user can be assigned to a Data Integration user group, for example). For more information on user groups, see *Grouping users by user type*.



1. On the **Users** page, click **Add** to create a new Data Preparation user account.
2. In the **Data** panel to the right, fill in the information as described in the previous procedure, but select in the **Type** field the type of project the Data Preparation user will be working on depending on the license (**Data Integration/ESB**, **Data Quality** or **Master Data Management**).
3. Click **Save** to validate the creation of the new user.

To perform this action via the MetaServlet application, use the `createUser` command and define the *dataPrep* and *dataPrepRole* arguments. For more information about the MetaServlet parameters, see *Parameters and actions in metaServlet*.

For more information on how to add a Data Preparation user with LDAP, see *How to add a user with LDAP*.

How to add a user with LDAP

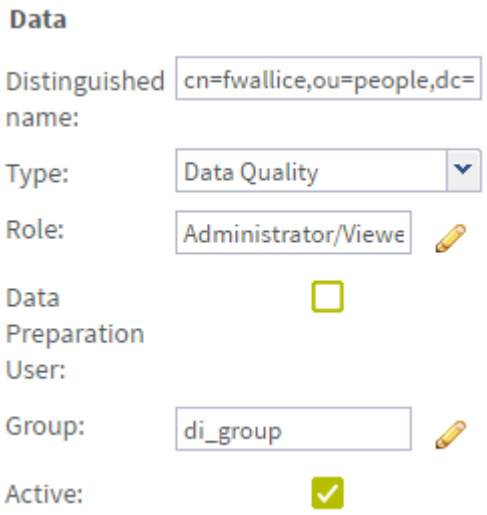
Prerequisites :

- To create a user that is authenticated using the LDAP directory, you must first activate LDAP authentication from the **Configuration** page. For more information, see *Setting up an LDAP(S) protocol*
- To activate LDAP over SSL (LDAPS) authentication, you also need to have configured the corresponding keystore. For more information, see the *Talend Installation Guide*.

For more information on how to configure the keystore for LDAPS, see the *Talend Installation Guide*.

Once LDAP authentication is activated, proceed as follows to create an authenticated user.

1. On the **Users** page, click **Add** on the toolbar to create a new account. This can be a Viewer, an Operation Manager, a Designer, an Administrator or several of these roles.



2. On the **Data** panel to the right, complete the following information:

Field	Description
Distinguished name	Fill in the user name to authenticate the user and retrieve the corresponding connection information (**Login**, **First name**, **Last name** and **Password**).
Type	Data Integration/ESB, Data Quality, Data Preparation and Master Data Management according to the license you set in *Talend Administration Center*. For more information, see *What domains can you work in depending on your user type and license*.
Role	Click to open a dialog box where you can select from the list the check box of the user role(s) you want to assign to the selected user. You can assign the user several roles at the same time. To do so, select the check boxes of the roles you want to assign to the selected user and click **Validate** in the dialog box. The role(s) will define the read and write privilege on the management of all entities in *Talend Administration Center*. For more information on user roles, see *User roles/rights in the Administration Center*.
Data Preparation User	Select the **Data Preparation User** check box to set this account as a Data Preparation account. By default, the Data Preparation user **Type** is set to empty.
Group	Click next to the **Group** field to open a dialog box where you can select from the list the check box of the user group(s) in which you want to add the selected user. For more informations, see *Grouping users by user type*.
Active	Activate/deactivate an account to enable/disable the selected user to access *Talend Administration Center* and/or *Talend Studio*.

3. Click **Save** to validate the creation of the new user or click **Cancel** to cancel it.

   When you click **Save**, *Talend Administration Center* searches for the indicated name in the LDAP server. If this user is found on the server, it will be created on *Talend Administration Center* and the user's information (**Login**, **Email**, **First name**, **Last name**, **Password**, **Svn Login** and **Svn Password**) will be retrieved. If this user does not exist in the LDAP server, a warning will appear to inform you that the user is not created in *Talend Administration Center* and it does not exist in the LDAP server.

If you use the LDAP system to handle the SVN and Git credentials, the recommended way is to edit these credentials through LDAP and not through the **Users** page as *Talend Administration Center* will automatically retrieve the changes done on these credentials.

For more information on how to manage encryption of the SVN password in *Talend Administration Center*, see the article Managing encryption of SVN passwords in LDAP for Talend Administration Center.

2.4.1.3. Displaying the connection information of a user

Select a user in the account list to display the connection information of the selected account in the **Connection stats** area of the **Users** page.

The displayed information is as the following:

Field		Description
To the Administration Center	*First*	Date of the first connection to the Administration Center
	Last	Date of the last connection to the Administration Center
	Number	Number of connections to the Administration Center
To the Studio	*First*	Date of the first connection to *Talend Studio*
	Last	Date of the last connection to *Talend Studio*
	Number	Number of connections to *Talend Studio*
To the Data Preparation	*First*	Date of the first connection to *Talend Data Preparation*
	Last	Date of the last connection to *Talend Data Preparation*
	Number	Number of connections to *Talend Data Preparation*

2.4.1.4. Importing user accounts from a file

You can import users from a file and integrate them directly in *Talend Administration Center*.

The file format used is *json*, for example:

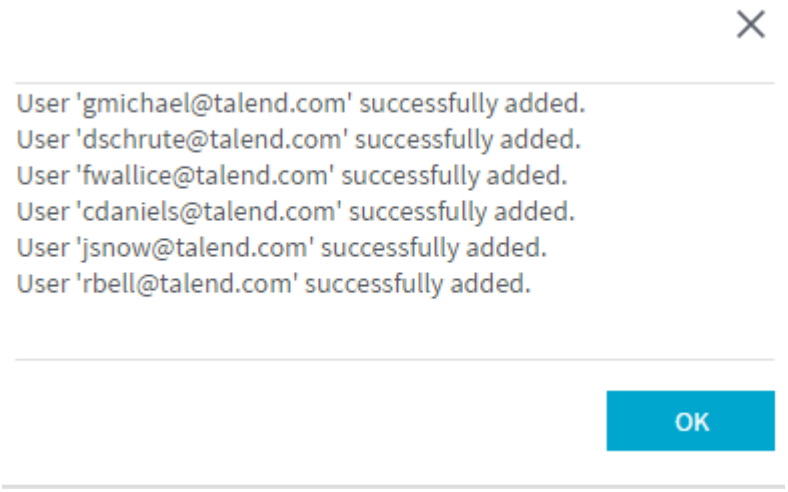
{"role":["Administrator","Operation manager"],"lastname":"Schrute","login":"dschrute@talend.com","firstname":"Dwight","type":"MDM","password":"admin"}

The "*role*", "*lastname*", "*login*", "*password*", "*firstname*" and "*type*" fields are mandatory.

To import user accounts from a file stored locally, do the following:

1. On the toolbar of the **Users** page, click **Import users**. The **[Import users]** dialog box opens.
2. Browse to the file that holds the accounts you want to import and click **Upload**.

   A confirmation message gives you the import status of each of the user accounts listed in the file.



3. Click **Close** to close the confirmation message. The imported user accounts are listed in the account list, sorted by role.

2.4.1.5. Grouping users by user type

From the **User Groups** page of *Talend Administration Center*, you can organize existing users in groups based on their type (**Data Integration**/**ESB**, **Data Quality**, **Master Data Management**, **Data Preparation**). Once created, these groups can be assigned to projects of the same type.

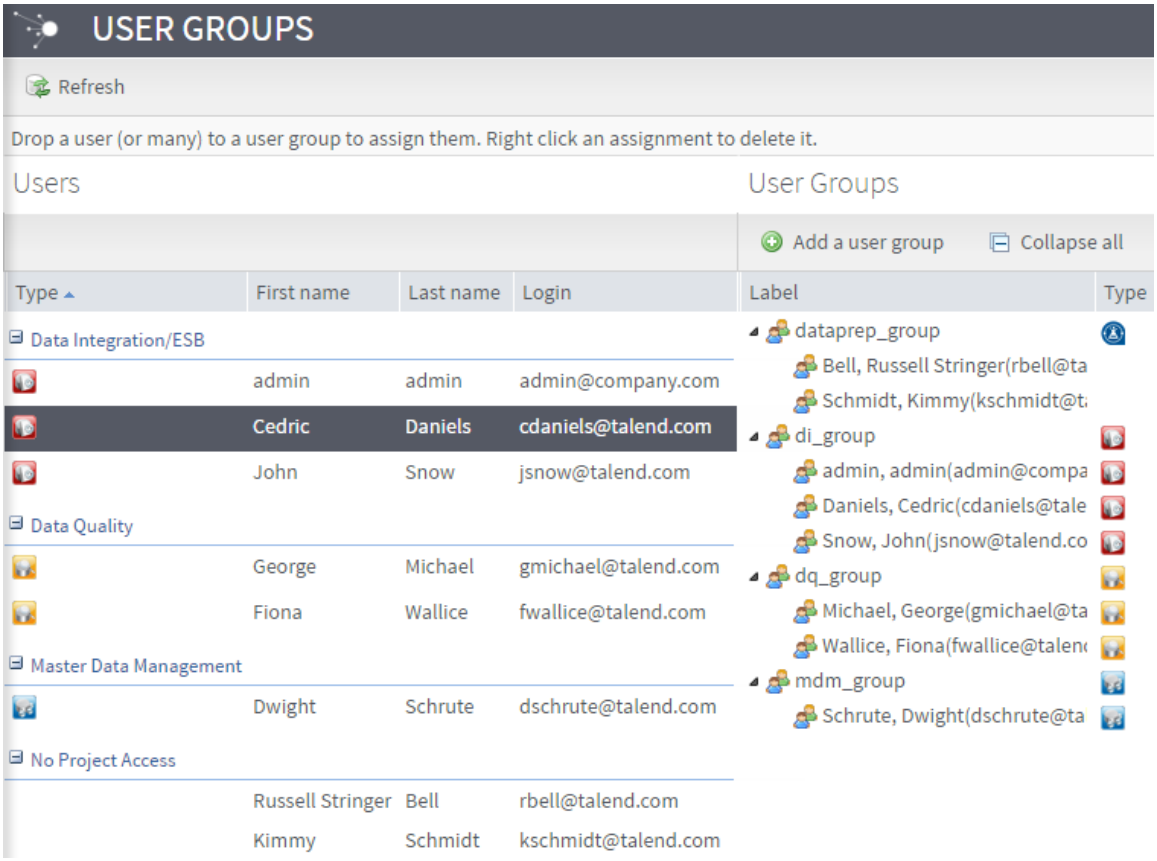
User groups allow administrators to manage large amount of users by organizing them efficiently in order to assign them easily to corresponding projects.

Add users to a group

Prerequisite: You have already created several users of the same type from the **Users** page. For more information, see *Adding a user*.

1. On the **User Groups** page, click the **Add a user group** button on the **User Groups** panel of the page.

2. In the **[User Group]** window that opens, give a name, description (if necessary) and type to your user group, then click **Save**.



3. On the **Users** panel of the page, select the users you want to add in your group, then drag and drop them in the corresponding group of the **User Groups** panel.

   Note that:

   - you can select multiple users with the **Ctrl** and **SHIFT** keys.
   - Master Data Management users can be added to Master Data Management, Data Quality or Data Integration groups, Data Quality users can added to Data Quality or Data Integration groups, and Data Integration users can only be added to Data Integration groups.

     For Talend Data Preparation users: Data Preparation-only users (with no related project) can only be added to Data Preparation groups, whereas hybrid Data Preparation users can only be assigned to the group type corresponding to their own user type (a hybrid Data Preparation/Data Integration user can be assigned to a Data Integration user group, for example).

   Your user group is created and populated with the users you have selected.

   To perform these actions via the MetaServlet application, use the `createUserGroup`, `addUserToUserGroup` and `listUserGroup` commands. For more information about the MetaServlet parameters, see *Parameters and actions in metaServlet*.

   Next step: Now that your user group is created, you can assign it to a project of the same type. For more information, see *Authorizing users on projects*.

Remove users from a user group

- To remove a user from an existing user group, right-click the user from the **Users** panel of the **User Groups** page and click **Remove assignment**.

  Note that you can select multiple users to be removed with the **Ctrl** and **SHIFT** keys.

2.4.1.6. Editing or deleting a user account

Editing a user

1. In the **Menu** tree-view, select **Users** to open the list of users.
2. Select the user you want to edit from the list of users.
3. In the **Data** area, modify the user details as needed, then click **Save** to validate the modification.

Activating/deactivating an account

You can activate/deactivate a user to enable/disable the selected user to access the Administration Center internal resources.

Note that, if an account is deactivated, you cannot use the corresponding login to create another account.

1. Select the user you want to activate/deactivate on the **Users** page.
2. In the **Data** view, select/clear the **Active** check box, then click **Save** to validate the operation or click **Cancel** to ignore it.

Duplicating a user

To avoid creating a new user from scratch, you can duplicate an existing one and modify its metadata to create a new user in the list.

1. On the **Users** page, select the user you want to duplicate.
2. On the toolbar, click **Duplicate**. The **Data** area opens with a copy of the selected user that you can modify as needed.
3. Click **Save** to validate the operation or click **Cancel** to cancel it.

Deleting an account

You cannot delete a user when the user to be deleted:

- is currently connected to the application,
- has locked items, for example, because the user is currently working on these items,
- is the only active administrator user. There must always be at least one active administrator user.

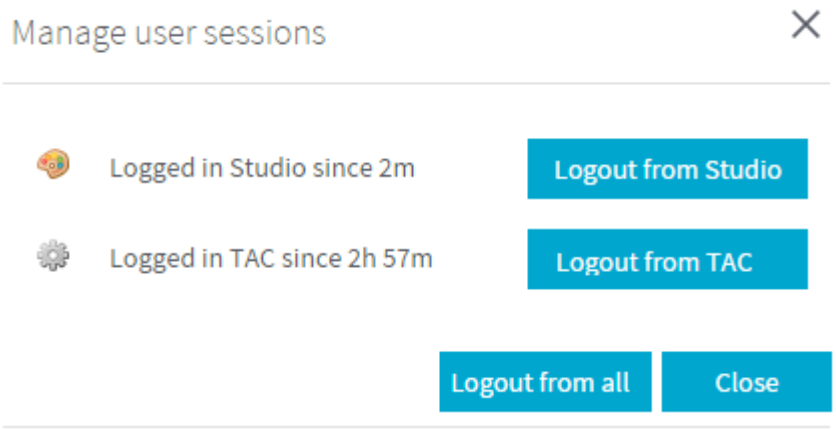
If the user you deleted subscribed to notifications, he/she will automatically be removed from these notifications when you delete their accounts. If the deleted user is the only subscriber to the notification, this notification will be automatically deleted. For more information regarding notifications, see *Managing notifications*.

1. On the **Users** page, select the user you want to delete.
2. On the toolbar, click **Delete**. A confirmation dialog box appears.
3. Click **OK** to remove the account from the account list.

2.4.1.7. Managing user sessions in Talend Studio, Talend Data Preparation and Talend Administration Center

From the **Users** page of *Talend Administration Center*, you can see which users are logged in the Talend Studio, in Talend Data Preparation and in Talend Administration Center and log them out if needed. This feature might be useful if your license includes users that can work simultaneously on the Studio or *Talend Administration Center*. For more information on simultaneous users, see *Managing licenses*.

1. On the user account list, select the user you want to log out and click the or icon on the **Logged in** column. The **[Manage user sessions]** dialog box opens and display the connection duration of the user to the *Talend* products.



2. To log the user out of the Studio, click the **Logout from Studio** button next to the icon.

   To log the user out of *Talend Administration Center*, click the **Logout from TAC** button next to the icon.

   To log the user out of Talend Data Preparation, click the **Logout from DataPrep** button next to the icon.

   To log the user out of both applications, click **Logout from all**.

2.4.2. Managing projects

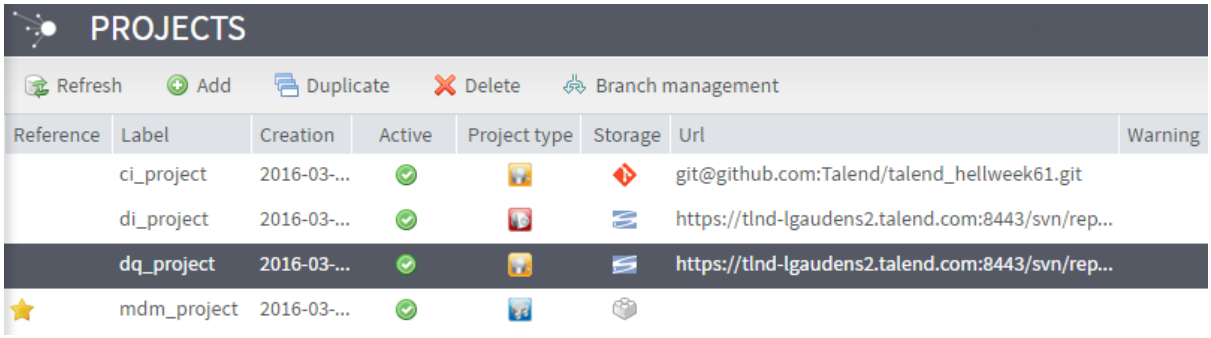
Only users that have the Administrator role and rights can have read-write access to this page. Other users, depending on their roles, can have either read-only access or no access to this page. For further information on access rights, see User roles/rights in the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the appropriate authorization by the Administrator.

From the **Projects** page, you can add projects, duplicate projects, view/edit the selected project information or delete projects. You can also create different branches for a project.

2.4.2.1. Accessing the project list

To access the project list stored in the remote repository, click **Projects** in the **Menu** tree view.

When you access the **Projects** page for the first time, no projects show on the list. To allocate resources and define user accesses to projects, you first need to add projects to the list. For more information, see *Adding a project*.



The list of projects provides the following information per project:

Column	Description
Reference	The  icon shows when the corresponding project has been defined as a reference project.
Id	The identifier of the project. This identifier can be useful to execute MetaServlet commands, For more information, see *Non-GUI operation in metaServlet*.
Label	The name of the project.
Description	The description text typed at project creation.
Creation	The creation date of the project.
Active	Project status (active or inactive).
Project type	Data Integration/ESB, Data Quality and Master Data Management depending on the license you set in *Talend Administration Center*. For more information, see *What domains can you work in depending on your user type and license*.
Storage	Storage type of the project: either  (no storage),  (SVN storage) or  (GIT storage).
Url	URL of the subversion project.
Warning	A warning message displays if there are any errors in the project.

The buttons on the toolbar of the **Projects** page allow you to refresh the display of the project list, add a new project and delete one or more projects.

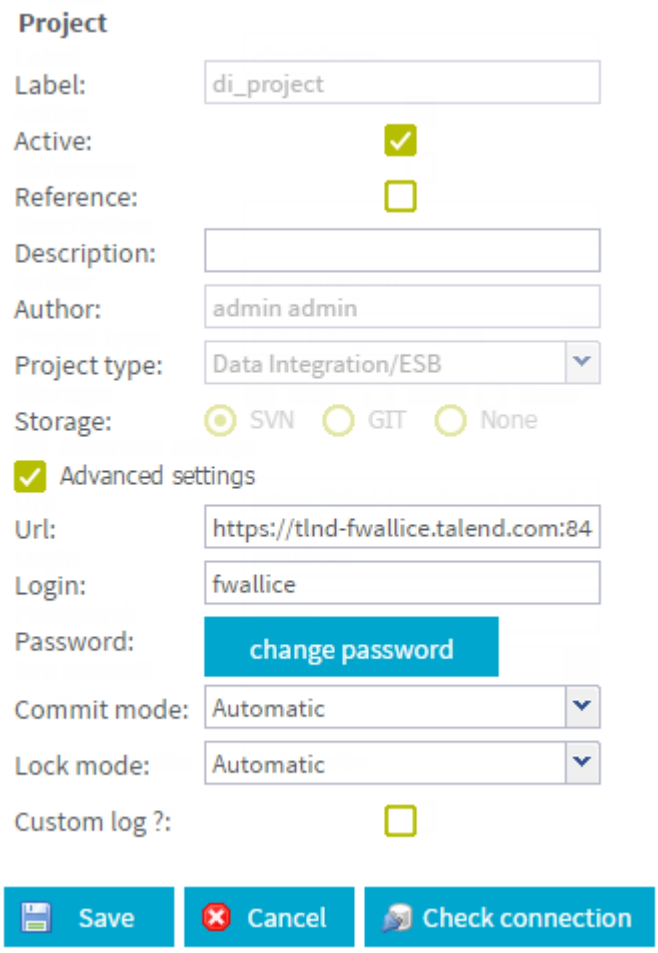
You can hide/show this panel by clicking on the  and the  buttons, which is located on the splitter.

To display the details of a project, click the relevant project **Name** in the project list. From the project details page, select the action you want to carry out for this particular project.

2.4.2.2. Adding a project

To add a project which is stored in SVN or GIT

1. In the **Menu** tree-view, select **Projects** to open the project list page.
2. From the toolbar, click **Add**. Mandatory fields in the **Project** panel to the right are followed by  .



3. In the **Project** panel, enter the following information:

Field	Description
Label	Type in the project name. This name should match the project name you will connect to in *Talend Studio*.
Active	Select/clear this check box to activate/deactivate the current project.
Reference	Select/clear this check box to add or remove the selected project as reference. When you select a project in the **Projects** list that is already used as a project reference, this check box is selected by default. For more information on project references, see *Managing project references*.
Description	Fill in a description if needed.
Author	The first and last names of the project author. This field is read-only and so cannot be modified.
Project type	Select the type of project according to the license you set in Talend Administration Center. For more information, see *What domains can you work in depending on your user type and license*. If the license set in *Talend Administration Center* is a Data Integration or ESB license only, this field will not display as there will not be other types available.
Storage	Select the storage type **SVN** or **GIT** depending on where your project is stored.
Advanced settings	Select this check box if you want to use a connection (**URL**), a commit mode (**Commit mode**), or a lock mode (**Cock mode**) which differ from the default connection you have defined on the **Configuration** page, then fill in the fields that follow according to your needs.

Field	Description
	For more information on the connection used by default, see *Setting up SVN or Git parameters*.
Url	Enter the connection URL to the SVN or GIT repository. When you create a project, note that SVN automatically creates a default structure in your repository (*<project name>/ branches|tags|trunk*) to store the project metadata. For SVN projects: Subversion URLs use the following syntax: Repository URL/project name. A typical Subversion repository often holds the files (or source code) for several projects. Usually, each project is a subdirectory in the repository's file system tree. Subversions' URLs can match any of the following syntaxes: *svn+ssh://<login>@<hostName>/<repositoryName>/<project name>* ex: *svn+ssh://tisadmin@10.42.0.10/svn/repo/tac_di* *http://10.42.10.99/repo/<project name>*.
Login	Type in the user login to the repository.
Password	Type in the user password to the repository.
Commit mode	Different types are possible to submit the latest changes done to Projects or to any item in the Repository in *Talend Studio*: **Automatic**: *Talend Studio* automatically commits the changes made on the Project and Repository items. This is the default setting, **Unlocked items**: *Talend Studio* commits the changes made on certain items when those items are unlocked. An item is unlocked either when you close it or when you manually unlock it, depending on the**Lock mode** selected (see **Lock mode** in this table). For more information about lock principles, see *Talend Studio User Guide*.
Lock mode	Different SVN lock types are possible: **Automatic**: Items are automatically locked/unlocked when a user wants to edit them in *Talend Studio*, **Ask user**: The user is prompted to lock/unlock items when needed, **Manual**: The user needs to manually use the Lock/Unlock option in the contextual menu of the items. For more information regarding lock management, see *Removing locks on projects* and *Talend Studio User Guide*.
Custom log	Select this check box if you want the users to be prompted to enter their own commit log for each commit. The auto generated application log will be still appended at the end. For more information, see the section on logging information on edited items of *Talend Studio User Guide*.

4. Click **Check connection** to verify your connection status.
5. Click **Save** to validate the creation of the new project or click **Cancel** to cancel it.

You can also create a remote project directly from the CommandLine thanks to the `createProject` command. For more information about the `createProject` command, display the Help provided in the CommandLine. For more information on the CommandLine, see *CommandLine features*.

To add a project which is not stored in SVN or GIT

If you have already executed your Jobs on a development environment and want to have the exact same Jobs you have previously generated on your production environment, you can create a "no-SVN/GIT" project in which you will import the generated Jobs.

In this case, note that the name of the project must be the same as the name of the development project in which you have previously generated your Jobs.

For more information on how to import a Job that has been previously generated, see Adding an execution task on a pre-generated Job.

1. From the toolbar of the **Projects** page, click **Add**. Mandatory fields in the **Project** panel to the right are followed by .
2. In the **Project** panel, enter the following information:

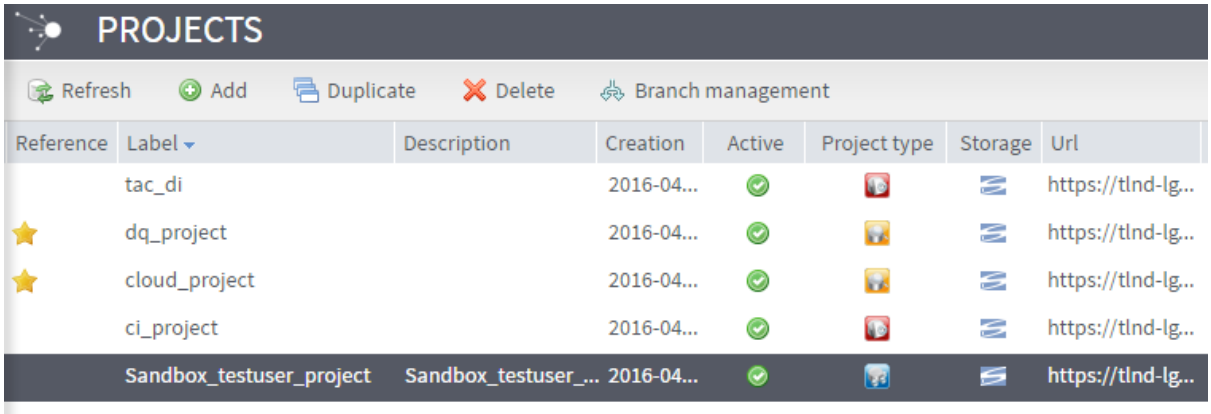
Field	Description
Label	Type in the project name. This name should match the project name in which you have previously generated your Jobs.
Active	Select/clear this check box to activate/deactivate the current project.
Reference	Select/clear this check box to add or remove the selected project as reference. When you select a project in the **Projects** list that is already used as a project reference, this check box is selected by default. For more information on project references, see *Managing project references*.
Description	Fill in a description if needed.
Author	The first and last names of the project author. This field is read-only and so cannot be modified.
Project type	Select the type of project according to the license you set in Talend Administration Center. For more information, see *What domains can you work in depending on your user type and license*. If the license set in *Talend Administration Center* is a Data Integration or ESB license only, this field will not display as there will not be other types available.
Storage	Select the storage type **None** as your project is not stored in Subversion.

3. Click **Save** to validate the creation of the new project or click **Cancel** to cancel it.

2.4.2.3. Managing sandbox projects

Users of *Talend Studio* have the possibility to create a working project by themselves directly from the studio. These working or sandbox projects are mainly used for testing purpose, but an Administrator can easily share them with other users and they can be migrated to a production environment.

Sandbox projects display on the project list of the **Projects** page with a specific naming to easily identify them: *Sandbox_username_project*.



As other projects, a sandbox project can be duplicated, edited or deleted. For more information on these actions, see the sections below.

The type of a sandbox project is determined by the licence used. For more information about licenses, see *Managing licenses*.

When a user creates his/her sandbox project, he/she also creates his/her account as a designer user on the **Users** page of *Talend Administration Center*. For more information on the **Users** page, see *Managing Users*. Thus, a user is consumed from *Talend Administration Center*'s license. If you activated the SMTP option on the **Configuration** page of *Talend Administration Center*, the user will receive an email notifying him/her of the creation of his/her account. For more information on notifications, see *Setting up an SMTP protocol*.

Moreover, the user will automatically be authorized to access his/her sandbox project on the **Projects authorizations** page. From this page, you will be able to remove the authorization, share the project with other users or give read only and read & write rights to users. For more information on Projects authorizations, see *Managing project authorizations*.

For more information on how to activate/deactivate sandbox project feature, see the relevant section in the *Talend Installation Guide*.

For more information on how to create a sandbox project, see *Talend Studio User Guide*.

2.4.2.4. Editing the details of a project

Pay much attention when modifying the URL of a database or the URL of Subversion. Make sure to validate the editing operation first with the relevant administrator.

To edit the details of a project:

1. In the **Menu** tree-view, select **Projects** to open the project list.
2. Select the project you want to edit from the project list.
3. In the **Project** panel, modify the project details as needed.

   The **Label**, **Author** and **Repository type** are read-only fields and thus cannot be modified.
4. Click **Save** to validate the modifications or click **Cancel** to cancel it.

   You can also edit the details of a project via the MetaServlet application, using the `updateProject` command based on the project ID. For more information on MetaServlet, see *Non-GUI operation in metaServlet*.

2.4.2.5. Activating/deactivating a project

To activate/deactivate a project:

1. Select the project you want to activate/deactivate on the **Projects** page.
2. In the **Project** panel, select/clear the **Active** check box.
3. Click **Save** to validate the operation or click **Cancel** to cancel it.

If a Job is deactivated, you cannot use its **Label** to create another project.

2.4.2.6. Adding/removing a reference project

To add/remove a reference project, complete the following:

1. Select the project you want to add/remove as reference on the **Projects** page.
2. In the **Project** panel, select/clear the **Reference** check box.
3. Click **Save** to validate the operation or click **Cancel** to cancel it.

For more information on project references, see *Managing project references*.

2.4.2.7. Managing SVN/Git branches and tags for a project

The *Talend* solutions provides a version control system that enables users to have different versions of the same project in different SVN/Git branches and tags. *Talend Administration Center* enables you to create/delete branches and tags of the project stored on SVN or Git.

About Git branches: All branches/tags are visible for all projects on the same Git repository. Therefore, if you create some branches/tags for one project, all other projects on the same Git repository will have the same list.

You can also manage SVN/Git branches and tags via the Metaservlet. For more information, see *Non-GUI operation in metaServlet*.

For more information about best practices on why and how to use SVN/Git branches and tags with the Talend products, see the *Talend Software Development Life Cycle Best Practices Guide*.

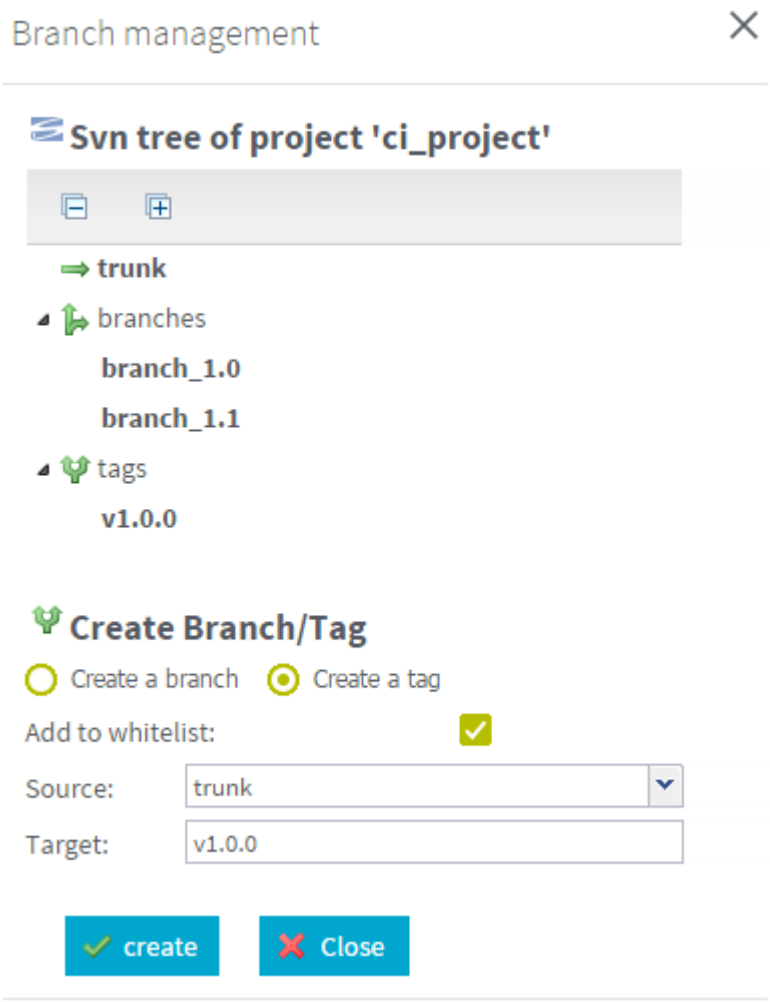
How to manage SVN/Git branches

When a project is stored on SVN or Git, you can create branches for this project from *Talend Administration Center*:

To create a Git or SVN branch

1. In the **Menu** tree view, click **Projects** to display the **Projects** page.
2. Select the project for which you want to create one or more branches.
3. On the toolbar, click the **Branch management** button.

   The **[Branch management]** dialog box opens.



The **SVN/Git tree of project '<ProjectName>'** area shows the structure of the project: all existing branches and their names.

Before creating branches for a project stored on SVN or Git, the **SVN/Git tree of project '<ProjectName>'** lists only the trunk which is the main development branch. Later, all created branches/tags will be listed in this tree.

4. From the **Source** field, select the trunk or the branch from which you want to copy the data.

   When you create a branch for the first time, the only source possible is the trunk as it contains the main development branch. Then the **Source** list will include all created branches.

5. In the **Target** field, type in the name of the branch you want to create.

6. Click **create**.

   The created branch is listed under the **branches** node in the **SVN/Git project tree**.

   Now, the project has two different branches: the trunk/master and a newly created branch.

   Once branches are created for a project:

   - you can add an execution task to trigger a Job stored in a specific branch of the project. For more information, see *Adding an execution task* and *Adding an execution server*;
   - users of *Talend Studio* can switch from the trunk to a branch or copy an item from a branch to another branch or a tag. For more information, see *Talend Studio User Guide*.

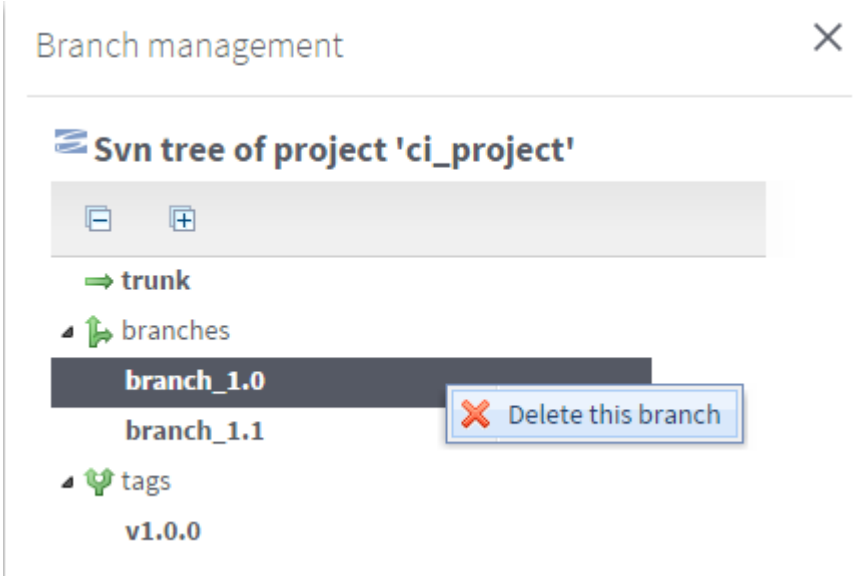
Talend Administration Center enables you to delete any of the branches of the project stored on SVN or Git.

To delete a Git or SVN Branch

1. In the **Menu** tree view, click **Projects** to display the **Projects** page.

   From the project list, select the project for which you want to delete an existing branch.

   The **[Branch management]** dialog box opens.



2. In the **SVN/Git tree of project '<ProjectName>'**, right-click the branch you want to delete and select **Delete this branch** from the contextual menu.

   A confirmation message is displayed.

3. Click **OK** to confirm the deletion operation and close the message. A warning message will alert you if you try to delete a branch used by the **Job Conductor**.

   The selected branch is deleted from the **SVN/Git tree of project '<ProjectName>'** and from the project on SVN or Git.

   Note that you can also delete a branch or a tag via the MetaServlet application, using the `deleteBranch` command. For more information on MetaServlet, see *Non-GUI operation in metaServlet*.

   The branches must be deleted from Talend Administration Center and not directly from SVN or Git.

To create a Git or SVN Branch white list

Talend Administration Center allows you to filter the project on the defined SVN/Git branches or tags in order to reduce the use of disk resources and improve performances.

Prerequisites:

- you have enabled the **Branches whitelist** option on the **Configuration** page (see *Setting up SVN or Git parameters*)
- you have created a project with related branches (see *Adding a project* and To create a Git or SVN branch).

  This results in the creation of a configuration file named *active_svn_branches.csv* (for SVN projects) or *active_git_branches.csv* (for Git projects).

1. Open the whitelist configuration file to edit it (*active_svn_branches.csv* for SVN projects or *active_git_branches.csv* for Git projects). You can see the list of all branches of your projects.

2. Remove the lines corresponding to the branches on which you do not work in order to keep only the necessary ones and save your changes. The project is now filtered on the branches you have chosen to keep.

How to manage SVN/Git tags

When a project is stored on SVN or Git, you can create tags for this project by copying the content of a branch or the trunk.

To create a Git or SVN tag

1. In the **Menu** tree view, click **Projects** to display the **Projects** page.

2. Select the project for which you want to create one or more tags.

3. On the toolbar, click the **Branch management** button.

   The **[Branch management]** dialog box opens.

   The **SVN/Git tree of project '<ProjectName>'** area shows the structure of the project: all existing branches/tags and their names.

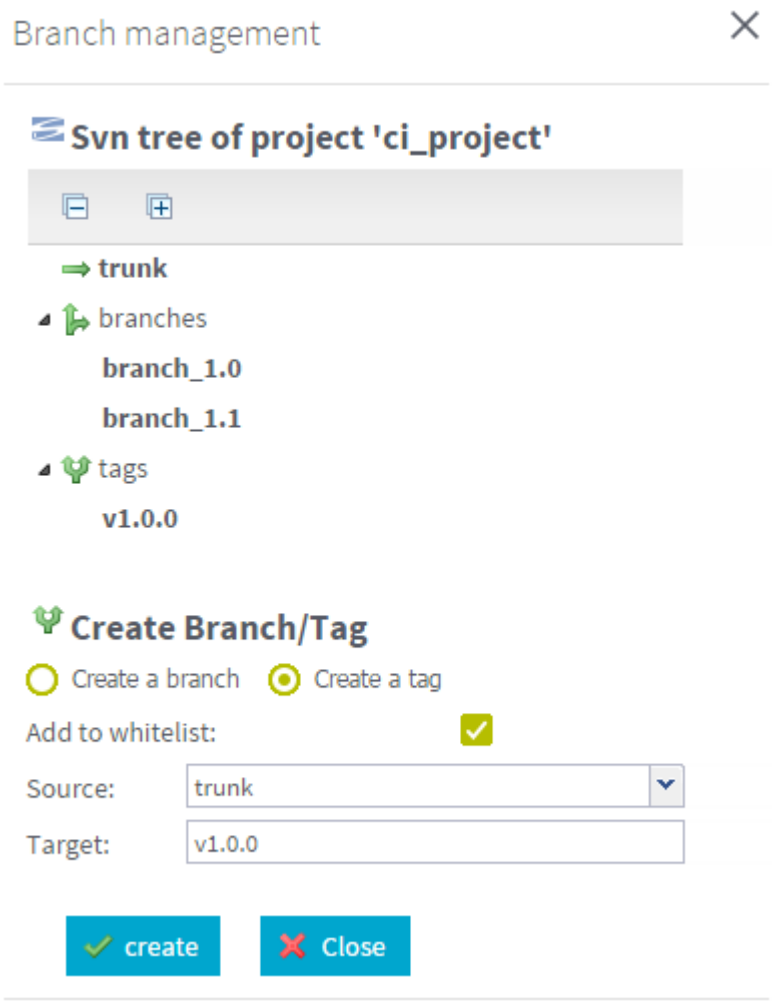
   

   Before creating tags for a project stored on SVN or Git, the **SVN tree of project '<ProjectName>'** lists only the trunk/master which is the main development branch. Later, all created branches/tags will be listed in this tree.

4. From the **Source** field, select the trunk or the branch from which you want to copy the data.

5. In the **Target** field, type in the name of the tag you want to create.

6. Click **create**.



The created tag is displayed in the **SVN/Git tree of project '<ProjectName>'**.

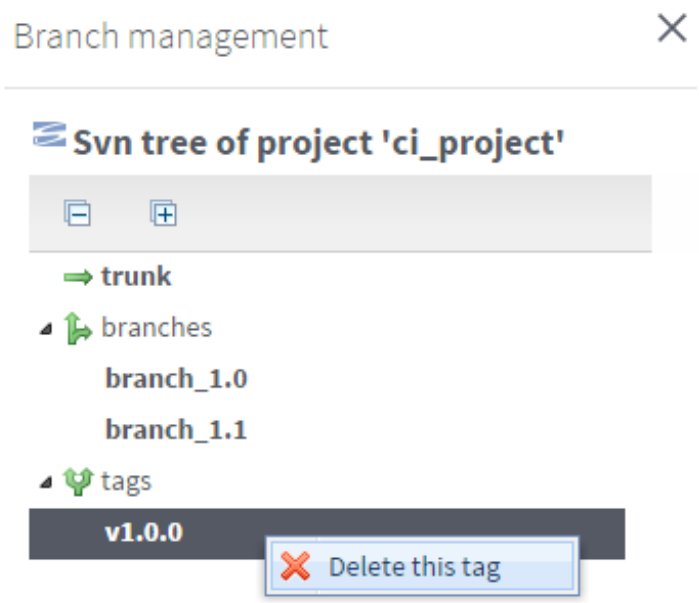
Once tags are created for a project, you can add an execution task to trigger a Job stored in a specific tag of the project.

To delete a Git or SVN tag

1. In the **Menu** tree view, click **Projects** to display the **Projects** page.

   From the project list, select the project for which you want to delete an existing tag.

   The **[Branch management]** dialog box opens.



2. In the **SVN/Git tree of project '<ProjectName>'**, right-click the tag you want to delete and select **Delete this tag** from the contextual menu.

   A confirmation message is displayed.

3. Click **OK** to confirm the deletion operation and close the message. A warning message will alert you if you try to delete a tag used by the Job Conductor.

   The selected tag is deleted from the **SVN/Git tree of project '<ProjectName>'** and from the project on SVN or Git.

   Note that you can also delete a branch or a tag via the MetaServlet application, using the `deleteBranch` command. For more information on MetaServlet, see *Non-GUI operation in metaServlet*.

   The tags must be deleted from Talend Administration Center and not directly from SVN or Git.

2.4.2.8. Duplicating a project

To avoid creating a new project from scratch, you can duplicate an existing one and work around its metadata to have a new project in the list.

To duplicate a project from the project list, complete the following:

1. On the **Projects** page, select the project you want to duplicate.
2. On the toolbar, click **Duplicate**. The **Project** view displays with a copy of the selected project that you can modify as needed.
3. Click **Save** to validate the operation or click **Cancel** to cancel it.

2.4.2.9. Deleting a project

To delete a project from the project list, complete the following:

1. On the **Projects** page, select the project you want to delete.

2. On the toolbar, click **Delete**. A confirmation dialog box appears.
3. Click **OK** to remove the project from the project list.

   If the project you want to delete is being used as a reference for another project, you need to remove the reference first. For more information about project references, see *Managing project references*.

If your projects are stored in SVN mode, they must be deleted from Talend Administration Center first and not directly from SVN. Note that the deleted project remains stored in your SVN server and may need to get purged by an SVN administrator.

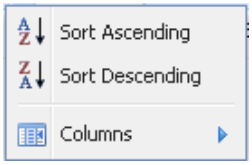
2.4.2.10. Customizing the display of the project list

You can customize the project list view to restrict the number of displayed projects according to different criteria. You can also show/hide one or more columns in the project list.

1. On the project list, put the pointer on a column name and click the drop-down arrow.
2. In the drop-down list, select:

Item	To...
Sort Ascending	arrange the list in an ascending order
Sort Descending	arrange the list in an descending order
Columns	display a drop-down list where you can select/clear the check box next to the column(s) you want to show/hide

The figure below shows the list view options in the drop-down list.



You can also apply filters on all project columns by typing in key words or by selecting check boxes in the **Filters** fields of these columns. To remove the filters and reset the page, you have to click the cog icon on the right of the top toolbar.

2.4.3. Managing project authorizations

Only users that have the Administrator role and rights can have a read-write access to this page. Other users, depending on their roles, can have either a read-only access or no access to this page. For further information on access rights, see User roles/rights in the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the right authorization by the Administrator.

The **Project Authorizations** page in *Talend Administration Center* allows you to manage user authorizations. From this page, you can:

- visualize existing authorizations, see *Accessing the project authorization list*.
- give a user or a user group the right to access one or more projects, see *Authorizing users on projects*.
- change or delete existing authorizations, see *Changing or deleting authorizations on projects*.

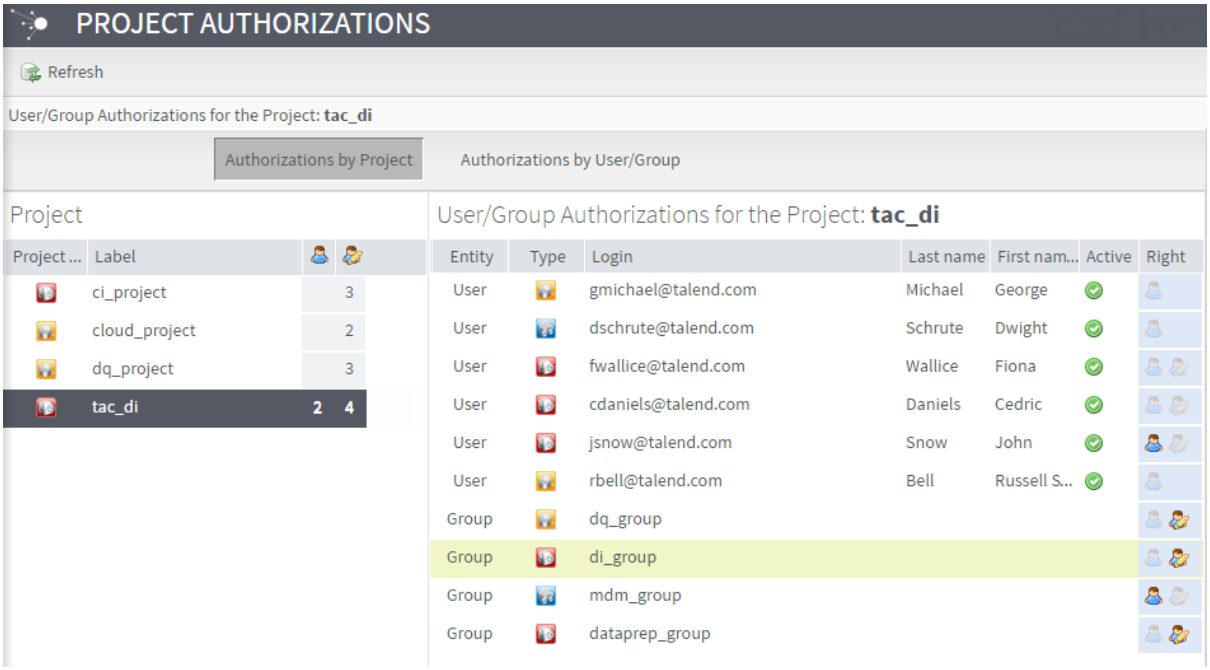
2.4.3.1. Accessing the project authorization list

To display the project authorization list for the users of *Talend Studio*:

- In the **Menu** tree-view, click **Project Authorizations**.

  The list of projects is displayed in the **Project** panel and the list of users is displayed in the **User/Group Authorizations for the Project: <projectName>** panel if you ordered authorizations by projects.

Note that the authorizations can be ordered by projects (**Authorizations by project**) or by users (**Authorizations by user/group**).



From this page, an Administrator can allocate resources and define user accesses to projects.

Authorizations can automatically appear on the **Project Authorizations** page if *Talend Studio* users created their sandbox project. For more information on sandbox projects, see *Managing sandbox projects*.

2.4.3.2. Authorizing users on projects

Administrators can give a user or user group the right to access one or more projects. Once the authorization is created, when any user of the Administration Center opens the **Project authorizations** page, he/she will have access only to the items for which the user has been granted the right authorization by the Administrator.

Note that the assigned users have to relaunch the Studio to take this authorization into account.

Prerequisite: To allocate resources and define user accesses to projects, the Administrator needs first to add projects to the list. For more information, see *Adding a project*.

If authorizations are ordered by projects

1. In the **Menu** tree-view, select **Project Authorizations** to display the authorization list.
2. In the **Project Authorizations** panel, select the project to which you want to assign a user or a user group.
3. In the **Right** column of the **User/Group** panel, give read or read and write permissions to a user or user group by clicking the corresponding icons.

   The **Read** and **Read write** icons show on the projects on which the user or group can work by default. If a user or group cannot work on a project, a prohibition icon indicates that you cannot give rights to this user: it depends on the **Type** that is defined during the user creation in the **Users** page.

The number of users that have read access as well as the number of users that have read and write access to a project are updated in the corresponding columns of the **Projects Authorizations** panel.

If authorizations are ordered by users or user groups

1. In the **Menu** tree-view, select **Project authorizations** to display the authorization list.
2. In the **User/Group** panel, select the user you want to assign to a project.
3. In the **Right** column of the **Projects Authorizations** panel, give read or read and write permissions to the user or user group by clicking the corresponding icons.

   The **Read** and **Read write** icons show on the projects on which the user or group can work by default. If a user or group cannot work on a project, a prohibition icon indicates that you cannot give rights to this user: it depends on the **Type** that is defined during the user creation in the **Users** page.

A user or user group can only have access to a project of the same type or a subordinate type as his. For more information about users' types, see *What domains can you work in depending on your user type and license*.

The number of users that have read access as well as the number of users that have read and write access to a project are updated in the corresponding columns of the **Projects Authorizations** panel.

2.4.3.3. Changing or deleting authorizations on projects

In the **User** panel of the **Projects authorizations** page, users' or user groups' rights show next to their names.

The types of projects available in the **Projects** panel depends on the license you are using. For more information, see *What domains can you work in depending on your user type and license*.

How to change users' authorizations

1. In the **User/Group** panel, select the user or user group whose rights you want to change.
2. In the **Project** panel, the **Read** and **Read write** icons show on the projects on which the user or group can work by default. If a user or group cannot work on a project, a prohibition icon indicates that you cannot give rights to this user: it depends on the **Type** that is defined during the user creation in the **Users** page.

   To switch between read-only and read-write, click the desired project then click the **Read write** icon.

How to delete users' authorizations

1. In the **User** panel, select the user or user group whose rights you want to delete.
2. In the **Project** panel, the **Read** and **Read write** icons show on the projects on which the user or group can work by default. If a user or group cannot work on a project, a prohibition icon indicates that you cannot give rights to this user: it depends on the **Type** that is defined during the user creation in the **Users** page.

   To delete the user's or group's rights, click the icon corresponding to the right you want to delete. The icon is greyed and the user or group has no rights on this project.

2.4.4. Managing project references

Only users that have the Administrator role and rights can have a read-write access to this page. Other users, depending on their roles, can have either a read-only access or no access to this page. For further information on access rights, see

User roles/rights in the Administration Center. When any user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the right authorization by the Administrator.

A project reference is a property that you can set for a project in *Talend Administration Center* so that all or some of the project items can be referenced by another project.

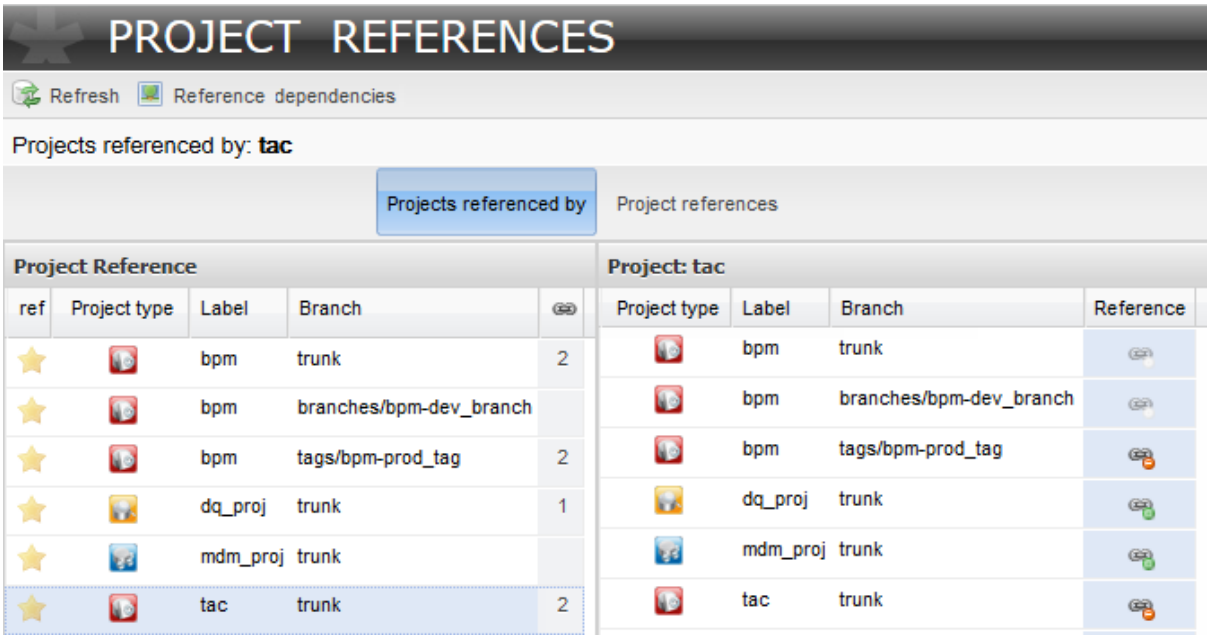
- When one project references another, the items (Jobs, Metadata, Business Modeler and so on) in the referenced project are available for reuse.
- When one project is stored on SVN or GIT, its items are structured in trunk or master and branches so that the reference can be established at either levels to provide more flexibility in project usability.

For more details on how to create branches for a project on *Talend Administration Center*, see To create a Git or SVN branch.

2.4.4.1. Accessing the project references page

To display the reference list for the projects created in *Talend Studio* or directly on *Talend Administration Center*:

In the **Menu** tree view, click **Project references** to access the **Reference projects** page.



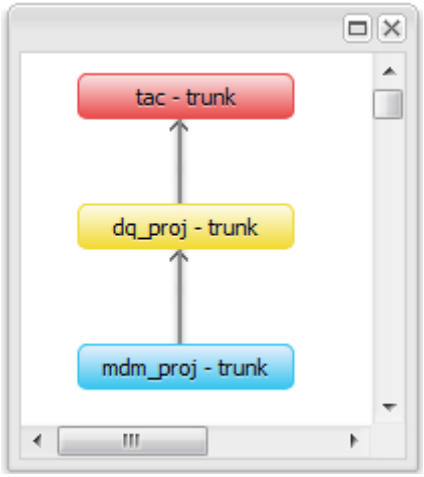
You need to define some projects as reference from the **Project** page in order to have reference projects listed on this page. For more information on how to define a reference project, see *Adding/removing a reference project*.

The main page is divided into two parts:

- the **Project Reference** panel lists projects you have defined as reference on the **Project** page.
- the **Project** panel shows the references established between projects.

Note that, by default, the list is ordered by reference projects (with the icon). If you click the **Project references** button on top of the panels, the list will be ordered by projects to set as a reference.

The **Reference dependencies** button on the top toolbar allows you to visualize the dependencies that exist on a given project.



On the **Project Reference** view, you can see information related to the reference projects as follows:

Column	Description
Reference	The icon shows when the corresponding project has been defined as reference.
Label	The name of the project created in *Talend Studio*
Branch	The name of the trunk and the branches established for each reference project.
Reference	Different icons show you whether you can set references between the selected projects: : you can set a reference between the selected projects. : a reference already exists between the selected projects. : you cannot set a reference between the selected projects.

2.4.4.2. Establishing a reference between two projects

If your repository is stored on Subversion or GIT, you can create a reference from the trunk/master or one branch of one project to the trunk/master or one branch of another project. Once you created the reference, the user of *Talend Studio* can access the trunk/master or the branch items and resources of **Project1** directly from the trunk/master or the branch of **Project2** to which it is referenced.

Prerequisites:

- You can establish references between projects only if:
  - you have read-write authorization for them,
  - the type of the project to be used as a reference is subordinate to the type of the referencing project. For example, a Data Quality project can be used as a reference for a Master Data Management project and not vice versa. For more information about project types, see *What domains can you work in depending on your user type and license*.
- You can not define TWO branches of a project as reference to the branch of another project. In addition, you can not create a cycle of references.

1. In the **Menu** tree-view, select **Project references** to open the project references page.
2. From the **Project Reference** panel, select the project, or its trunk/master or branch, you want to be used as a reference.

3. From the **Project** panel, select the different projects and add references to them.

   The number of references on the referenced projects is updated in the **Project Reference** panel.

   Note that you can also add project referencesvia the MetaServlet application, using the `createProjectReference` command. For more information on MetaServlet, see *Non-GUI operation in metaServlet*.

2.4.4.3. Deleting a project reference

To delete a reference from the selected project:

1. In the **Menu** tree-view, select **Project references** to open the project references page.
2. In the **Project** panel, select the project and click the reference icon.

   The reference is removed and the icon changes from to to .

   Note that you can also delete a project reference via the MetaServlet application, using the `deleteProjectReference` command. For more information on MetaServlet, see *Non-GUI operation in metaServlet*.

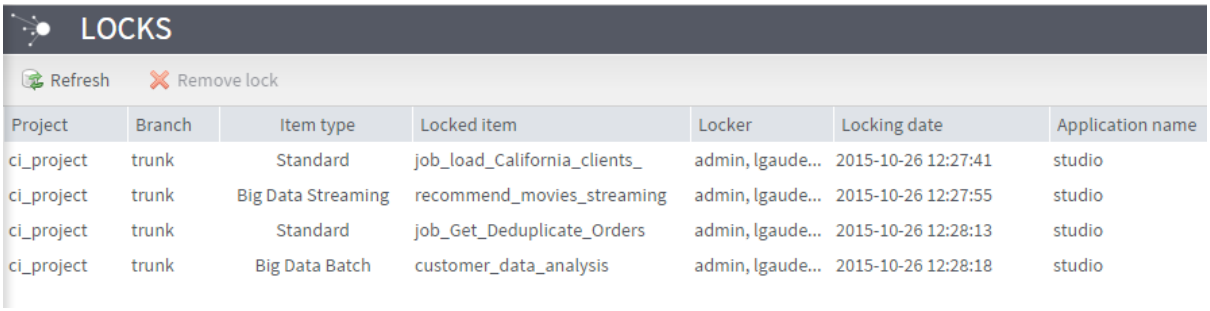
2.4.5. Removing locks on projects

Only users that have the Operation manager role and rights can have access to this page and to items for which the user has been granted the appropriate authorization by the Administrator. For further information on access rights, see User roles/rights in the Administration Center.

When a user starts working on an item contained in the Remote Repository, a lock is appended on it in the **Menu** tree view in order to prevent other users from concurrently making changes to the same item. This lock system helps to avoid edition conflicts between users sharing the same resources. Other users can still have a read-only access to this item until the lock is released.

Note that if you are working in cluster mode and a lock is added or removed from an item, the last status of the item will be synchronized in all clustered applications as locks are stored in the *Talend Administration Center* database. For more information about how to work in cluster mode, see *Working in cluster mode* .

To access the **Locks** page, click **Locks** in the **Menu** tree view. This page shows the list of *Talend Studio* projects being locked by users.



The list of projects is listed based on the Repository item being locked.

The lock list provides the following information:

Column	Description
Project	The name of the project to which the locked item belongs
Branch	The name of the branch containing the locked item
Item type	The type of the locked item
Locked item	The name of the locked item
Locker	The name of the user who is working on the locked item
Locking date	The item locking date
Application name	The name of the application in which the item is locked, studio or tac.

A lock can be appended on various types of items contained in the Remote Repository including:

- Business Models
- Job Designs
- Routines
- Metadata of various types (DB connection, File, etc.)
- other items such as documentations, etc.

In case of system crash or user absence, an Administrator can unlock an item via *Talend Administration Center*.

To remove a lock from one or several project items, complete the following:

1. On the **Locks** page, select the project item or items you want to remove the lock(s) from.
2. On the toolbar, click **Remove lock**.

The lock list is refreshed automatically, but you can refresh it any time by clicking **Refresh** on the toolbar.

2.4.6. Managing licenses

Only users that have the Administrator role and rights can have access to this page. For further information on access rights, see User roles/rights in the Administration Center.

From the license page in *Talend Administration Center*, an administrator can:

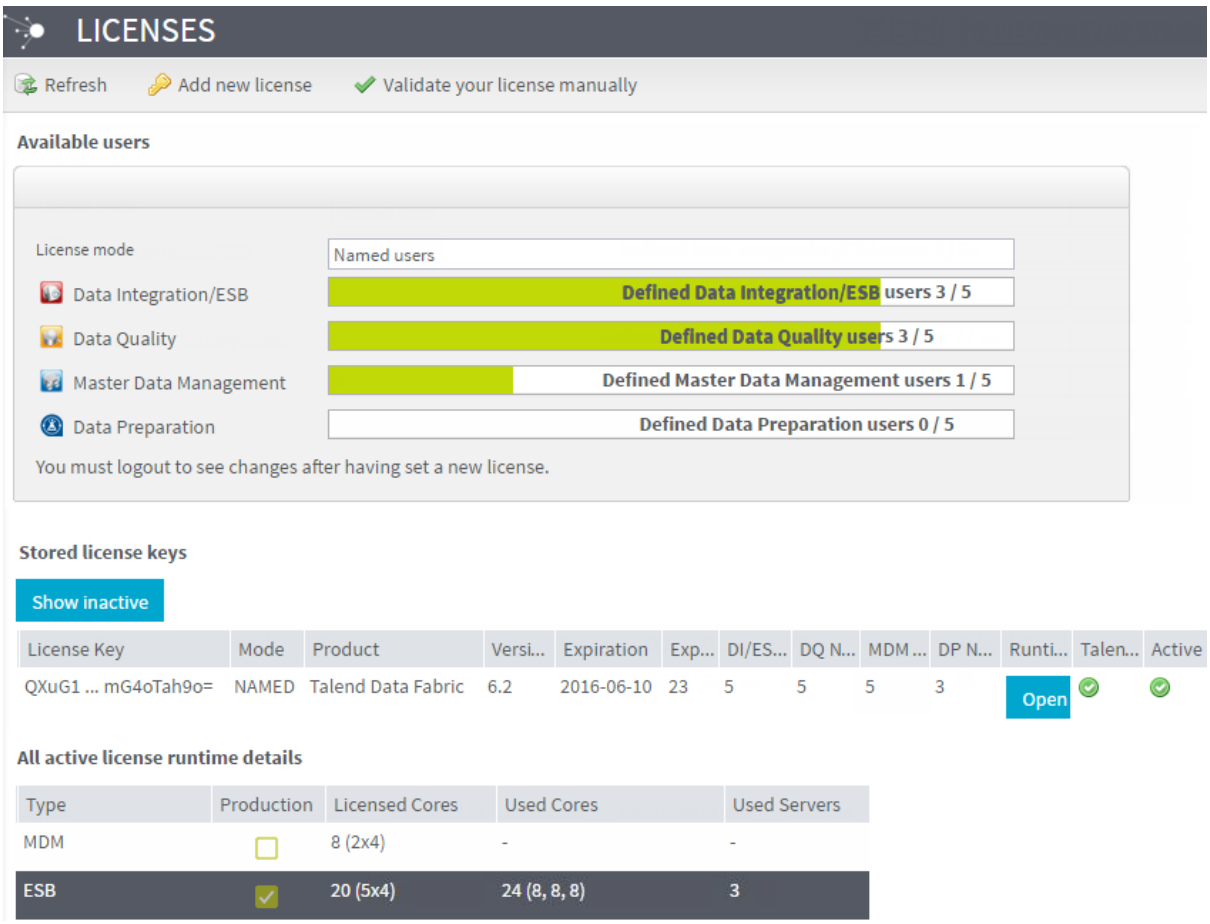
- check the parameters of the licenses and add new licenses. For more information, see *Adding one or more licenses*.
- validate the license. For more information, see *Generating a validation request*.

In the **Menu** tree view, click **Licenses** to display the license parameters for the Administration Center. The parameters displayed may vary depending on your license.

The **Available users** area shows the number of users created in the current active licenses, as well as the sum of users allowed in these active licenses.

The **Stored license keys** area shows all licenses and their parameters. If the **Show inactive** option is not selected, only the active licenses are displayed in the area.

The **All active license runtime details** area shows the number of CPU cores allowed by the licenses for ESB servers, the actual number of CPU cores used by all active ESB servers, and the number of active ESB servers.



The license parameters provide the following information:

Field/Tab	Description
License mode	**Mixed license**: This mode allows you to combine simultaneous and named license modes. **Simultaneous users**: This mode allows you to create as many users as necessary. However, only defined number of users are authorized to use *Talend Studio* and / or *Talend Administration Center* simultaneously. **Named users**: This mode allows you to create a limited number of users authorized to connect to *Talend Studio* and / or *Talend Administration Center*. This authorization is based on the user's login. For the above two license modes, a user is not allowed to connect simultaneously to two instances of the Studio and/or the Administration Center, but the user can simultaneously access both. In case of a crash of the Studio or of the Administration Center, your connection will be retained when you restart the application.
Data Integration/ESB	Indicates the number of created users out of the maximum number of users authorized to work on Data Integration or ESB projects.
Data Quality	Indicates the number of created users out of the maximum number of users authorized to work on Data Quality projects.
Master Data Management	Indicates the number of created users out of the maximum number of users authorized to work on Master Data Management projects.
ESB Runtime	Indicates the number of ESB Talend Runtime instances authorized.
Data Preparation	Indicates the number of created users out of the maximum number of users authorized to work on Data Preparation projects. This license type only includes Named users.
Product	Name of the Talend product.
Version	Version of the Talend product.

Field/Tab	Description
Expiration	License expiration date.
Expires in (days)	Number of days left before the license expires.
Runtime	Number of runtime servers allowed in the license. The **Open** button allows you to display the details (instances number and type, to be used in Production or not, etc.) of the runtime servers allowed for the selected license. Note that if you add several licenses that contain runtime servers, the sum of these runtime servers is displayed in the **All active runtime details** area.
Talend Cloud	Indicates whether Talend Cloud is included in the license.
Active	Status of the license. It can be either active ( ) or inactive ( ).

If your license is not or no longer valid, you can always access the **Users** page and remove or disable a user account, such as when you have changed the license and your new license allows fewer users than the old one.

A warning message will be displayed 20 days before your license expiration date and 10 days before your token expiration date.

2.4.6.1. Adding one or more licenses

Licenses may be:

- "incompatible": in this case, the **Product** or **Mode**, or both, is not the same in the licenses.
- "compatible": in this case, both **Product** and **Mode** are the same in the licenses.

Upload a new license

You need to upload a new license file to change the current active license.

1. In the **Licenses** page, click **Add new license** on the top toolbar to open the corresponding popup window.
2. From this window, click **Browse...** to select the file containing the new license, then click **Upload** to set the new license.

Upon validation of your new license, the license key and its parameters are displayed in the **Stored license keys** area, along with the other licenses.

You can also set a new license via the MetaServlet application, using the `setLicenseKey` command. For more information on MetaServlet, see *Non-GUI operation in metaServlet*.

Activate or reactivate a specific license

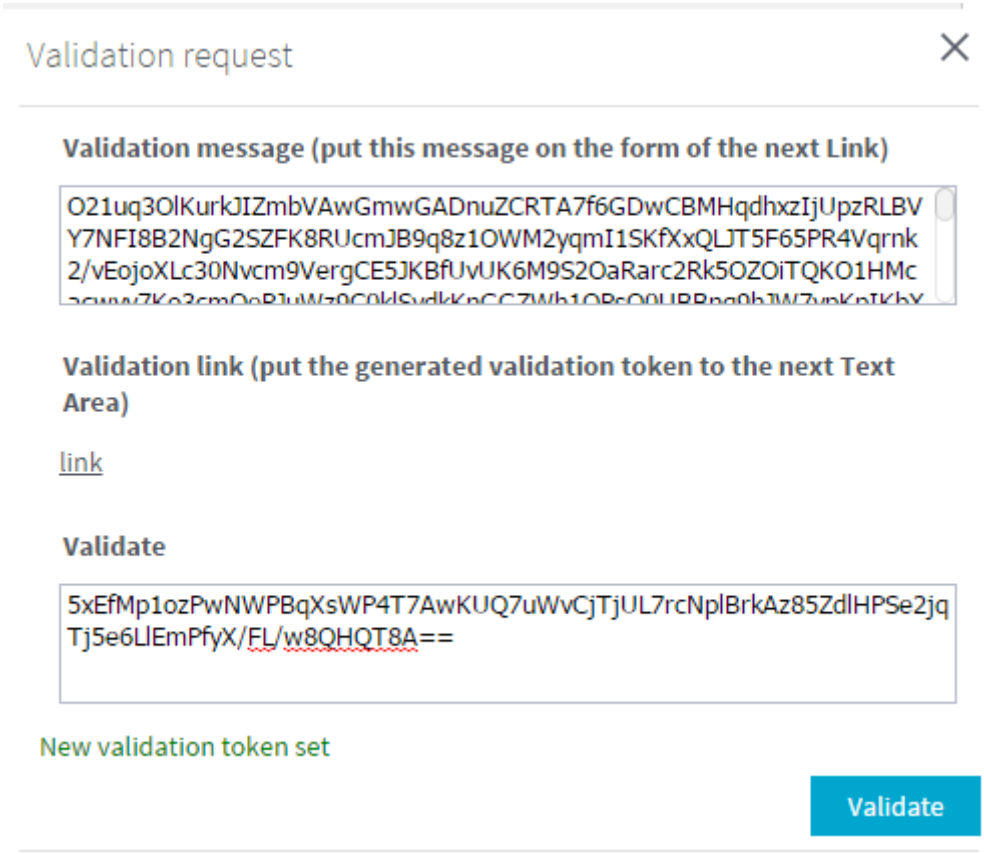
If you have uploaded more than one license and want to activate a specific license, do the following.

1. Select the license you want to activate.
2. Right-click and select **Reactivate**.

- If the activated license is "incompatible" with the other stored licenses, the other licenses are deactivated. This may result in the number of users exceeding the limit allowed in the new license. In this case, the administrator must access the **Users** or the **Licenses** pages in unblocking mode to fix this issue.
- If the activated license is "compatible" with at least one of the stored license, all these compatible licenses are set to **Active**.

2.4.6.2. Generating a validation request

Usually, license validation needs an internet connection, but it is also possible to validate a license without connection.



If the server hosting *Talend Administration Center* or your browser has access to internet, do the following to generate a validation request:

1. On the top toolbar, click **Validate your license manually** to open the **[Validation request]** window.
2. Copy the validation message to your clipboard, then click **link** to open the validation form in a new tab.
3. From this page, paste the validation message in the blank area then click **Get your validation token**. Your validation token appears, copy it to your clipboard.
4. Go back to the **[Validation request]** window and paste the token in the **Validate** area.
5. Click the **Validate** button to validate the operation and close the popup window.

If neither the server nor the browser has access to internet, do the following to generate a validation request:

1. On the top toolbar, click **Validate your license manually** to open the **[Validation request]** popup.
2. Click **link**. A Web page is displayed with a connection error messages.
3. Copy the URL from the address bar and paste it in a text file.
4. Paste the URL in a browser that has access to internet and press **Enter**.
5. From this page, paste the validation message in the blank area then click **Get your validation token**. Your validation token appears, copy it to your clipboard.
6. Go back to the **[Validation request]** window and paste the token in the **Validate** area.

7. Click the **Validate** button to validate the operation and close the popup window.

2.5. Managing rights associated with roles

Only users who have the Administrator role can have read-write access to this page. For further information on access rights, see User roles/rights in the Administration Center.

The **Rights management** page in *Talend Administration Center* allows you to manage user rights according to their roles. From this page, you can restrict access rights to some roles.

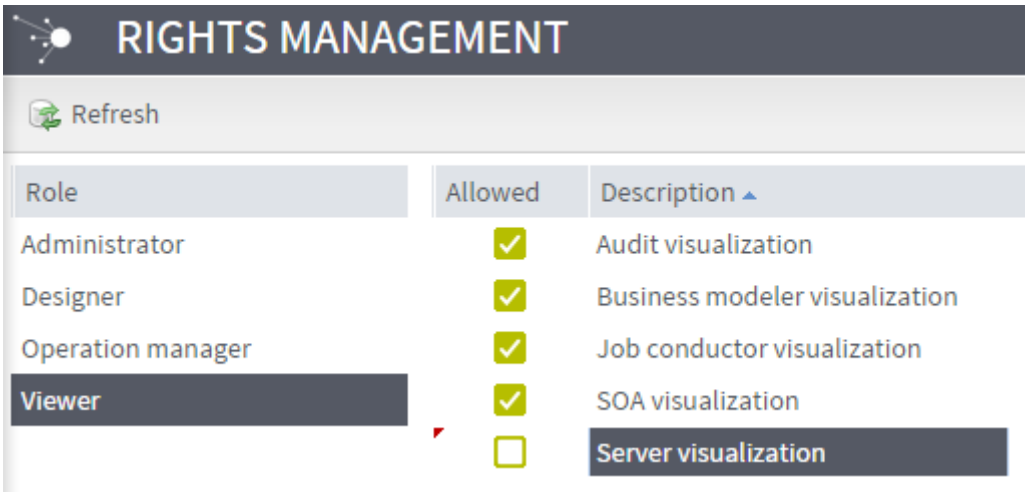
2.5.1. Accessing the list of rights and roles

To display the list of rights available to users with a specific role:

In the **Menu** tree-view, click **Rights management**.

The list of roles is displayed in the **Role** panel on the left and the list of associated rights is displayed in the right panel.

For example, the **User management** right allows you to create, edit or delete users while the **User visualization** right only gives to a specific role a right to visualize users.



2.5.2. Restricting rights to specific roles

In the **Rights management** page, the users' rights show next to the roles. The rights displayed depend on the role which is defined in the **Users** page. For more information, see *User roles/rights in the Administration Center*.

To perform this action via the MetaServlet application, use the `setRoleLimitation` command. For more information about the MetaServlet parameters, see *Parameters and actions in metaServlet*.

1. In the **Role** panel, select the role for which you want to change the rights.
2. In the panel on the right, rights are listed in the **Description** column, and are selected by default in the **Allowed** column.

   To restrict the rights associated with this role, clear the corresponding check boxes.

Note that, for users with **Designer** role to have access to user libraries configuration, they need to have the corresponding **Configuration visualization** right selected on this page. For more information on how to configure libraries location, see *Setting up the user library location*.

2.6. Managing notifications

Only users that have the Administrator or Operation manager roles and rights can have a read-write access to this page. For further information on access rights, see User roles/rights in the Administration Center.

The **Notifications** page allows you to configure alerts based on events. An event can be a user creation or deletion, a task failure or a change in the status of one or more job servers (whether the status changes from up to down or down to up).

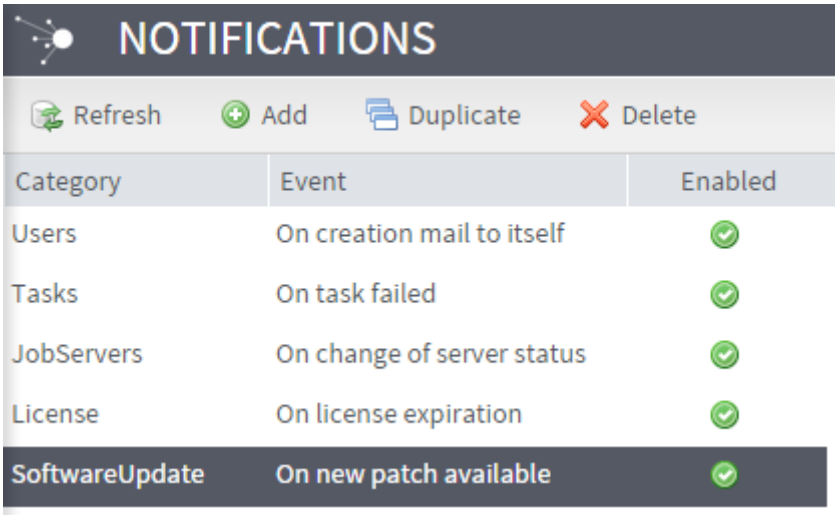
If one of the SMTP parameters of the **Configuration** page is down, a warning will display at the top of the **Notifications** page to inform you that the notification might not work due to an SMTP server connection error.

Prerequisites:

Before configuring a notification message, you must configure the SMTP protocol of your email server. For more information on how to configure the SMTP protocol, see *Setting up an SMTP protocol*.

2.6.1. Accessing the notification list

On the **Menu** tree view to the left, click **Notifications** to display the notification list.



When you access the **Notifications** page for the first time, a default notification message appears on the list. This notification alerts users that their *Talend Administration Center* account has been created.

When you delete a user, he/she is automatically deleted from the notifications they subscribed. If the deleted user is the only subscriber to the notification, this notification will be automatically deleted. For more information on how to delete a user, see Deleting an account.

The notification list provides the following information:

Column	Description
Category	The notification category: **Tasks**, **Users**, **JobServers**, **License** and **SoftwareUpdate**.
Event	Type of the event to be notified:

Column	Description	
	Tasks	**On task failed**: sends a notification if an error is generated when a task is triggered.
	Users	**On creation mailTo itself**: sends an email to the user in order to notify him that his *Talend Administration Center* account has been created. **On user creation**: sends an email notifying the user who subscribes to the notification service that a new user account has been created. **On user deletion**: sends an email notifying the user who subscribes to this notification service that a user has been deleted.
	Servers	**On change of server status**: sends an email to the user in order to notify them when the status of one or more job servers changes from up to down or back to up.
	License	**On license expiration**: sends an email to the user a few days before his license expires. **On token expiration**: sends an email to the user a few days before his token expires.
	SoftwareUpdate	**On new patch available** : sends an email to the user in order to notify him that a new patch is available. For more information, see *Checking for updates*.
Enabled	Select the check box to activate the notification.	

The toolbar on the **Notifications** page allows you to refresh the notification list at any time and to add or delete a notification.

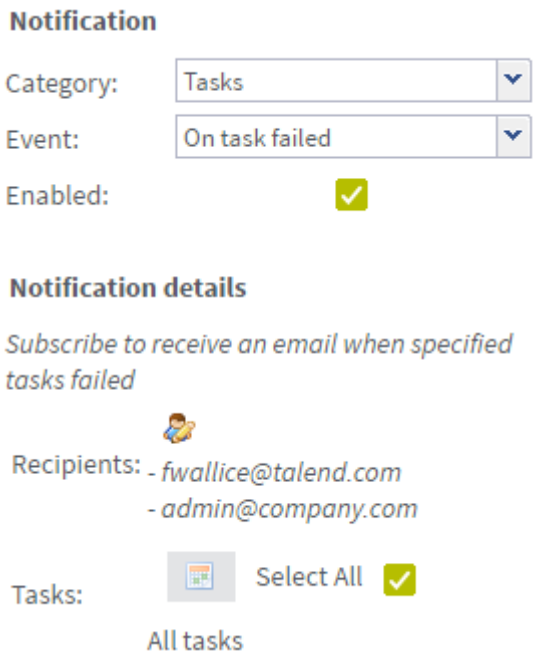
The panel to the right of the **Notifications** page allows you to create a new notification or to modify a selected notification. For further information, see *Adding a notification* and *Modifying a notification*.

You can display or hide this panel by clicking the « button or the » button in the top right corner.

2.6.2. Adding a notification

2.6.2.1. How to add a task-based notification

1. On the **Notifications** page, click **Add** on the toolbar to create a new notification.

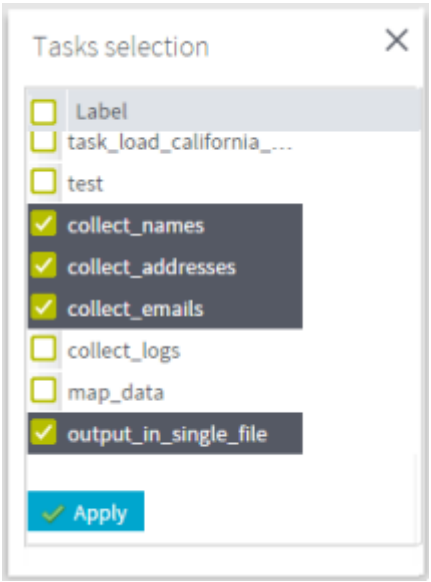


2. On the **Notification** panel to the right, set the following information:

Field	Description
Category	Select the **Tasks** category from the drop-down list.
Event	Select the type of the event for which to send the notification:
Tasks	Select **On task failed** from the drop-down list to send an alert when the task monitored encounters an error.
Enabled	Select this check box to activate the notification service.
Recipients	Click  to add a new recipient of the notification messages.
Tasks	Click  to add one by one the tasks to monitor, or click the **Select All** button to send an email when any of the tasks fail.

3. Click  to show the **[Mails Selection]** dialog box.
4. Select the check box(es) next to the user(s) to be added to the notification **Recipients** list.
5. Click **Apply** to close the dialog box and return to the **Notifications** page.
6. If you click the **Select All** button, an email is sent when any of the tasks fail.

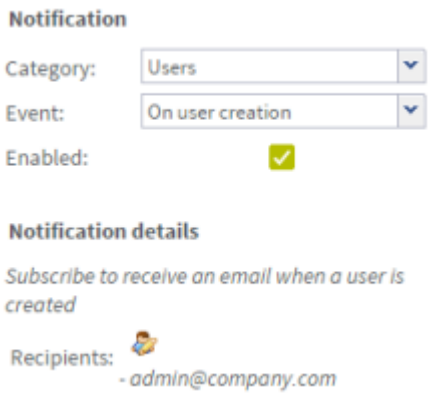
   If you click the  button, the **[Tasks Selection]** dialog box pops up.



   On the list, select the check box(es) corresponding to the tasks to be monitored.
7. Click **Apply** to close the dialog box and go back to the **Notifications** page.
8. On the **Notifications** page, click **Save** to validate the changes or click **Cancel** to ignore them.

2.6.2.2. How to add a user-based notification

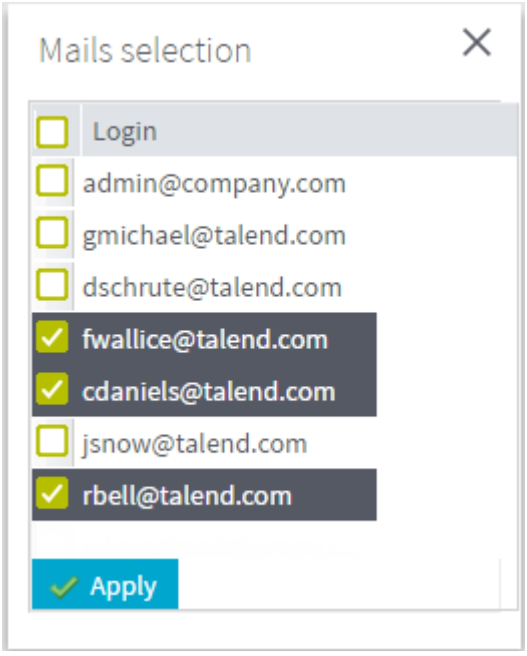
1. On the **Notifications** page, click **Add** on the toolbar to create a new notification.



2. On the **Notification** panel to the right, set the following information:

Field	Description
Category	Select the **Users** category from the drop down list.
Event	Select the type of the event for which to send the notification:
Users	Select **On creation mailTo itself** to notify the user that its *Talend Administration Center* account has been created. Select **On user creation** to send an email notifying the user who subscribes to this notification type when a new account is created. Select **On user deletion** to send an email notifying the user who subscribes to this notification type when a user account is deleted.
Enabled	Select this check box to activate the notification service.
Recipients	Click the button to add a new recipient of the notification emails. This field is not available when you select **MailNewUserNotification**.

3. Click the button to show the **[Mails Selection]** dialog box.



4. On the list, select the check box(es) corresponding to the users who want to receive notifications.

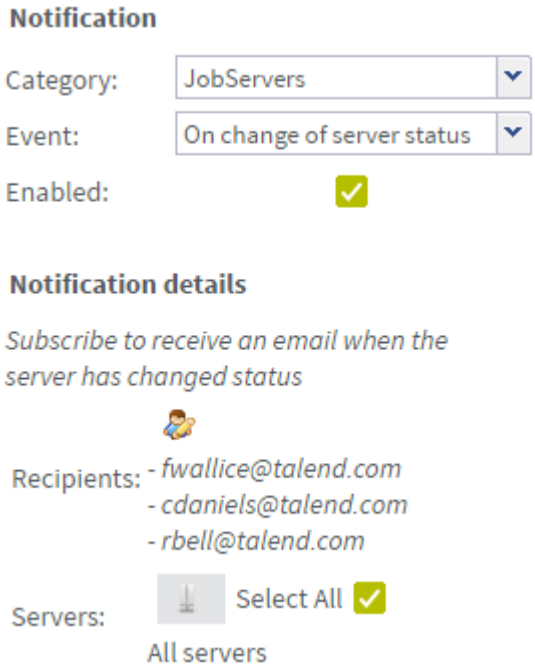
5. Click **Apply** to close the dialog box and go back to the **Notifications** page.

6. On the **Notifications** page, click **Save** to validate your changes or click **Cancel** to ignore them.

2.6.2.3. How to add a server-based notification

This email notification will alert specified users when the job server status changes from up to down or to up again. It will also alert the users when the job server is up and running but can not retrieve some monitoring information.

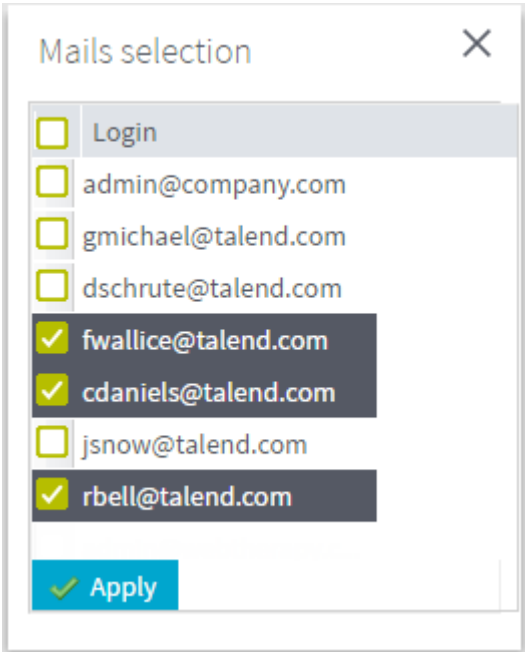
1. On the **Notifications** page, click **Add** on the toolbar to create a new notification.



2. On the **Notification** panel to the right, set the following information:

Field	Description
Category	Select the **Servers** category from the drop-down list.
Event	Select the type of the event for which to send the notification:
Servers	Select **On change of server status** from the drop-down list to send an email alert each time the server is down or back to up and running.
Enabled	Select this check box to activate the notification service.
Recipients	Click to add a new recipient of the notification messages.
Tasks	Click to add the execution server to monitor, or click the **Select All** button to send an email when any of the servers is down.

3. Click to show the **[Mails Selection]** dialog box.



4. Select the check box(es) next to the user(s) you want to add to the notification **Recipients** list.
5. Click **Apply** to close the dialog box.

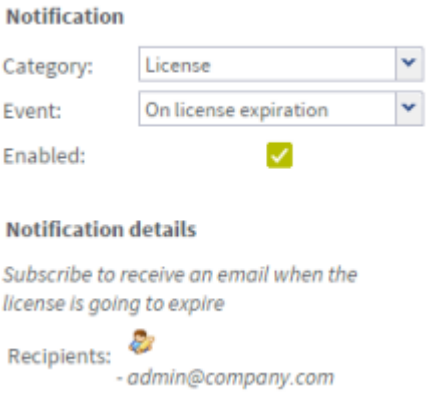
   The selected emails display in the **Recipients** list in the **Notification** panel.
6. Click  to show the **[Job server selection]** dialog box.
7. On the list, select the check box(es) corresponding to the servers to be monitored.
8. Click **Apply** to close the dialog box.

   The selected servers display in the **JobServers** list in the **Notification** panel.
9. On the **Notifications** page, click **Save** to validate the changes or click **Cancel** to ignore them.

2.6.2.4. How to add a license-based notification

This email notification will alert specified users when their licence or their token license is going to expire.

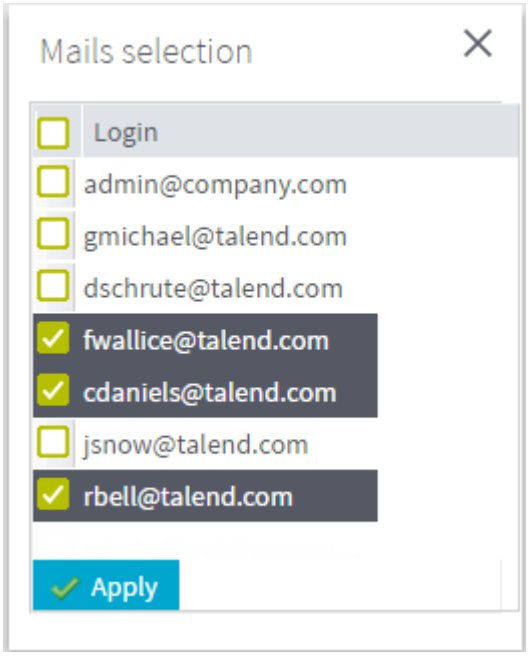
1. On the **Notifications** page, click **Add** on the toolbar to create a new notification.



2. On the **Notification** panel to the right, set the following information:

Field		Description
Category	Select the **License** category from the drop-down list.	
Event	Select the type of the event for which to send the notification:	
	License	Select **On license expiration** to send an email notifying the user who subscribes to this notification type when its license is going to expire. Select **On token expiration** to send an email notifying the user who subscribes to this notification type when its license is going to expire.
Enabled	Select this check box to activate the notification service.	
Recipients	Click  to add a new recipient of the notification messages.	

3. Click  to show the **[Mails Selection]** dialog box.



4. Select the check box(es) next to the user(s) you want to add to the notification **Recipients** list.

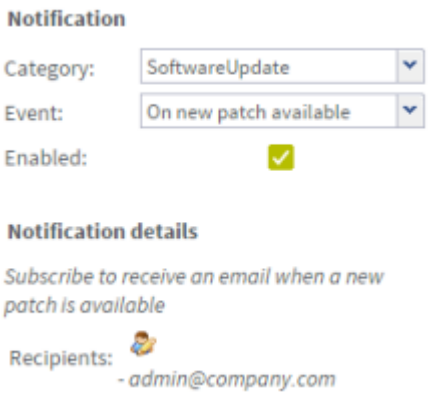
5. Click **Apply** to close the dialog box.

   The selected emails display in the **Recipients** list in the **Notification** panel.

2.6.2.5. How to add an update-based notification

This email notification will alert specified users when patches are available for download.

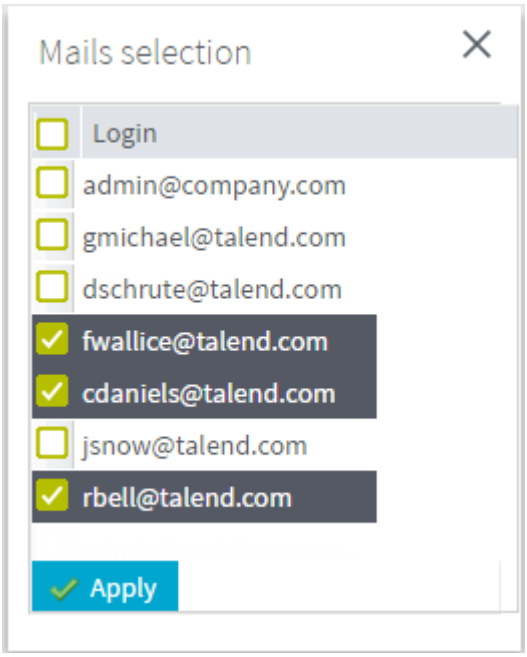
1. On the **Notifications** page, click **Add** on the toolbar to create a new notification.



2. On the **Notification** panel to the right, do the following:

Field		Description
Category	Select the **SoftwareUpdate** category from the drop-down list.	
Event	Select the type of the event for which to send the notification:	
	SoftwareUpdate	Select **On new patch available** to send an email notifying the user who subscribes to this notification type when a new patch is available for download.
Enabled	Select this check box to activate the notification service.	
Recipients	Click to add a new recipient of the notification messages.	

3. Click to show the **[Mails Selection]** dialog box.



4. Select the check box(es) next to the user(s) you want to add to the notification **Recipients** list.

5. Click **Apply** to close the dialog box.

   The selected emails display in the **Recipients** list in the **Notification** panel.

2.6.3. Modifying a notification

To modify a notification, complete the following:

1. On the **Menu** tree view, select **Notifications** to access the notification list.
2. Select the notification that you want to modify.
3. On the **Notification** panel, modify the information.
4. Click **Save** to validate the changes or click **Cancel** to ignore them.

2.6.4. Activating/deactivating a notification

You can activate or deactivate a notification according to your needs.

To do this, complete the following:

1. On the **Notifications** page, select the notification you need to activate or deactivate from the list.
2. On the **Notification** panel, clear the **Active** check box to deactivate the notification or select the check box to activate it.
3. Click **Save** to validate the changes or click **Cancel** to ignore them.

2.6.5. Deleting a notification

To delete a notification, complete the following:

1. On the **Notifications** page, select the notification you want to delete.
2. On the toolbar, click the **Delete** button. A dialog box pops up asking for confirmation.
3. Click **OK** to close the dialog box and delete the notification from the list.

When you delete a user, he/she is automatically deleted from the notifications they subscribed. If the deleted user is the only subscriber to the notification, this notification will be automatically deleted. For more information on how to delete a user, see Deleting an account.

2.6.6. Customizing the notification list

You can sort the notification list according to various criteria. You can also display or hide one or several columns of the list.

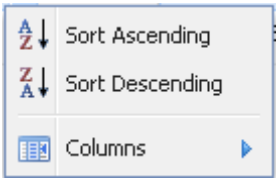
1. On the notification list, click the down arrow on any of the columns.
2. On the drop-down list, select:

Element	To..
Sort Ascending	Sort the list in the ascendant order.

Element	To..
Sort Descending	Sort the list in the descendant order.
Columns	Display a drop-down list containing all the available columns. Select the check boxes corresponding to the columns you want to display or clear those corresponding to the columns you want to hide.

By default, the accounts are regrouped by **Category**.

The following figure illustrates the drop-down list of options used to sort the notifications.



2.7. Checking for updates

From *Talend Administration Center* home page, you can access the **Software update** page that allows you to check for the latest patches of your Studio. These patches are retrieved from software update repositories.

For more information on how to set the parameters on the **Configuration** page, see *Setting up Software Update parameters* .

These parameters must be correctly filled in order for the Web application to connect to the software update repository. Otherwise, a message will be displayed in the **Software update** page to inform you that the repository URL is unreachable.

For more information on the software update repositories, see the *Talend Installation Guide*.

Accessing the Software Update page

- To access this page, select **Software Update** in the **Menu** tree view.

  From this page, you can:

  - see the current version of *Talend Administration Center*,
  - accept the patches available for your Studio,
  - see all patches that were previously accepted.

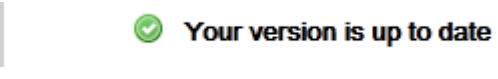
  Note that you can set a notification that will warn you when new patches are available. For more information, see *Managing notifications*.

Checking the current version

- Select **Software update** in the **Menu** and see the version number of your current version.

  You can see below the **See all accepted patches** hyperlink pointing to a page where you can visualize all the updates of your current version that have been accepted.

  If your version is up-to-date and no patch is available, you will see a message indicating that **your version is up to date**.

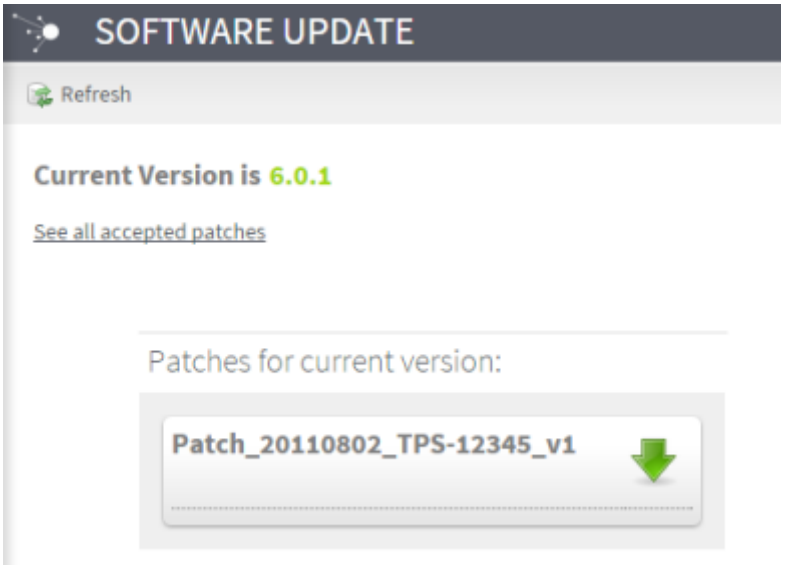


If there are some patches that you can download, you will receive a message in the banner notifying you that patches are available, and these patches will appear on the page.

Accepting a new patch

You can also accept patches for the Studio in order to improve its performance.

Note that you will only be able to see and accept patches available for the current version of your Studio.



1. Under the **Patches for current version** area, select the patch you want to add to your current version.
2. Click the icon to confirm your choice and download the desired patch.

   Once you have downloaded a patch, click **Refresh**. You can see that it no longer appears in the **Patches for current version** area.

   When all the patches have been accepted, a message is displayed, indicating that **your version is up to date**.

   The next time you start the Studio, the patches you have accepted in *Talend Administration Center* will be automatically detected.

2.8. Changing user passwords

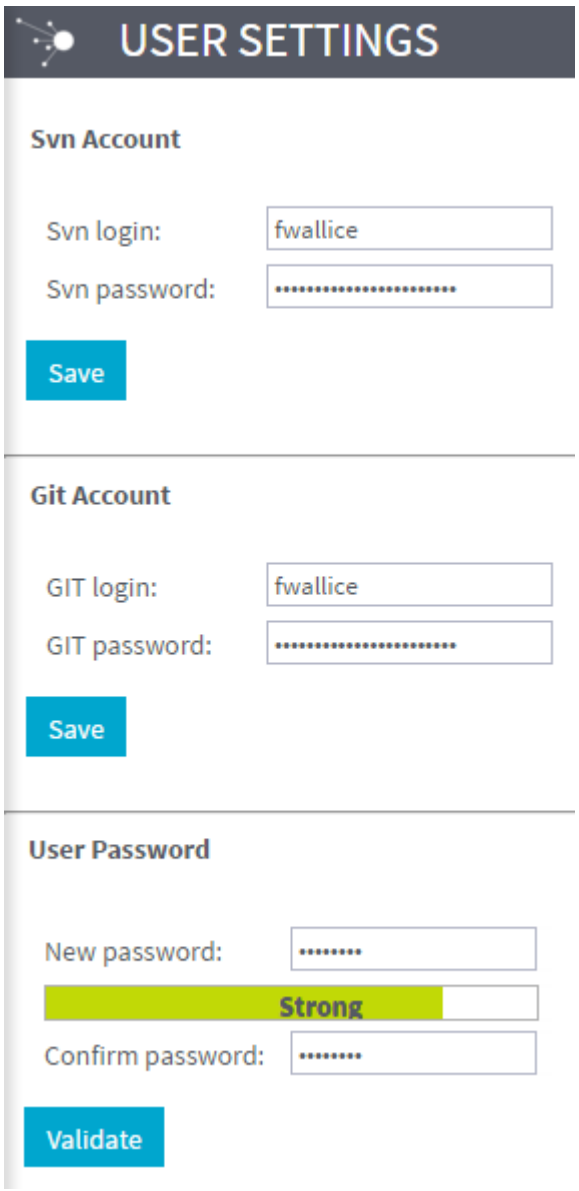
On the **User settings** page, any user can change his/her password to connect to *Talend* applications, as well as his/her login and password to SVN, via *Talend Administration Center*. To change your password, complete the following:

1. Log on to *Talend Administration Center* web application.

   The menus and menus items vary according to your role/rights (**Administrator**, **Operation manager**, **Designer** or **Viewer**) in *Talend Administration Center*.

   Only users with active accounts can access the Administration Center and change their password.

2. In the **Menu** tree view of the Administration Center, select **User settings** to display the corresponding page.



In the **Svn/Git Account** area:

3. Type in or modify your SVN/Git login and password in the corresponding fields.

   Note that the SVN/Git login and password must correspond to a user that has been previously created in SVN/Git.

4. Click **Save** to confirm these modifications.

   In the **User Password** area:

5. Enter your new password in the **New password** field.

   The information bar below the field will indicate if the newly entered password is **Very weak**, **Medium** or **Strong**.

6. Enter the new password in the **Confirm password** field and then click **Validate** to confirm your modification.

Eventually, a message displays to confirm that the modification has been carried out without issue. Otherwise, an error message points out the issue that needs to be corrected for the modifications to be taken into account.

Chapter 3. Migrating your projects and generating reports

If you migrated to a newer version of *Talend Administration Center* and want to retrieve your existing projects, you may want to migrate these projects. *Talend Administration Center* allows you to select the projects to be migrated and to generate corresponding reports using the Commandline applications.

The **Migration Check** page of *Talend Administration Center* allows you to:

- connect the previous version of your CommandLine application to the new one,
- migrate each existing project,
- generate and download a report for each migration.

Note that you can also migrate projects and generate reports directly from the CommandLine thanks to the `migrationCheck` and `generateMigrationReport` command. For more information about these commands, display the Help provided in the CommandLine. For more information on the CommandLine, see the **CommandLine** appendix in *Talend Administration Center User Guide*.

3.1. Prerequisites

To perform a migration of your projects, you need to have previously:

- launched the CommandLine application that was connected to the previous version of *Talend Administration Center* (old CommandLine) and set its parameters on the **Configuration** page of the web application.
- launched the CommandLine application that is connected to the current version of *Talend Administration Center* (new CommandLine) and set its parameters on the **Configuration** page of the web application.
- backed up the SVN repository that contains your existing projects (using the `svnadmin dump` command) and restored it to a new SVN repository.
- (optional, to optimize the migration reports) installed patches in the CommandLine in order to know more precisely whether the Jobs were generating successfully in the previous versions. For more information, see the article How to improve the Migration Check report.

(Optional) By default, migration reports are stored in the following folders: */Talend/MigrationCheck/reports* on Linux or *C:/Talend/MigrationCheck/reports* on Windows. If you want to edit the default path to the folder where your reports will be stored, you need to do so in the *configuration.properties* file:

1. Open the following file:

   <TomcatPath>/webapps/org.talend.administrator/WEB-INF/classes/configuration.properties

2. Add the following parameter and value, then save your changes:

   ```
   migrationCheck.conf.reportPath=<FolderPath>
   ```

   where `<FolderPath>` corresponds to the path to the folder where you want to store your migration reports.

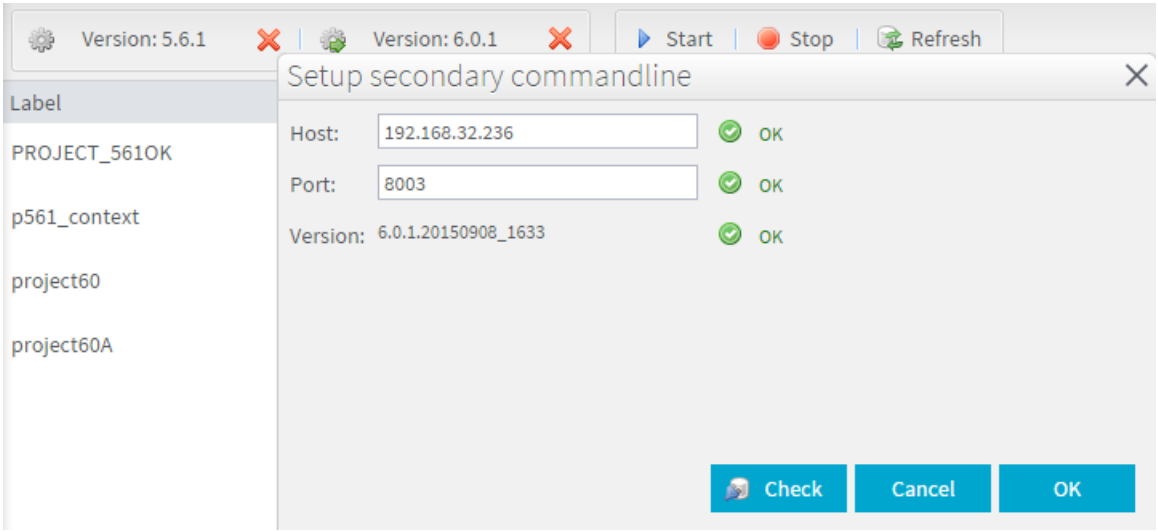
3.2. Migrating projects

To migrate your projects, proceed as follows:

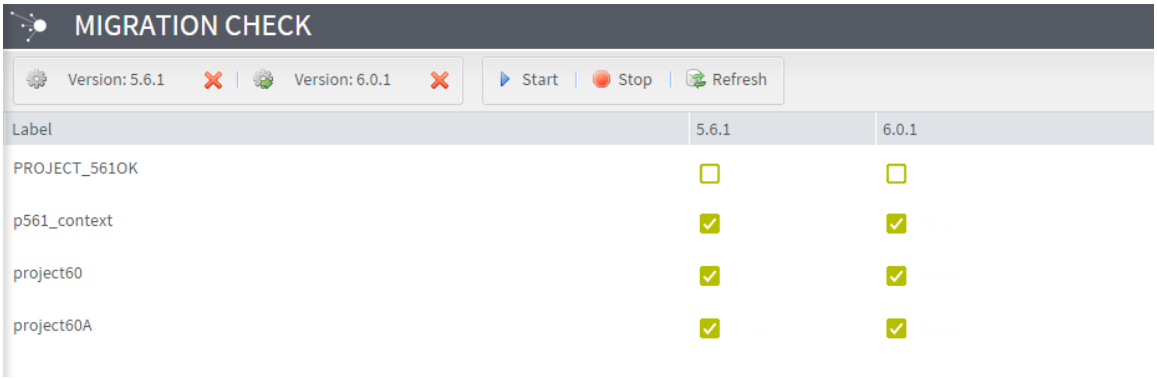
1. In the **Menu** tree view of *Talend Administration Center*, click **Migration Check** to open the corresponding page.

   You can also access it by clicking the **Project Check** button in the **Database configuration** page of the web application.

2. Click the CommandLine buttons on the top toolbar to configure the connections to both source (old) and target (new) CommandLine applications.

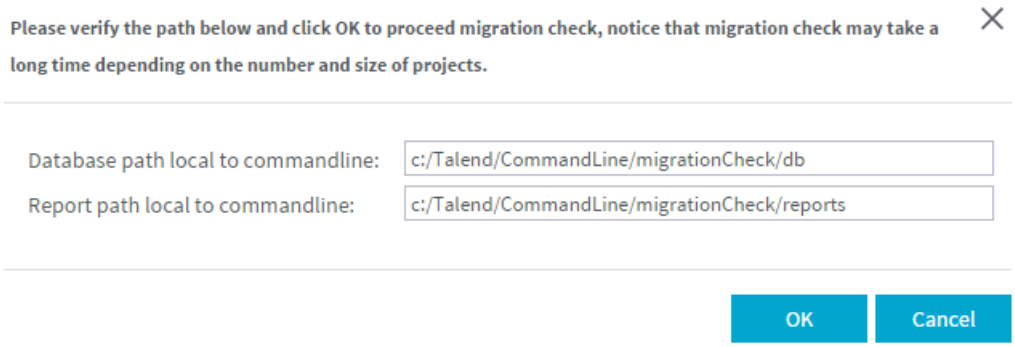


3. Select the projects you want to migrate.

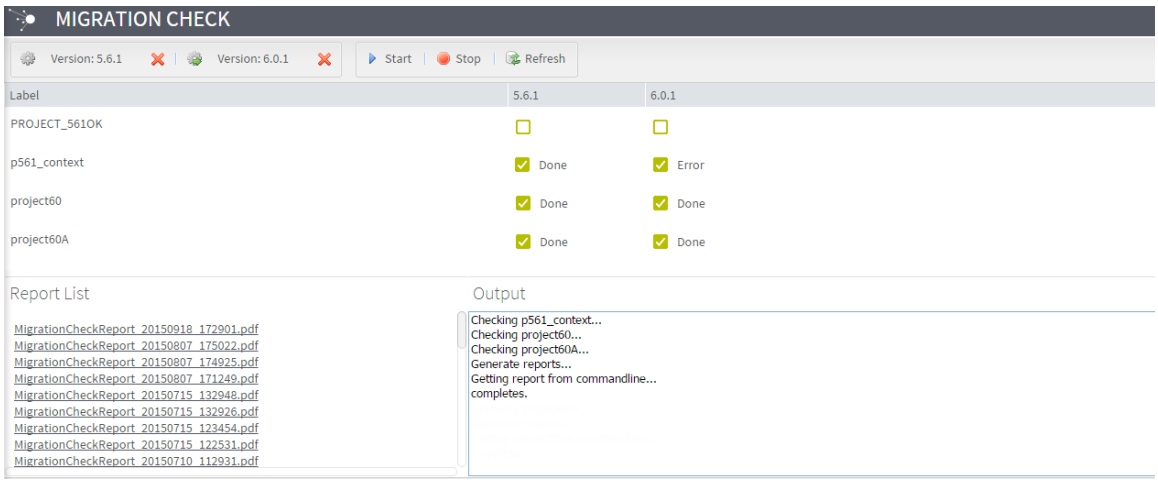


4. Click **Start** on the top toolbar to start the migration of your projects.

5. In the pop-up window that opens, enter the paths to the local directories where the database and report will be stored and click **OK**.



6. The migration starts and reports are generated. For more information on reports, see *Accessing detailed reports on migration*.



The migration check results are listed in the project list.

Icon	Meaning
Done	The project migration check does not contain any error.
Error	The project migration check contains errors.
	The project is not included in the migration check.

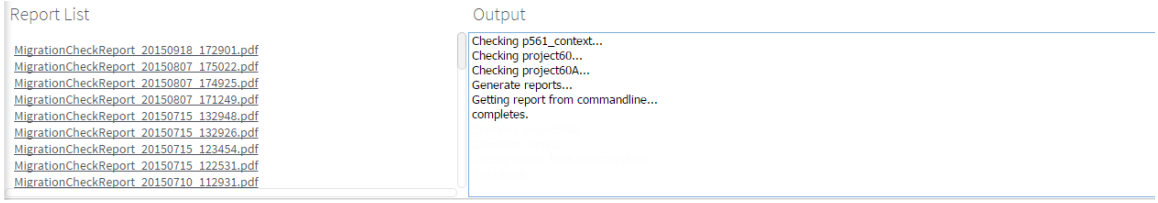
3.3. Accessing detailed reports on migration

Once you have migrated your existing projects, you are able to visualize the reports containing the details of the migration. By default these reports are stored in your local machine but they can also be downloaded directly from *Talend Administration Center*.

Note that, by default, the Migration Check reports give you details about the compilation status of the Jobs generated in the latest version of the product. Talend offers you the possibility to optimize the migration reports by installing patches in the CommandLine in order to know more precisely whether the Jobs were generating successfully in the previous versions. For more information, see the article How to improve the Migration Check report.

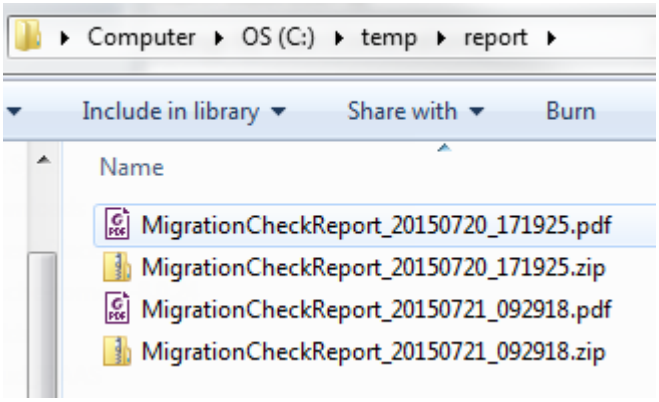
From Talend Administration Center

- On the **Migration Check** page, click the generated *.pdf* report of your choice in the **Report List** area.



On your local machine

- Go to the directory where reports are stored (path directory you have defined before migration). See *Migrating projects* for more information.



The generated reports contain details about migration status, JDK version used, project and Job errors.

Talend Migration Check

Project List

Project	5.6.1	6.0.1
P561_CONTEXT	OK	2 items compile failed 2 jars missing 0 components missing
PROJECT60	OK	OK
PROJECT60A	OK	OK

To obtain more details regarding a project migration check, click the name of a project. The number of items migrated, missing components or libraries and so on are listed.

Talend Migration Check

Details of P561_CONTEXT

Project Name	P561_CONTEXT			
Description				
Project Type	DI			
Author	admin@company.com			
Product Version	Talend Data Fabric-6.0.1.20150908_1633			
	5.6.1		**6.0.1**	
	Total Count	**Failed Count**	**Total Count**	**Failed Count**
Job	0	0	1	1

Jars missing in 6.0.1

org.talend.dataquality.parser.jar
antlr-runtime-3.5.2.jar

Chapter 4. Backing up databases and SVN repositories

The **Backup** page allows you to schedule the backup of your databases (administration center database, Audit database, Talend Activity Monitoring Console database, etc.) and SVN repositories.

On the **Backup** page, you are able to:

- schedule the backup of your databases and/or SVN repositories and define the frequency of backups,
- run a backup of your databases and/or SVN repositories manually,
- store the backed up databases or SVN repositories in a specified directory.

4.1. Prerequisites

To perform a backup through the **Backup** page, you need to have previously downloaded and installed the utility which allows you to perform this backup:

- If you want to backup your database, install:
  - mysqldump for MySQL databases
  - sqlcmd for SQL Server databases
  - exp for Oracle databases
  - pg_dump for PostgreSQL databases
- If you want to backup your SVN repository, install:
  - svnadmin for local SVN repositories
  - svnrdump for remote SVN repositories

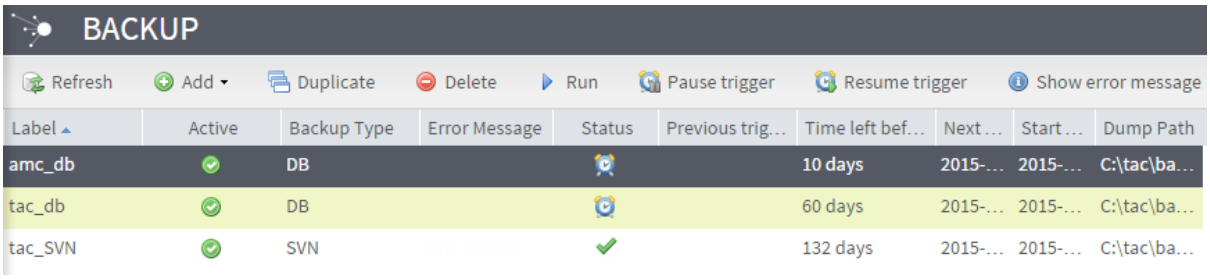
Make sure the path to the utilities you want to use is configured in the system environment variables before starting *Talend Administration Center*.

4.2. Scheduling a backup

On the **Backup** page, you can schedule the backup of your databases (administration center database, Audit database, Talend Activity Monitoring Console database, etc.) and SVN repositories.

Only users who have the Administrator role can have read-write access to this page. For further information on access rights, see User roles/rights in the Administration Center.

In the **Menu** tree view, click **Backup** to open the corresponding page.



Scheduling the backup of your database

Before you complete this procedure, make sure you have installed the utility which allows you to perform a backup. For more information, see *Prerequisites*.

1. In the **Add** list of the top toolbar, select **Add DB**. A form which allows you to schedule your backup opens.
2. Fill in the following information:

Label	Description
Label	Type in the name of the backup operation to be triggered.
Active	Select/clear this check box to activate/deactivate this backup operation.
Description	Provide, if needed, any useful information regarding the operation to be carried out.
Dump folder	Type in the path to the folder where the backed up database will be stored.

Label	Description
Database	In the list, select the database type to which you want to connect.
Host	Type in the IP address of the server hosting the database.
Port or **Instance**	Type in the database server port or instance.
Username and **Password**	Type in the login name and password to the database.
Database name	Type in the name of the database to connect to.
Command	Command used to back up your database. Note that you can edit this command according to your needs.
Open UI configurer	Click this button to open a dialog box in which you can select the hour and date items at which you want the backup operation to be executed, or type these information manually in the corresponding fields.
Open Cron Help	Click this button to open the **[Cron help]** dialog box which explains the Cron syntax and provides use examples.

3. Click **Save** to validate the CRON-based trigger configuration. The backup operation will be triggered at the specified time.

   For more information on how to execute the backup operation manually, see *Executing a backup*.

Scheduling the backup of your SVN repository

Before you complete this procedure, make sure you have installed the utility which allows you to perform a backup. For more information, see *Prerequisites*.

1. In the **Add** list of the top toolbar, select **Add SVN**. A form which allows you to schedule your backup opens.
2. Fill in the following information:

Label	Description
Label	Type in the name of the backup operation to be triggered.
Active	Select/clear this check box to activate/deactivate this backup operation.
Description	Provide any useful information regarding the operation to be carried out.
Dump folder	Type in the path to the folder where the backed up SVN repository will be stored.
SVN Backup Mode	Select your SVN backup mode (local or remote) in the list.
SVN Location	Type in the location URL to your Subversion server.
Username and **Password**	Type in the name and password of the Subversion user.
Command	Command used to back up your SVN repository. Note that you can edit this command according to your needs.
Open UI configurer	Click this button to open a dialog box in which you can select the hour and date items at which you want the backup operation to be executed, or type these information manually in the corresponding fields.
Open Cron Help	Click this button to open the **[Cron help]** dialog box which explains the Cron syntax and provides use examples.

3. Click **Save** to validate the CRON-based trigger configuration. The backup operation will be triggered at the specified time.

   For more information on how to execute the backup operation manually, see *Executing a backup*.

4.3. Executing a backup

Only users who have the Administrator role can have read-write access to this page. For further information on access rights, see User roles/rights in the Administration Center.

In the **Menu** tree view, click **Backup** to open the corresponding page.

Executing the backup of your database or SVN repository manually

Before you complete this procedure, make sure you have installed the utility which allows you to perform a backup. For more information, see *Prerequisites*.

1. On the **Backup** page, click **Add** on the top toolbar and add a backup operation on your database or SVN repository as explained in *Scheduling a backup*.

2. Once the form is saved, the backup operation appears in the list. Click **Run** on the top toolbar to launch the backup operation immediately.

Chapter 5. Executing Jobs, Routes and Services

Talend Administration Center is a web-based application delivered with the Job Conductor, Big Data Streaming Conductor and ESB Conductor modules. These modules allow you, from a single console, to:

- Configure the remote physical execution servers and group them in virtual servers. For more information, see *Configuring execution servers* and *Configuring virtual servers*.
- Schedule time-based data integration Jobs and create execution plans. For more information, see *Executing data integration Jobs from Job Conductor* and *Planning the execution of data integration Jobs* .
- Set up the publication, deployment and execution of Service, Routes and data service Jobs. For more information, see *Publishing Services, Routes, and Jobs* , and *Executing Services, Routes, and data service Jobs, and applying Profiles from ESB Conductor*.

In order to know if you have access to these modules, see *What modules and features are available depending on your license* .

5.1. Configuring execution servers

Only users that have the Operation Manager role and rights can have read-write access to this page. Other users, depending on their roles, can have either read-only access or no access to this page. For further information on access rights, see User roles/rights in the Administration Center.

Prerequisites:

- Before you can launch any of the execution tasks you have scheduled, you need to configure the servers on which you will deploy them. Ensure that the script is running on the execution server to be able to deploy the task.

  Note that server rates are based on indicators, whose bounds (such as free disk space limits) and weight are defined in the file: `monitoring_client.properties` which is located in *<ApplicationPath>\WEB-INF\lib\org.talend.monitoring.client-A.B.C_rYYYYY.jar*. These constraints are used to calculate a usage value based on outbound values, and to determine which server to be used for load balancing (cluster mode).

  100: server availability is optimal, indicator values are within bounds,

  < **100**: one or several indicators' values are out of bound.

  For more information on how to edit the `monitoring_client.properties` and overwrite the default values, see the *Talend Installation Guide*.

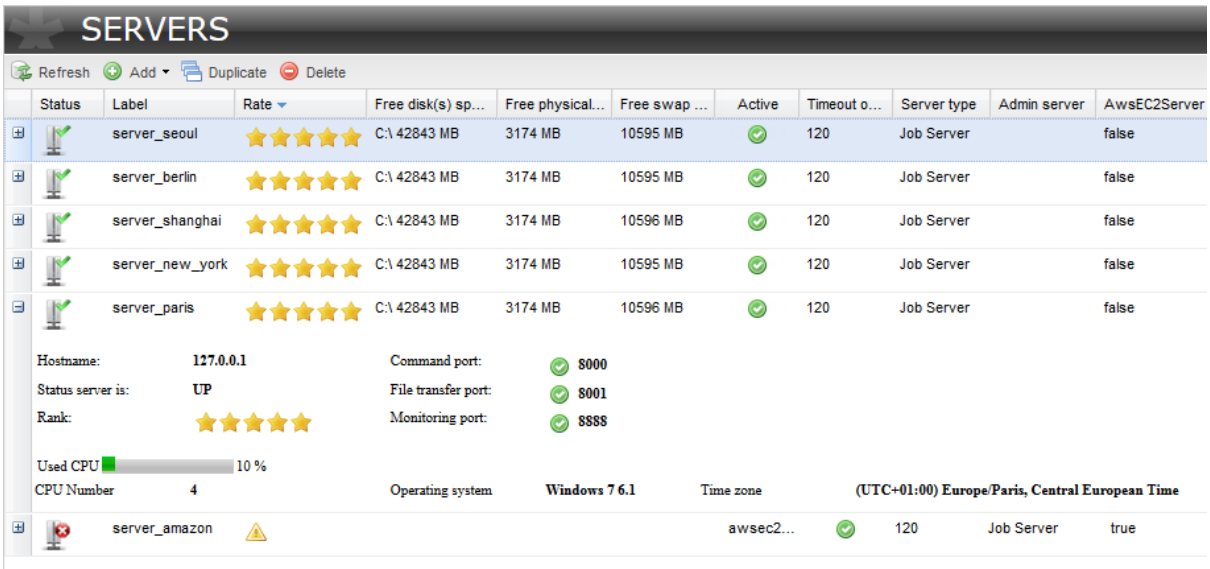
- Make sure the execution server version is compatible with the *Talend Administration Center* and Studio versions. For more information, see the *Talend Installation Guide*.

5.1.1. Accessing the list of execution servers

1. In the **Menu** tree view of *Talend Administration Center*'s home page, expand **Conductor**.
2. Click **Servers** to display the list of the remote execution servers available for deploying and executing tasks.

Note that you can also display the list of servers in the Metaservlet using the `listServer` command. For more information about the MetaServlet parameters, see *Parameters and actions in metaServlet*.

The figure below illustrates an example of a list of execution server entries.



There are three types of execution servers, depending on what you want to deploy and execute:

- Job servers (default). This type of server is used to deploy and execute Jobs tasks only when you subscribed to one of our data-oriented products.
- *Talend Runtime*. This type of server can be used to deploy and execute Jobs tasks if these Jobs are linked with Services or Routes, but it is especially used to deploy and execute Services, Routes, or even generic OSGi features when you are using our service-oriented products.
- the servers on Amazon EC2. This type of server is in fact a JobServer hosted on Amazon EC2. For more information, see *Executing data integration Jobs on a server based on Amazon EC2*.

This list provides the following information for each of the created execution server entries:

Column	Description
Status	Status of the execution server. It can be **UP** (reachable) or **DOWN** (unreachable).
Label	Name of the execution server.
Rate	Rate of server usage represented by a number of stars. The more stars, the best optimized is the server. The stars are calculated with a combination of CPU / RAM / Disk usage and you can change the ranking of each parameter in the `monitoring_client.properties` file. For more information on how to do this, see the *Talend Installation Guide*.
Free disk(s) space	Space available on the disk. Disk parameters are defined in **\conf\TalendJobServer.properties** on your JobServer. You can edit this file and adapt the parameters. such as default port numbers, disk partitions, for example.
Free physical memory	Available physical memory.
Free swap memory	Available swap memory.
Command port	Port of the execution server (8000 by default).
Host	IP address or DNS name of the execution server.
Active	The execution server is activated when the corresponding Active check box is selected. If a server is deactivated, it can not be used to execute a task.
Status server	Status of the execution server. It can be: UP, DOWN, INACTIVE.
CPU Number	Number of processing units.
Used CPU	CPUs being in use in total.
File transfer port	Port for file transfer (8001 by default).
Monitoring port	Port for monitoring (8888 by default).
Timeout on unknown status	The predetermined period of time (defined in *Adding an execution server*) after which a specific action related to the Job status is taken on the selected task.
Operating system	Operating System of the execution server.
Server type	Type of execution server according to the type of solution you subscribed to: a data-oriented solution or a service-oriented solution or both. It can be: • Job servers (default). This kind of server is used to deploy and execute Jobs tasks only when you subscribed to one of our data-oriented products. • Talend Runtime. This kind of server can be used to deploy and execute Jobs tasks if these Jobs are linked with Services or Routes, but it is especially used to deploy and execute Services, Routes, or even generic OSGi features when you are using our service-oriented products.
Server version	Version of the execution server.
Admin server	If the server is a Talend Runtime server, click the **Admin server** button to access the Administration Web console allowing you to manage the container of Talend Runtime.
AwsEC2Server	If the server is hosted on an Amazon instance, the value of this column is **true**. Otherwise, the value of the column is **false**.

From the **Servers** page, you can:

- add a new execution server. For more information, see *Adding an execution server*.
- edit the details of a server. For more information, see *Editing an execution server*.
- duplicate a server. For more information, see *Duplicating an execution server*.

- remove one or more servers. For more information, see *Deleting an execution server*.

To optimize system performance, delete servers that you do not use any more from the servers list.

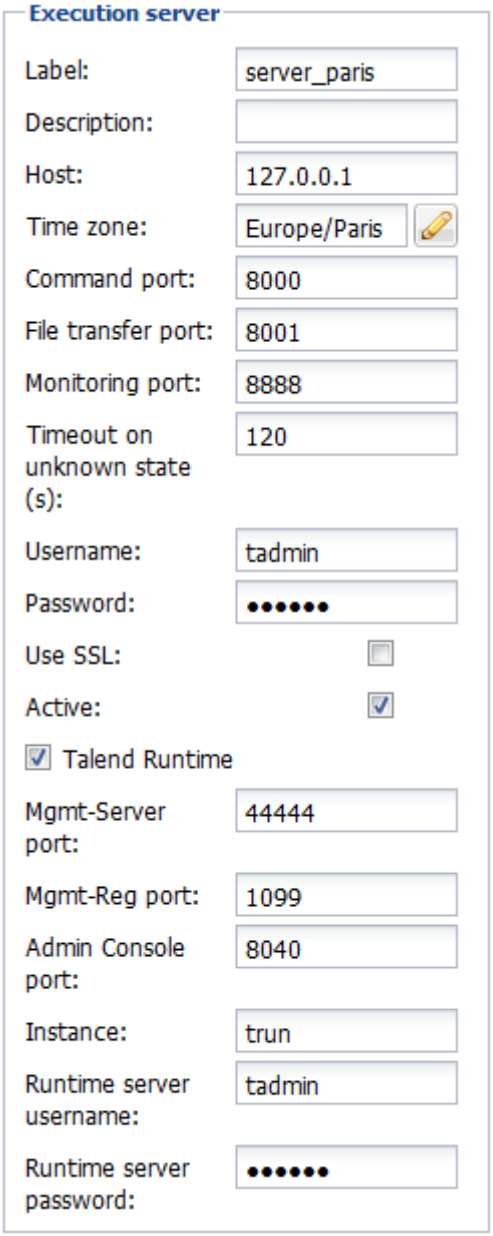
5.1.2. Adding an execution server

The following procedure describes how to add a simple execution server (JobServer or *Talend Runtime* type) on the **Servers** page. For more information on how to add a server hosted on Amazon EC2, see *Executing data integration Jobs on a server based on Amazon EC2*.

To perform this action via the MetaServlet application, use the `addServer` command. For more information about the MetaServlet parameters, see *Parameters and actions in metaServlet*.

To add a simple execution server

1. From the toolbar on the **Servers** page, click **Add** > **Add server** to open the **Execution server** configuration panel.



2. Enter the following information:

Field	Description
Label	Name of the server. This field is mandatory.
Description	Free descriptive text.
Host	IP address or DNS name of the server. This field is mandatory.
Time zone	In the dialog box, select the time zone of the server in the list. To take advantage of the autocomplete feature, type the first three letters of the time zone you are searching for.
Command port	Server port (8000 by default). This field is mandatory.
File transfer port	Port for file transfer (8001 by default). This field is mandatory.
Monitoring port	Port for monitoring (8888 by default). This field is mandatory.
Timeout on unknown status	Enter the predetermined period of time (in seconds) after which a specific action is to be taken on the selected task, in the event of unknown Job status due to an unavailable Job server (120 by default). This field is mandatory.
Username and **Password**	Type in the username and the password for user authentication to access the JobServer. Once you have typed in the password, this password is encrypted when saved in the database. Note that, if the execution server you want to add is a Talend Runtime server, these two fields are mandatory. By default, the username is *tadmin*.  The username and password must match a username and password pair defined in the file *users.csv* in the directory *root/conf/* in the Job server installation directory. Note that if no username and password pairs are defined in the file, you do not have to fill in these fields. For further information about Job server installation, see the *Talend Installation Guide*.
Use SSL	Select/clear the check box to use your own SSL Keystore to encrypt the data prior to transmission. For further information about creating and enabling an SSL Keystore, see the *Talend Installation Guide*.
Active	Select/clear the check box to activate/deactivate this server.
Talend Runtime	By default, servers created are Job servers. If you want to use Talend Runtime to deploy and execute either Jobs, Services, Routes or Generic tasks, select the **Talend Runtime** check box. The following fields will display: **Mgmt-Server port**, **Mgmt-Reg port**, **Admin Console port** and **Instance**.
Mgmt-Server port	RMI Server Port (44444 by default). This field is mandatory.
Mgmt-Reg port	RMI Registry Port (1099 by default). This field is mandatory.
Admin Console port	Port of the Administration Web Console (8040 by default). This field is mandatory and allows to activate the Admin server button allowing you to access the Administration Web console.
Instance	Type in the name of the container instance in which you will deploy and execute your Services, Routes or Generic tasks. The default value is *trun*, which is specified in the `karaf.name` field of the *<TalendRuntimePath>/container/etc/system.properties* file. As a second option, this field also allows the specification of the full JMX serviceURL of the container instance. If the value of this field starts with `service:jmx`, it will be treated as a full JMX serviceURL and used as is. The full JMX serviceURL of the container instance is specified in the *<TalendRuntimePath>/container/etc/org.apache.karaf.management.cfg* configuration file. With this option, you are also allowed to use an alternative JMX serviceURL with *Talend Administration Center* to communicate with the Talend Runtime server. Note that in this case the Karaf instance name still needs to be provided in addition to the serviceURL in the form of `<alternate_jmx_service_url>;<instance_name>`. For example: `service:jmx:rmi://localhost:44444/jndi/rmi://localhost:1099/jmxrmi;trun`.

3. Click **Save** to validate the configuration or click **Cancel** to cancel the configuration. The newly created server appears on the list.

   If you want to be informed of the server change of status, you can add a notification on this server. For more information, see *How to add a server-based notification*.

5.1.3. Editing an execution server

To edit the details of an execution server, complete the following:

1. On the **Servers** page, select the server entry you want to modify. Its details display in the **Execution server** panel.
2. Make the relevant changes to server details where necessary.

   If some execution tasks are configured to run on this server and you edit the server, a pop-up window opens and lists the tasks that might be impacted by this change.
3. Click **Save** to validate the changes or click **Cancel** to cancel.

5.1.4. Duplicating an execution server

To duplicate an execution server, complete the following:

1. On the **Servers** page, select the server entry you want to duplicate then click **Duplicate** on the top toolbar.
2. In the **Execution server** panel, make the relevant changes to server details where necessary.
3. Click **Save** to validate the duplication or click **Cancel** to cancel the changes.

5.1.5. Deleting an execution server

To delete an execution server from the server list, complete the following:

1. On the **Servers** page, select the server entry you want to delete. Its details display in the **Execution server** panel.
2. On the toolbar, click **Delete**. A confirmation dialog box appears.
3. Click **OK** to remove the execution server entry from the server list.

To optimize system performance, delete servers that you do not use any more from the servers list.

5.1.6. Customizing the display of the execution server list

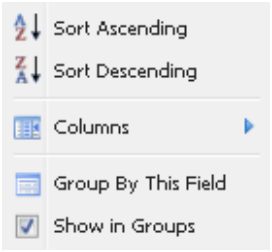
You can customize the execution server list view to restrict the number of displayed servers according to different criteria. You can also show/hide one or more columns in the server list.

1. On the **Servers** page, put the pointer on a column name and click the drop-down arrow.
2. In the drop-down list, select:

Item	To...
Sort Ascending	arrange the list in an ascending order
Sort Descending	arrange the list in an descending order
Columns	display a drop-down list where you can select/clear the check box next to the column(s) you want to show/hide
Group by this field	arrange the list by the name of the selected column

Item	To...
Show in groups	show the list as one group

The figure below shows the list view options in the drop-down list.



You can also apply filters on the server status, label, description, host or type by typing in key words or by selecting check boxes in the **Filters** fields of these columns. To remove the filters and reset the page, you have to click the cog icon on the right of the top toolbar.

5.1.7. Refreshing the execution server list

The execution server list is refreshed automatically at regular intervals of time, but you can refresh it any time by clicking **Refresh** on the toolbar.

5.2. Configuring virtual servers

Only users that have the Operation Manager role and rights can have read-write access to this page. Other users, depending on their roles, can have either read-only access or no access to this page. For further information on access rights, see User roles/rights in the Administration Center.

A virtual server is a group of physical servers from which the best rated server will automatically get preferred at Job execution time. In *Talend Administration Center*, simply select physical servers and group them into a virtual server. Then set the execution task onto this virtual server as for any execution server, in order to automatically select the best server to execute the task onto.

Access to the **Virtual servers** page depend on your license. For more information, see *What modules and features are available depending on your license* .

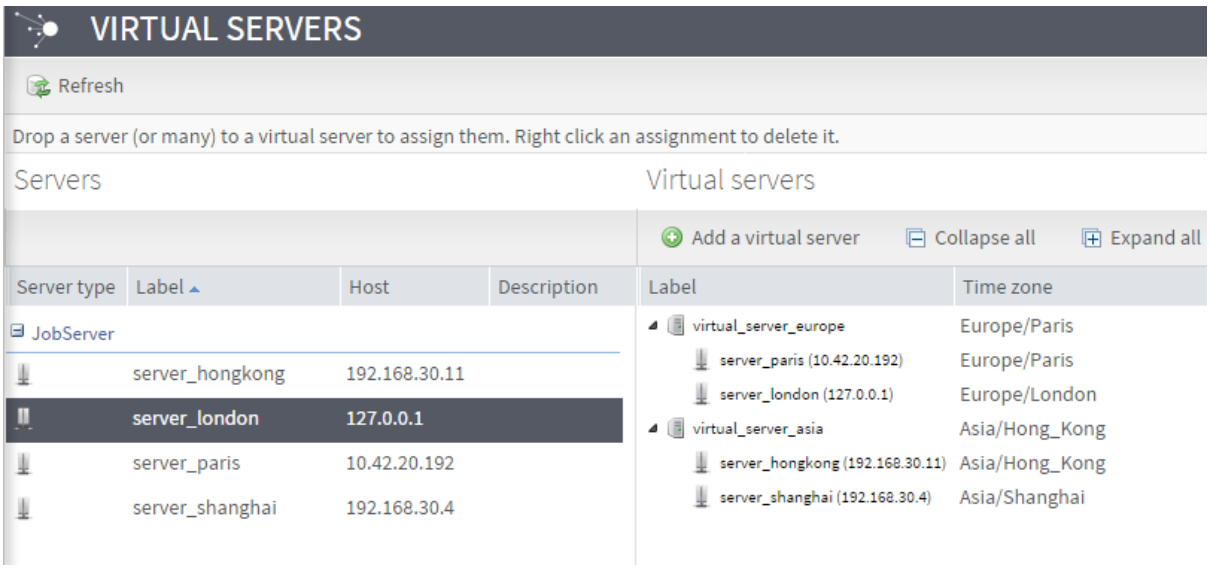
Prerequisite:

- All physical servers available are set on the **Servers** page. See *Configuring execution servers* for more information.

5.2.1. Accessing the list of virtual servers

To access the list of virtual servers from *Talend Administration Center* as well as the execution servers that are assigned accordingly:

In the **Menu** tree view, expand **Conductor** and then click **Virtual Servers** to access the list of virtual servers.



The **Virtual servers** page is divided into two views:

- The **Servers** view on the left which regroups the physical servers you have configured in the **Servers** page. These execution servers can be both JobServers or Talend Runtime servers.
- The **Virtual servers** on the right which regroups the virtual servers and their assignments.

When you access this list for the first time, the existing physical servers are displayed on the view, but no virtual server is available.

From this page, you can create, edit and delete virtual servers and assign physical servers to them. For more information on the virtual servers, see *Adding a virtual server*, *Editing a virtual server* and *Deleting a virtual server* respectively.

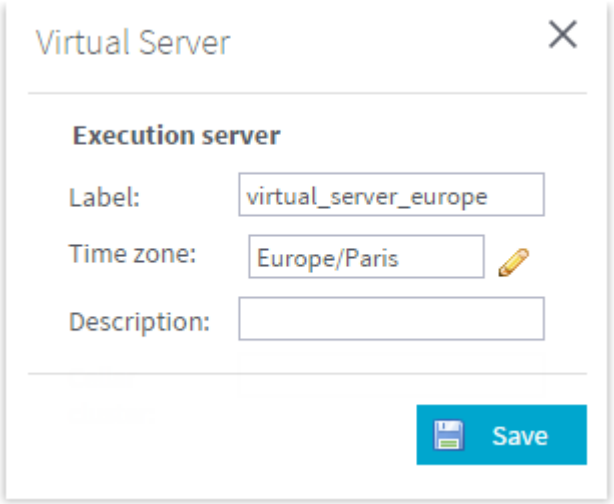
For more information on the assignments, see *Assigning one or several physical server(s) to a virtual server*, and *Deleting an assignment*.

5.2.2. Adding a virtual server

The following procedure describes how to add a virtual server from *Talend Administration Center*.

To perform this action via the MetaServlet application, use the `createVirtualServer` command. For more information about the MetaServlet parameters, see *Parameters and actions in metaServlet*.

1. From the toolbar on the **Virtual servers** view of the **Virtual servers** page, click **Add a virtual server** to open the **[Virtual server]** dialog box.



2. Enter the following information:

Field	Description
Label	Name of the virtual server that groups various physical servers. This field is mandatory.
Time zone	In the dialog box, select the time zone of the virtual server in the list. To take advantage of the autocomplete feature, type the first three letters of the time zone you are searching for. Note that the virtual server time zone is not dependant on the time zone of the servers it contains.
Description	Free descriptive text.

3. Click **Save** to validate the configuration.

The newly created virtual server is displayed on the list.

5.2.3. Editing a virtual server

The following procedure describes how to edit the details of a virtual server entry from *Talend Administration Center*.

To perform this action via the MetaServlet application, use the `updateVirtualServer` command. For more information about the MetaServlet parameters, see *Parameters and actions in metaServlet*.

1. On the **Virtual servers** of the **Virtual server** page, right-click on the server entry you want to modify.
2. Select **Edit virtual server** on the menu to open the **[Virtual server]** dialog box.
3. In the dialog box, make the relevant changes to server details where necessary.
4. Click **Save** to validate the changes.

5.2.4. Deleting a virtual server

The following procedure describes how to delete a virtual server entry from the virtual server list from *Talend Administration Center*.

To perform this action via the MetaServlet application, use the `removeVirtualServer` command. For more information about the MetaServlet parameters, see *Parameters and actions in metaServlet*.

1. On the **Virtual servers** view of the **Virtual servers** page, right-click on the server entry you want to delete.
2. On the menu, click **Delete virtual server** to delete the server from the list. Then a confirmation dialog box appears.
3. Click **OK** to remove the virtual server entry from the server list.

5.2.5. Refreshing the virtual server list

The list of virtual servers is refreshed automatically at regular intervals of time, but you can refresh it any time by clicking **Refresh** on the toolbar on the top of the page.

5.2.6. Assigning one or several physical server(s) to a virtual server

The following procedure describes how to group various execution servers in one virtual server in *Talend Administration Center*. To perform this action via the MetaServlet application, use the `addServerToVirtualServer` command. For more information about the MetaServlet parameters, see *Parameters and actions in metaServlet*.

1. On the **Virtual servers** page, select one or more server(s) in the **Job servers** view.
2. Drag and drop the selected server(s) onto a virtual server where you want to regroup or add the server(s). While dropping the selection in the relevant virtual server, an icon appears to indicate if you can/cannot group the execution server(s) in the selected virtual server.

5.2.7. Deleting an assignment

The following procedure describes how to delete a virtual server assignment from *Talend Administration Center*.

To perform this action via the MetaServlet application, use the `removeServersFromVirtualServer` command. For more information about the MetaServlet parameters, see *Parameters and actions in metaServlet*.

1. On the **Virtual servers** page, right-click on the assigned server entry you want to remove from a virtual server on the **Virtual servers** view. A pop-up menu opens.
2. Click **Remove assignment**. A confirmation message appears to confirm deletion.

5.3. Defining server authorizations

Only users that have the Operation Manager role and rights can have a read-write access to this page. or further information on access rights, see User roles/rights in the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the right authorization by the Administrator.

The **Server Project Authorizations** page in *Talend Administration Center* allows you to manage server authorizations on projects. From this page, you can give an execution or virtual server the right to execute Jobs and Services in one or more projects or restrict these rights to some specific projects, thus ensuring a control over the resources available for a given project.

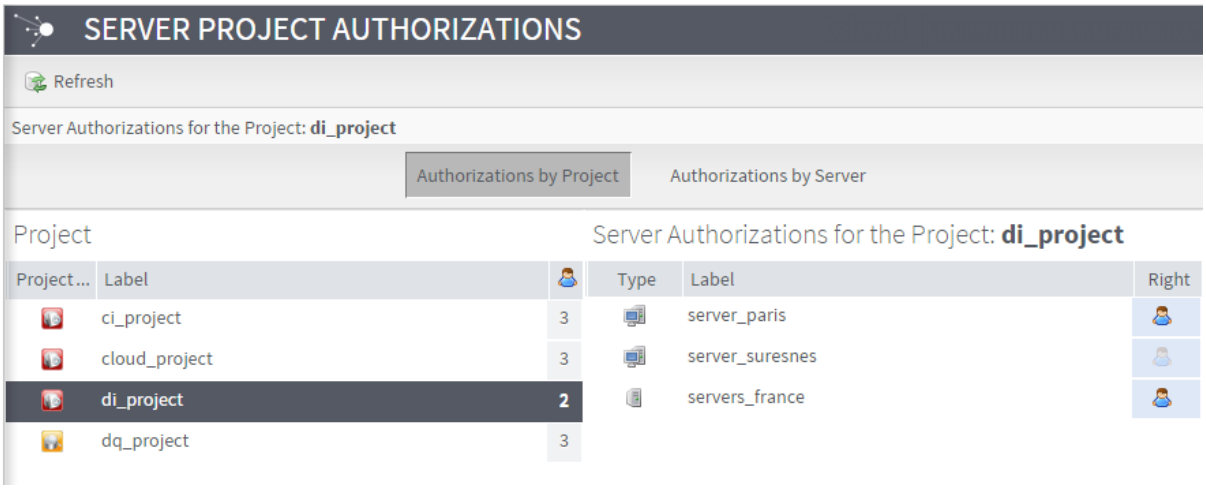
5.3.1. Accessing the server authorization list

To display the project authorization list for the execution servers:

In the **Menu** tree-view, click **Server Project Authorizations**.

The list of projects is displayed in the **Project** panel and the list of servers is displayed in the **Server Authorizations for the Project: <projectName>** panel if you ordered authorizations by projects.

Note that the authorizations can be ordered by projects (**Authorizations by Project**) or by servers (**Authorizations by Server**).



From this page, an Operation Manager can define server accesses to projects.

To do so, the Administrator needs first to add projects and servers to the list. For more information, see *Adding a project* and *Adding an execution server*. By default, when opening this page, all server authorizations are selected, which means that all tasks can be deployed on any execution and virtual servers.

5.3.2. Defining server accesses to projects

To give a server the right to access one or more projects or to restrict these rights to some specific projects, do the following.

If authorizations are ordered by projects

1. In the **Menu** tree-view, select **Server Project Authorizations** to display the authorization list.
2. In the **Project** panel, select the project to which you want to define server access.
3. By default, in the **Right** column of the server panel, permissions are already granted to all existing servers.

   To remove the right to execute tasks on one of the servers, clear the corresponding icon.

The number of servers that have access to the project is updated in the corresponding column of the **Project** panel.

If authorizations are ordered by servers

1. In the **Menu** tree-view, select **Server Project Authorizations** to display the authorization list.
2. In the **Execution Server** panel, select the server you want to assign to a project.
3. In the **Right** column of the project panel, give/remove permissions to the server by selecting/clearing the corresponding icons.

The number of servers that have access to the project are updated in the corresponding column of the **Execution Server** panel.

5.4. Executing data integration Jobs from Job Conductor

In the **Job Conductor** page of *Talend Administration Center*, an execution task gathers the script generation, deployment and execution phases of data integration Jobs. You can launch this task, from this single web-based application, using a simple or a CRON trigger.

For a real-life use case of these features, see *Theory into practice: Executing and monitoring a data integration Job* .

5.4.1. Working with Job execution tasks

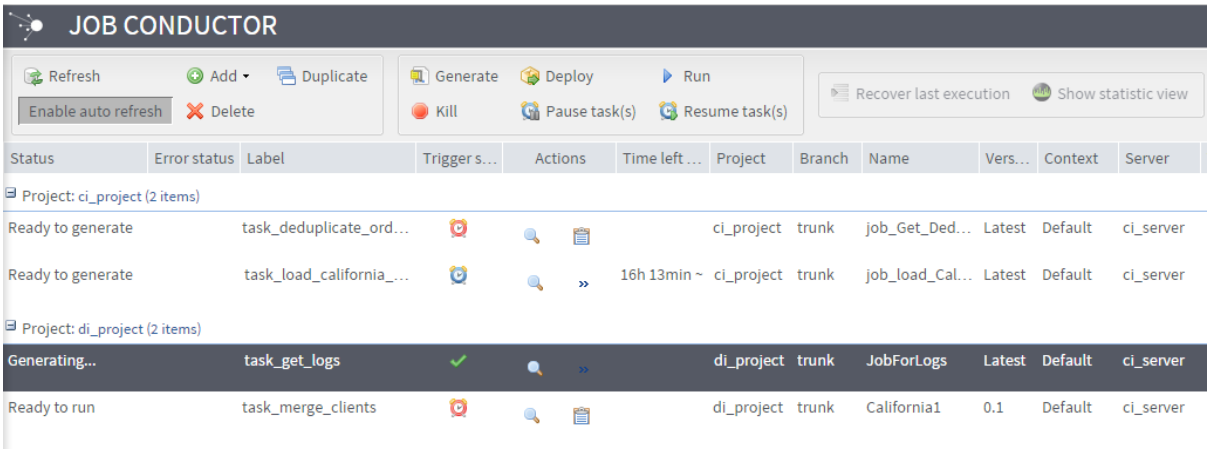
Only users that have the Operation Manager role and rights can have read-write access to the tasks list. Other types of users can have read-only access or no access to the list. For further information on access rights, see User roles/rights in the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the appropriate authorization by the Administrator.

Make sure your execution servers are configured (agent must be running), then you can create the various execution tasks that you want to launch.

A Job execution task represents a set of actions that you can configure in *Talend Administration Center* in order to execute the Jobs designed in *Talend Studio* directly from the Administration Center. You can also define different types of triggers to launch an execution task.

To access the execution task list, do the following:

In the **Menu** tree view, click **Job Conductor** to display the list of scheduled tasks that will deploy and execute Jobs on a remote server.



When you access this list for the first time, no task shows on the list.

The default **Job Conductor** page provides the following information:

Column label	Description
State	Priority among tasks that are not yet executed. Status can be: **awaiting execution** or **frozen exec**. Frozen exec will require a manual resume operation.

Column label	Description
	If the threshold for simultaneous executions is exceeded (by default more than 20 executions at the time), all simultaneous executions above the threshold will acquire the status "awaiting execution". To reset the threshold according to your needs, look for `quartz.properties` in the installation folders of *Talend Administration Center* and change the threshold accordingly in the following parameter: `org.quartz.threadPool.threadCount = 20`
Status	Status of the current task. It can be: **Ready to generate**, **Ready to deploy**, **Ready to install**, **Ready to run** or **Incomplete configuration**.
Error status	Error message is displayed if the task does not complete properly.
Label	Name of the task to be executed.
Trigger status	Triggering state: **No trigger**: no trigger has been set for this task. **Running**: the trigger is activated and the task execution will start. **Completed**: the task is complete. **All triggers paused**: the trigger has been paused and needs to be resumed manually.
Actions	Actions you can do: : opens a pop-up window with the last execution details of the selected task. From this window, you can visualize the logs, the context values and the advanced information of the task, as well as navigate between the different task executions. : opens the execution history of the selected task.
Time left before next triggering	Time before the next triggering occurs.
Project	Name of the project containing the Job to be executed.
Branch	Name of the branch/tag containing the Job to be executed.
Job	Name of the Job to be executed.
Version	Version of the Job as defined in *Talend Studio*.
Context	Name of the context as defined for this Job in *Talend Studio*.
Execution server	Name of the server on which the task was last executed.
Virtual server	Name of the virtual server, if any.

Some extra columns are hidden by default but can be displayed in the table. For more information, see *Customizing the display of the task list*

These extra columns provide the following information:

Column	Description
Active	The task is activated when the corresponding **Active** check box is selected. If a task is deactivated, it can not be executed in the execution server.
CommandLine version	Revision number of the CommandLine.
Description	The description text typed at task creation.
Id	Unique identifier that can be used as parameter to launch the task via a Webservice, for example.
idQuartzJob	Quartz Job identifier associated to the corresponding task.
Last deployment	Date and time of the last time the Job was deployed.
Last ended run	Date and time of the last time the Job execution was complete.
Last run	Date and time of the last time the Job was executed.
Last script generation	Date and time of the last time the script was generated.
Next triggering on	Date and time of the next triggering.
SVN revision	SVN revision number of the Job.

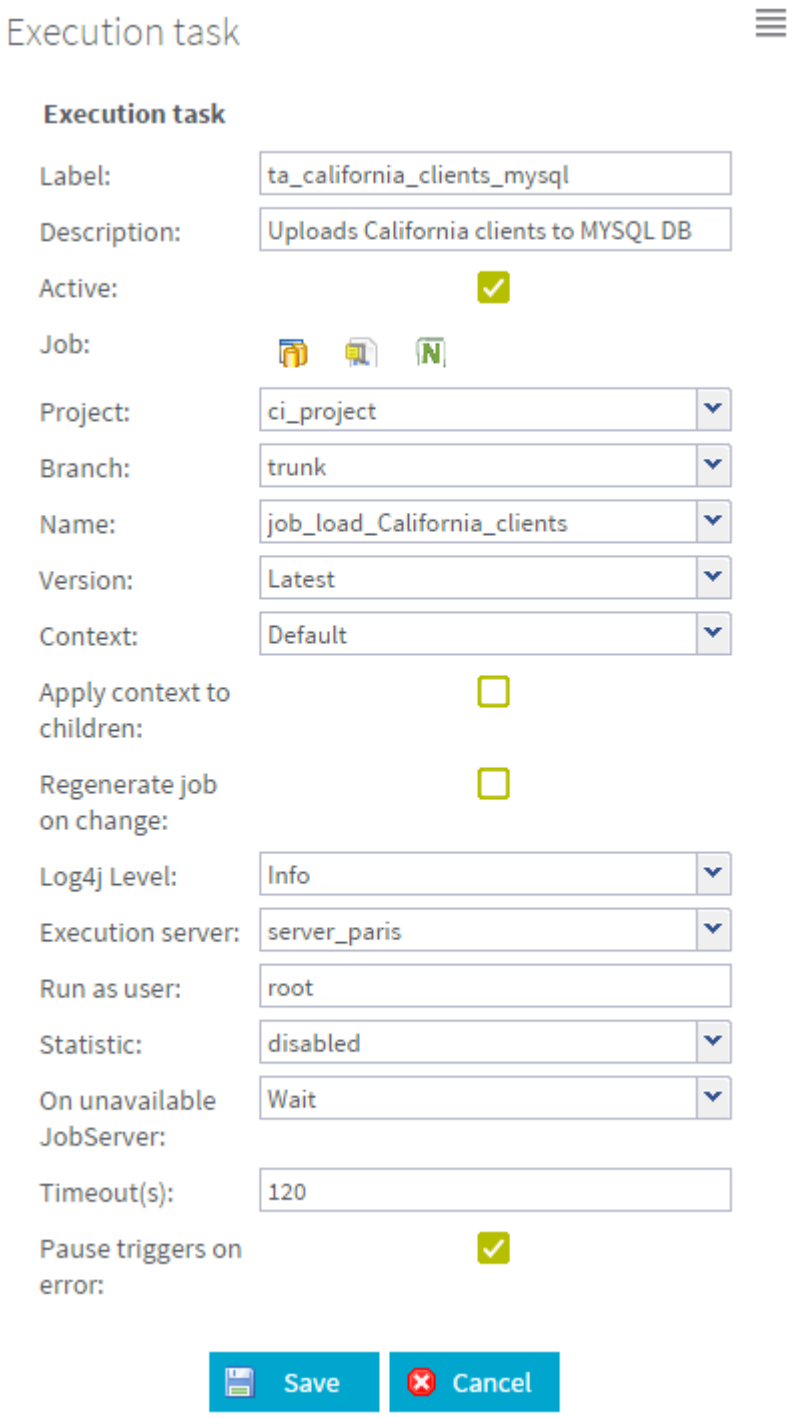
5.4.1.1. Adding a Normal execution task

The **Talend Administration Center** allows you to add execution tasks on Jobs that are either based on the SVN or GIT repository, or pre-generated by the Studio as zip files. According to your needs, read one of the procedures below.

Note that once the task is added, you still can switch from one mode to the other.

Adding an execution task on a Job based on SVN/GIT repository

1. From the toolbar on the **Job Conductor** page, click **Add** > **Normal Task** to clear the **Execution task** configuration panel.



2. Enter/select the following information as necessary.

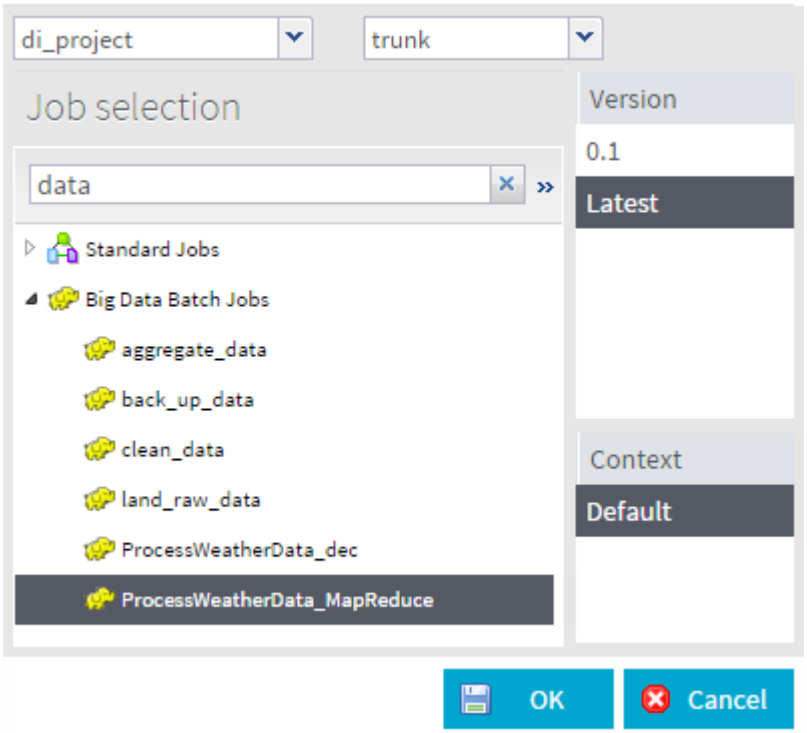
Field	Description
Label	Name of the task to be triggered.
Description	Provides any useful information regarding the task to be carried out.
Active	Select/clear this check box to activate/deactivate this task.
Job	By clicking the  icon, you will open a dedicated Job filter to search for the Job of interest. This can avoid investing too much time in looking for the Job you need to execute. For further information, see the example below this table. You also have the possibility to associate a pre-generated zip file or a Job published to Nexus to your task. For more information, see Adding an execution task on a pre-generated Job and Adding an execution task on a Job published to Nexus.
Project	Select the project that holds the Job to be executed. This field will be automatically filled if you have selected the project of interest using the Job filter.
Branch	Select the SVN/GIT branch/tag, if any is created, of the project containing the Job to be executed. This field will be automatically filled if you have selected the branch/tag of interest using the Job filter. For more information about projects stored on SVN or GIT, see *Managing SVN/Git branches and tags for a project*.
Name	Select the Job to be executed. This field will be automatically filled if you have selected the Job of interest using the Job filter. From this field, you can select both Standard and Big Data Batch (Map/Reduce and Spark) Jobs depending on your license. For further information about Standard and Big Data Batch Jobs that you need to design in the Studio, see *Talend Studio User Guide* and the *Talend Big Data Studio Getting Started Guide*.
Version	If the Job exists in different versions, select the version you want to execute. Or select **Latest version** from the list in order to automatically execute the latest version of the selected Job. This field will be automatically filled if you have selected the Job version of interest using the Job filter.  If you select a given version of the Job, except the latest, Job execution will be faster since there is no need to generate and deploy it before execution. However, when you select **Latest version**, Job execution will be longer since the Job will be regenerated and deployed before the execution.
Context	If several contexts are available for the selected Job, select the relevant context. This field will be automatically filled if you have selected the Job context of interest using the Job filter.
Apply context to children	Select this check box if you want to apply the selected context to all children Jobs.
Regenerate Job on change	Select this check box if you want to regenerate the selected Job before task deployment and execution every time a modification is made to the Job itself.  This check box is only useful if you select the latest version of the Job for execution, since the modifications will only be made to the latest version.
Log4j Level	Select the level of log you want to apply to the execution task. The levels are ranked in increasing order of severity, from TRACE (most detailed information) to OFF (logs turned off). For more information on how to enable and customize the log4j feature from the Studio, see the *Talend Studio User Guide*.
Execution server	Select the server on which the task should be deployed. If the relevant server does not display on the list, check the **Servers** page and make sure the server is correctly configured. For more information regarding the execution server configuration, see *Configuring execution servers* The list of execution servers offers virtual servers corresponding to physical servers grouped together. For details about **Virtual Servers**, see *Configuring virtual servers*
Run Job as OS user (Unix) (Unix only)	Enter the name of the Operating System user who is allowed to start the Job execution, *root* for example: • If the field is empty, any user is allowed to execute the Job. Note that these users must correspond to existing Operating System users. • To restrict this right to specific users, edit the list of allowed users in the following file:

Field	Description
	<JobServerInstallationDirectory>/conf/TalendJobServer.properties • You need to give specific permissions to the server directories to use this feature. For more information on how to do it, see the *Talend Installation Guide*.
Statistic	Decide whether you activate the statistics option during the execution of the selected task. The statistics option offered in *Talend Administration Center* is exactly the same as the one available in *Talend Studio* when you select the **Statistics** check box on the **Run** view. For more information about this option in the Studio, see *Talend Studio User Guide*. In the list, select: - **enabled**: It allows you to access the statistics of your task through the **Real time statistics** page by clicking the **Show statistic view** button of the toolbar or by opening the **[Real time statistics]** window every time you click **Run** to execute a task from *Talend Administration Center*. - **disabled**: this is the default mode. On this mode, the **Show statistic view** button is deactivated, so is the access to the **Real time statistics** page, and the **[Real time statistics**] window does not display when you execute a task. For more information on the **Real time statistics** facility, see *Recovering the execution of a Job*. The **Statistic** field is only available in certain editions of *Talend Administration Center*. *The task may need to be regenerated when you switch among the various modes. In this case, a short text in parenthesis is added behind the mode to notify the need to regenerate the task.*
On unavailable JobServer	This option is part of the failover process provided by Talend. and allows you to decide what action you want to take on the selected task when the server is unavailable during a predetermined period of time (defined in *Adding an execution server*). Select one of the following from the list: - **Wait**: if the Job has an unknown status, usually caused by server problems, this option puts the task on hold throughout the period of time during which the server is inaccessible. When the server is accessible again, the task will restore the status it held prior to encountering the problem. - **Reset task**: if the Job has an unknown status, usually caused by server problems, this option puts the task status back to *Ready to run* when the predetermined period of time relating to the Job status elapses. However, the Job itself could continue running depending on the initial problem. - **Restart task**: if the Job has an unknown status, usually caused by server problems, this option will automatically start the task in its original state when the predetermined period of time relating to the Job status elapses. The **Restart task** option is only useful when you are using virtual servers. - **Recover task**: if the Job has an unknown status, usually caused by server problems, this option will automatically recover the Job execution from the last validated checkpoint. The context parameters used when the task is reset, restarted or recovered, are the same as those used during the last execution
Timeout (s)	Type in how long to wait, in seconds, before the task is killed. By default, if no value is entered in the field, the task runs indefinitely. This option might be useful if you need to limit the execution of a task to a certain period of time.
Pause triggers on error	Select the check box in order to pause the trigger(s) if an error occurs during the execution of the task.

In this step, you can use the dedicated Job filter to help find the Job to be executed from numerous Job folders.

To do this, click the **Select Job** button on the configuration panel and in the pop-up **[Select Job from Repository]** window, select the project, the branch or the tag, the Job, the Job version and the execution context, respectively, depending on your needs. If too many Jobs present in the list such that searching one of them becomes difficult, you can enter the name of the Job of interest in the filter field docked on the top of the **Name** area.

The following figure presents an example of this filter with the Map/Reduce Job *land_raw_data* selected.



3. Click **Save** to validate the configuration or **Cancel** to cancel the creation of the task.

   Once the task has been created, you can still edit its properties, manually or using the Metaservlet application. For more information, see *Editing a task*.

Adding an execution task on a pre-generated Job

Talend Administration Center allows you to associate a pre-generated *.zip* file to a Job Conductor task, and thus to skip the generation step, in order to make sure the task that is deployed is the same as the one you have previously deployed.

For example, if you have generated a task in a development environment and want to run the exact same task in the production environment, you may want to use this feature.

To perform this action via the MetaServlet application, use the `associatePreGeneratedJob` command. For more information about the MetaServlet parameters, see *Parameters and actions in metaServlet*.

Prerequisites:

- A *.zip* file holding a specific task has been previously generated by the Studio, or the CommandLine using the `buildJob` command (see *Building a Job using the CommandLine*). The best practice is to put this file in the Job archive folder, which path is defined in the **Job Conductor** node of the **Configuration** page.

  IMPORTANT:

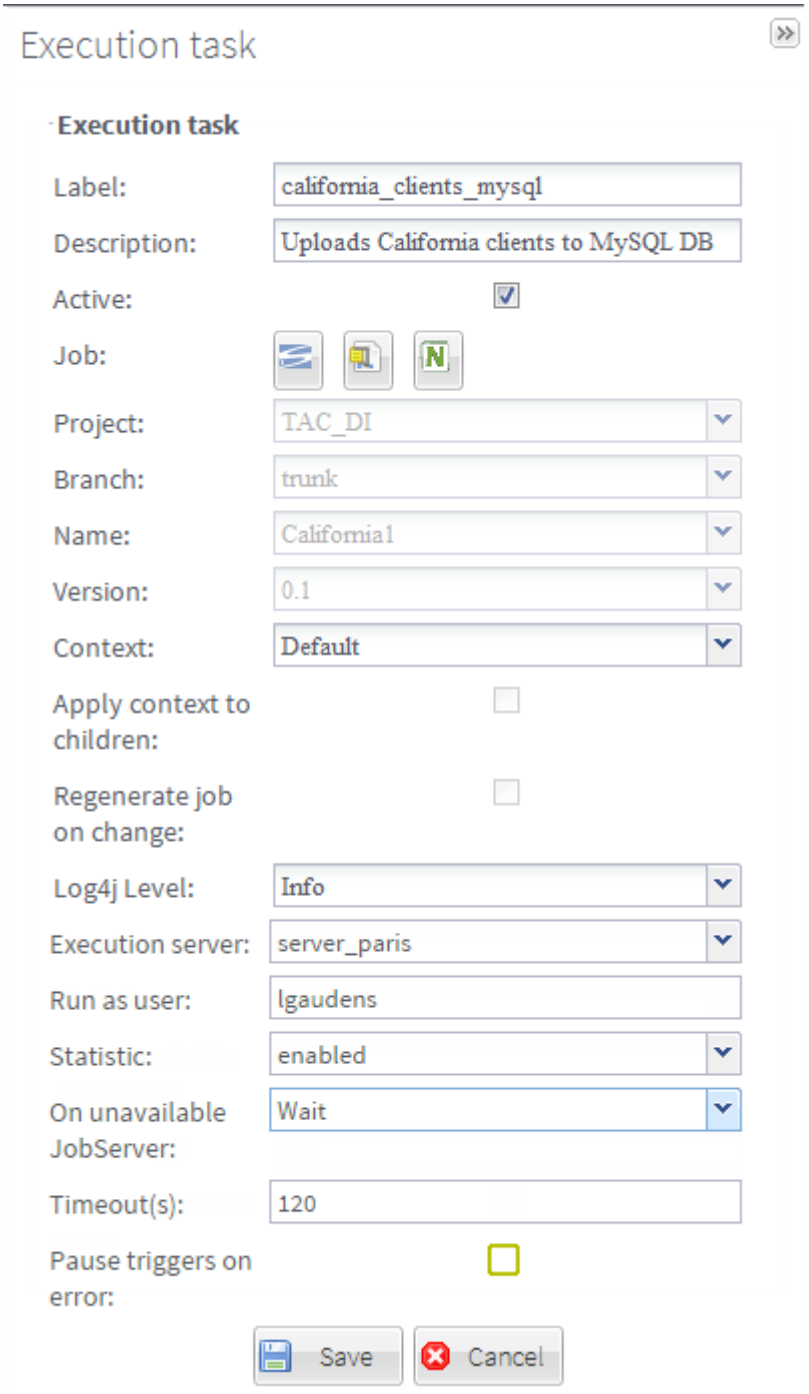
  - when exporting your Job from the Studio, you must select the **items** check box in the **[Build Job]** window. For more information, see the *Talend Studio User Guide*;

- this *.zip* file must contain a *jobInfo.properties* file at the root level, which describes the project and the Job characteristics.

  These information are necessary for the *.zip* file to be imported without generating errors.

- A project with the same name as the development project used to generate the Jobs has been created in the **Projects** page. For more information, see *Adding a project*.
- Unix only: If you want to execute the Job as a specific Operating System user (**Run Job as OS user** option), this user must already exist in the system and some server directories must have been given specific permissions. For more information, see the *Talend Installation Guide*.

1. From the toolbar on the **Job Conductor** page, click **Add** > **Normal Task** to display the **Execution task** configuration panel.



2. Enter/select the following information as necessary.

Field	Description
Label	Name of the task to be triggered.
Description	Provides any useful information regarding the task to be carried out.
Active	Select/clear this check box to activate/deactivate this task.
Job	Click the  icon to open the **[Import generated code]** window. This window allows you to retrieve the pre-generated file holding the desired Job and to associate this Job to the task. Note that, when exporting your Job from the Studio, you must select the **items** check box in the **[Build Job]** window to be able to import your Job successfully on the **Job Conductor** page. For more information, see the *Talend Studio User Guide*. You also have the possibility to add a task on a Job based on SVN/GIT repository or published to Nexus. For more information, see Adding an execution task on a Job based on SVN/GIT repository and Adding an execution task on a Job published to Nexus.
Project	This field is automatically completed and is read-only. Note that this project must exist in *Talend Administration Center*.
Branch	This field is automatically completed and is read-only.
Name	This field is automatically completed and is read-only.
Version	This field is automatically completed and is read-only.
Context	If you have defined several contexts in the Studio for the selected Job, select the relevant context in the list.
Apply context to children	This field is automatically completed and is read-only.
Regenerate Job on change	Select this check box if you want to regenerate the selected Job before task deployment and execution every time a modification is made to the Job itself.  This check box is only useful if you select the latest version of the Job for execution, since the modifications will only be made to the latest version.
Log4j Level	Select the level of log you want to apply to the execution task. The levels are ranked in increasing order of severity, from TRACE (most detailed information) to OFF (logs turned off). For more information on how to enable and customize the log4j feature from the Studio, see the *Talend Studio User Guide*.
Execution server	Select the server on which the task should be deployed. If the relevant server does not display on the list, check the **Servers** page and make sure the server is correctly configured. For more information regarding the execution server configuration, see *Configuring execution servers*. The list of execution servers offers virtual servers corresponding to physical servers grouped together. For details about **Virtual Servers**, see *Configuring virtual servers*.
Statistic	This field is automatically completed. It is either: - **enabled** (read and write) if you enabled the statistics during the generation of the Job; - **disabled** (read and write) if you deactivated the statistics during the generation of the Job.
On unavailable JobServer	This option is part of the failover process provided by Talend. and allows you to decide what action you want to take on the selected task when the server is unavailable during a predetermined period of time (defined in *Adding an execution server*). Select one of the following from the list: - **Wait**: if the Job has an unknown status, usually caused by server problems, this option puts the task on hold throughout the period of time during which the server is inaccessible. When the server is accessible again, the task will restore the status it held prior to encountering the problem. - **Reset task**: if the Job has an unknown status, usually caused by server problems, this option puts the task status back to *Ready to run* when the predetermined period of time relating to the Job status elapses. However, the Job itself could continue running depending on the initial problem.

Field	Description
	- **Restart task**: if the Job has an unknown status, usually caused by server problems, this option will automatically start the task in its original state when the predetermined period of time relating to the Job status elapses.  The **Restart task** option is only useful when you are using virtual servers. - **Recover task**: if the Job has an unknown status, usually caused by server problems, this option will automatically recover the Job execution from the last validated checkpoint.  The context parameters used when the task is reset, restarted or recovered, are the same as those used during the last execution
Timeout (s)	Type in how long to wait, in seconds, before the task is killed. By default, if no value is entered in the field, the task runs indefinitely. This option might be useful if you need to limit the execution of a task to a certain period of time.
Pause triggers on error	Select the check box in order to pause the trigger(s) if an error occurs during the execution of the task.

3. Click **Save** to validate the configuration or **Cancel** to cancel the creation of the task.

   Once the task has been created, you can still edit its properties, manually or using the Metaservlet application. For more information, see *Editing a task*.

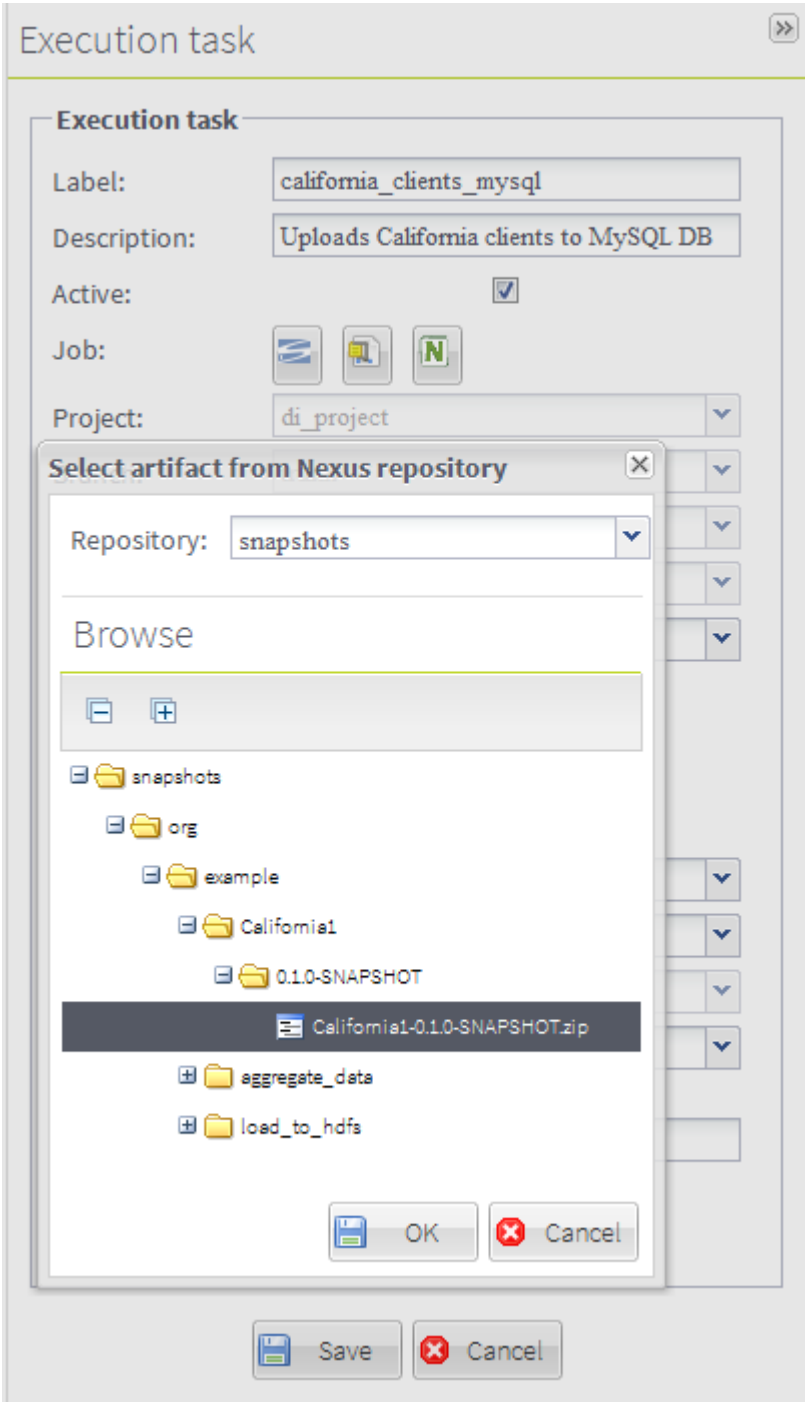
Adding an execution task on a Job published to Nexus

Talend Administration Center allows you to add an execution task on a Job published in the Nexus artifact repository as a *.zip* file, and thus to skip the generation step, in order to make sure the task that is deployed is the same as the one you have previously deployed.

Prerequisites:

- The parameters to connect to the Nexus artifact repository are filled in the **Artifact Repository** node of the **Configuration** page. For more information, see *Setting up the Artifact Repository parameters*.
- The Job you want to add has been previously published to the Nexus artifact repository from the Studio.
- Unix only: If you want to execute the Job as a specific Operating System user (**Run Job as OS user** option), this user must already exist in the system and some server directories must have been given specific permissions. For more information, see the *Talend Installation Guide*..

1. From the toolbar on the **Job Conductor** page, click **Add** > **Normal Task** to display the **Execution task** configuration panel.



2. Enter/select the following information as necessary.

Field	Description
Label	Name of the task to be triggered.
Description	Provides any useful information regarding the task to be carried out.
Active	Select/clear this check box to activate/deactivate this task.
Job	Click the icon to open the **[Select artifact from Nexus repository]** window. This window allows you to retrieve the .zip file holding the Job published and to associate it to the task. Note that if you misconfigured or did not configure the connection to Nexus on the **Configuration** page, this icon will be grayed out. In the **Repository** list, select the repository in which the Job has been published.

Field	Description
	In the **Browse** panel, browse to the Job you want to associate with the task then click **OK** to close the window. You also have the possibility to add a task on a Job based on SVN/GIT repository or on a pre-generated Job. For more information, see Adding an execution task on a Job based on SVN/GIT repository and Adding an execution task on a pre-generated Job.
Project	This field is automatically completed and is read-only. Note that the project must exist in *Talend Administration Center* and that you must have read/write access to this project.
Branch	This field is automatically completed and is read-only.
Name	This field is automatically completed and is read-only.
Version	This field is automatically completed and is read-only.
Context	If you have defined several contexts in the Studio for the selected Job, select the relevant context in the list.
Apply context to children	This field is automatically completed and is read-only.
Regenerate Job on change	Select this check box if you want to regenerate the selected Job before task deployment and execution every time a modification is made to the Job itself.  This check box is only useful if you select the latest version of the Job for execution, since the modifications will only be made to the latest version.
Log4j Level	Select the level of log you want to apply to the execution task. The levels are ranked in increasing order of severity, from TRACE (most detailed information) to OFF (logs turned off). For more information on how to enable and customize the log4j feature from the Studio, see the *Talend Studio User Guide*.
Execution server	Select the server on which the task should be deployed. If the relevant server does not display on the list, check the **Servers** page and make sure the server is correctly configured. For more information regarding the execution server configuration, see *Configuring execution servers*. The list of execution servers offers virtual servers corresponding to physical servers grouped together. For details about **Virtual Servers**, see *Configuring virtual servers*.
Run Job as OS user (Unix) (Unix only)	Enter the name of the Operating System user who is allowed to start the Job execution, *root* for example: • If the field is empty, any user is allowed to execute the Job. Note that these users must correspond to existing Operating System users. • To restrict this right to specific users, edit the list of allowed users in the following file: *<JobServerInstallationDirectory>/conf/TalendJobServer.properties* • You need to give specific permissions to the server directories to use this feature. For more information on how to do it, see the *Talend Installation Guide*.
Statistic	This field is automatically completed. It is either: - **enabled** (read and write) if you enabled the statistics during the generation of the Job; - **disabled** (read and write) if you deactivated the statistics during the generation of the Job.
On unavailable JobServer	This option is part of the failover process provided by Talend. and allows you to decide what action you want to take on the selected task when the server is unavailable during a predetermined period of time (defined in *Adding an execution server*). Select one of the following from the list: - **Wait**: if the Job has an unknown status, usually caused by server problems, this option puts the task on hold throughout the period of time during which the server is inaccessible. When the server is accessible again, the task will restore the status it held prior to encountering the problem. - **Reset task**: if the Job has an unknown status, usually caused by server problems, this option puts the task status back to *Ready to run* when the predetermined period of time relating to

Field	Description
	the Job status elapses. However, the Job itself could continue running depending on the initial problem. - **Restart task**: if the Job has an unknown status, usually caused by server problems, this option will automatically start the task in its original state when the predetermined period of time relating to the Job status elapses.  The **Restart task** option is only useful when you are using virtual servers. - **Recover task**: if the Job has an unknown status, usually caused by server problems, this option will automatically recover the Job execution from the last validated checkpoint.  The context parameters used when the task is reset, restarted or recovered, are the same as those used during the last execution
Timeout (s)	Type in how long to wait, in seconds, before the task is killed. By default, if no value is entered in the field, the task runs indefinitely. This option might be useful if you need to limit the execution of a task to a certain period of time.
Pause triggers on error	Select the check box in order to pause the trigger(s) if an error occurs during the execution of the task.

3. Click **Save** to validate the configuration or **Cancel** to cancel the creation of the task.

   Once the task has been created, you can still edit its properties, manually or using the Metaservlet application. For more information, see *Editing a task*.

5.4.1.2. Adding an execution task based on an artifact

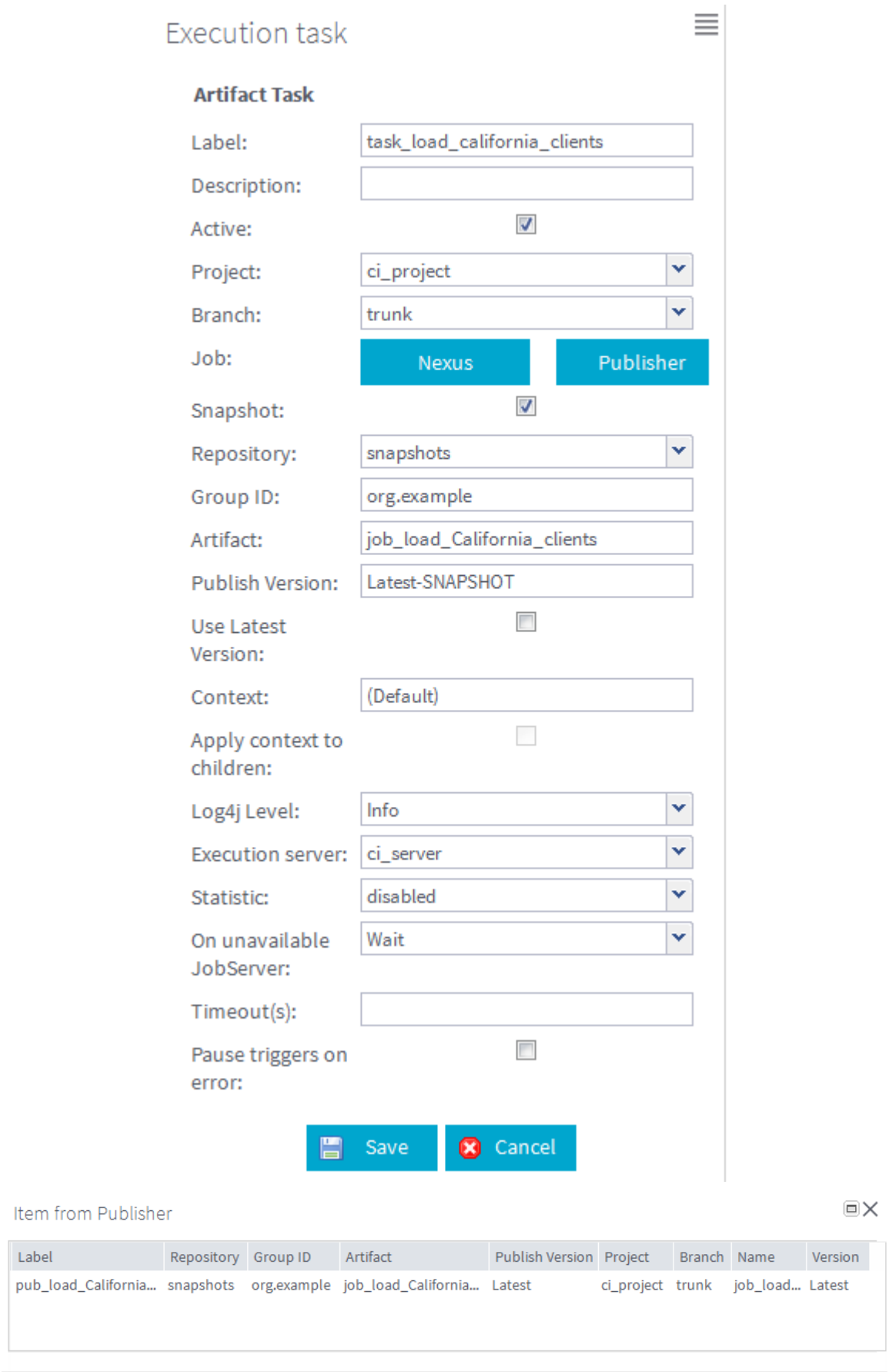
The **Talend Administration Center** also allows you to add execution tasks on Jobs that are retrieved on the Nexus artifact repository at execution time, or pre-published via the **Publisher** page.

Prerequisites:

- The parameters to connect to the Nexus artifact repository are filled in the **Artifact Repository** node of the **Configuration** page. For more information, see *Setting up the Artifact Repository parameters*.
- The Job you want to add has been previously published to the Nexus artifact repository from the Studio.
- Unix only: If you want to execute the Job as a specific Operating System user (**Run Job as OS user** option), this user must already exist in the system and some server directories must have been given specific permissions. For more information, see the *Talend Installation Guide*.

Adding an execution task on an artifact

1. From the toolbar on the **Job Conductor** page, click **Add** > **Artifact Task** to display the **Execution task** configuration panel.



2. Enter/select the following information as necessary.

Field	Description
Label	Name of the task to be triggered.
Description	Provides any useful information regarding the task to be carried out.
Active	Select/clear this check box to activate/deactivate this task.
Project	Select the project containing the artifact to be executed
Branch	Select the SVN/GIT branch/tag, if any is created, of the project containing the artifact to be executed. For more information about projects stored on SVN or GIT, see *Managing SVN/Git branches and tags for a project*.
Job	Click the **Nexus** button icon to open the **[Select artifact from Nexus repository]** window. This window allows you to link dynamically the Job artifact and to associate it to the task, knowing that this artifact is only retrieved at execution time. In the **Repository** list, select the repository in which the Job is published. In the **Browse** panel, browse to the Job you want to associate with the task then click **OK** to close the window. OR: Click the **Publisher** button to retrieve the publishing task created from the **Publisher** page. Details of the artifact are then automatically completed in the form. For more information on publishing tasks, see *Working with publishing tasks*.
Snapshot	Select this check box to execute the artifact as a snapshot.
Repository	Repository in which the artifact is published. This field is automatically completed.
Group ID	Name of the group in which the artifact is published. This field is automatically completed.
Artifact	Name of the artifact item. This field is automatically completed. From this field, you can select both Standard and Big Data Batch Jobs (Map/Reduce and Spark), according to your license. For more information on the Standard and Big Data Batch Jobs created from the Studio, see the *Talend Studio User Guide* and the *Talend Big Data Studio Getting Started Guide*.
Publish Version	Version of the artifact to be executed. This field is automatically completed and is read-only.
Use Latest Version	If there are several versions of the same artifact, select this check box in order to automatically execute the latest version of the selected artifact.
Context	Context to be applied to the execution task. This field is automatically completed.
Apply context to children	This field is automatically completed and is read-only.
Log4j Level	Select the level of log you want to apply to the execution task. The levels are ranked in increasing order of severity, from TRACE (most detailed information) to OFF (logs turned off). For more information on how to enable and customize the log4j feature from the Studio, see the *Talend Studio User Guide*.
Execution server	Select the server on which the task should be deployed. If the relevant server does not display on the list, check the **Servers** page and make sure the server is correctly configured. For more information regarding the execution server configuration, see *Configuring execution servers*. The list of execution servers offers virtual servers corresponding to physical servers grouped together. For details about **Virtual Servers**, see *Configuring virtual servers*.
Run Job as OS user (Unix) (Unix only)	Enter the name of the Operating System user who is allowed to start the Job execution, *root* for example: • If the field is empty, any user is allowed to execute the Job. Note that these users must correspond to existing Operating System users. • To restrict this right to specific users, edit the list of allowed users in the following file: *<JobServerInstallationDirectory>/conf/TalendJobServer.properties* • You need to give specific permissions to the server directories to use this feature. For more information on how to do it, see the *Talend Installation Guide*.
Statistic	This field is automatically completed and is read-only. It is either: - **enabled** (read and write) if you enabled the statistics during the generation of the Job;

Field	Description
	- **disabled** (read and write) if you deactivated the statistics during the generation of the Job.
On unavailable JobServer	This option is part of the failover process provided by Talend. and allows you to decide what action you want to take on the selected task when the server is unavailable during a predetermined period of time (defined in *Adding an execution server*). Select one of the following from the list: - **Wait**: if the Job has an unknown status, usually caused by server problems, this option puts the task on hold throughout the period of time during which the server is inaccessible. When the server is accessible again, the task will restore the status it held prior to encountering the problem. - **Reset task**: if the Job has an unknown status, usually caused by server problems, this option puts the task status back to *Ready to run* when the predetermined period of time relating to the Job status elapses. However, the Job itself could continue running depending on the initial problem. - **Restart task**: if the Job has an unknown status, usually caused by server problems, this option will automatically start the task in its original state when the predetermined period of time relating to the Job status elapses. The **Restart task** option is only useful when you are using virtual servers. - **Recover task**: if the Job has an unknown status, usually caused by server problems, this option will automatically recover the Job execution from the last validated checkpoint. The context parameters used when the task is reset, restarted or recovered, are the same as those used during the last execution
Timeout (s)	Type in how long to wait, in seconds, before the task is killed. By default, if no value is entered in the field, the task runs indefinitely. This option might be useful if you need to limit the execution of a task to a certain period of time.
Pause triggers on error	Select the check box in order to pause the trigger(s) if an error occurs during the execution of the task.

3. Click **Save** to validate the configuration or **Cancel** to cancel the creation of the task.

   Once the task has been created, you can still edit its properties, manually or using the Metaservlet application. For more information, see *Editing a task*.

5.4.1.3. Organizing execution tasks

Editing a task

To edit a task:

1. On the **Job Conductor** page, select the task you want to modify. Its details are displayed in the **Execution task** configuration panel.

2. Make the relevant changes to task details where necessary.

3. Click **Save** to validate the changes or **Cancel** to cancel the changes.

   Note that you can also edit a task (name, context values, Job *.zip* file, etc.) via the MetaServlet application using the `updateTask` command. For more information about the MetaServlet parameters, see *Parameters and actions in metaServlet*.

Duplicating a task

To avoid creating a new task from scratch, you can duplicate an existing one and work around its metadata to have a new task in the list.

To duplicate a task, do the following:

1. On the **Job Conductor** page, select the task you want to duplicate.
2. On the toolbar, click **Duplicate**. The panel to the right shows the metadata of the selected task.
3. Modify the metadata as needed in order to create a new task.
4. Click **Save** to validate the operation or **Cancel** to cancel it.

   The new task is listed in the Execution tasks list.

Deleting a task

To delete one or more tasks from the task list, follow the procedure below.

To perform this action via the MetaServlet application, use the `deleteTask` command. For more information about the MetaServlet parameters, see *Parameters and actions in metaServlet*.

1. On the **Job Conductor** page, select the task you want to delete. Its details display in the **Execution task** configuration panel.
2. On the toolbar, click **Delete**. A confirmation dialog box appears.
3. Click **OK** to remove the task from the task list.

Searching a task

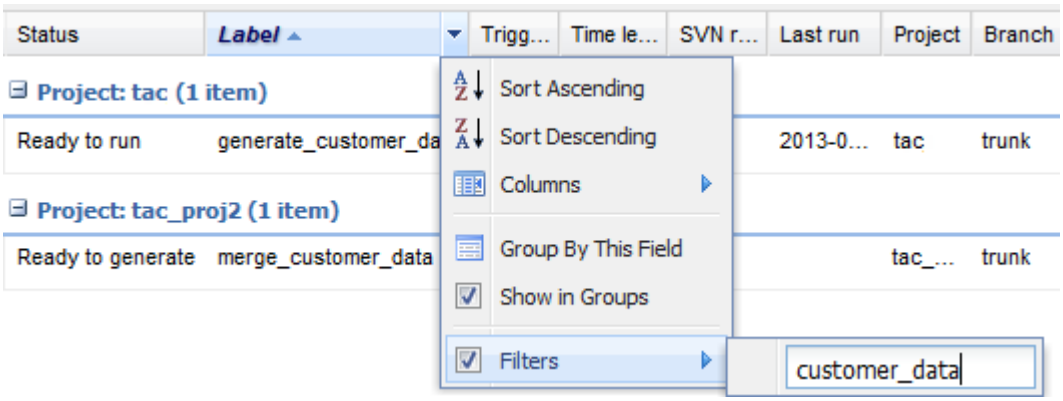
If you have a great number of tasks and want to filter them, you can do so by typing key words or by selecting some check boxes in the Filters fields of the columns listed below:

- **Active**
- **Branch**
- **CommandLine version**
- **Context**
- **Description**
- **Error status**
- **Label**
- **Last deployment**
- **Last ended run**
- **Last run**

- **Last script generation**
- **Name**
- **Next triggering on**
- **Project**
- **Server**
- **Status**
- **SVN revision**
- **Version**
- **Virtual server**

Example of how to apply a filter on the label of several task(s)

1. Click the arrow on the **Label** column to display its options, then select the **Filters** option.



2. Type in the name by which you want to filter the tasks. Here, the text *customer_data* is used to display only the tasks whose names include these terms.

   The filtered column appears in blue bold. To remove the filter, clear the **Filters** check box in this column.

   To remove all filters and reset the page, click the cog icon on the right of the top toolbar.

Customizing the display of the task list

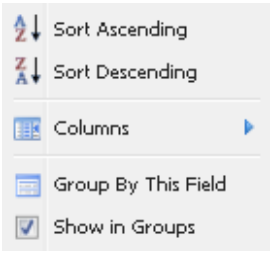
You can customize the execution task list view to restrict the number of displayed tasks according to different criteria. You can also show/hide one or more columns in the task list.

1. On the **Job Conductor** page, put the pointer on a column name and click the drop-down arrow.
2. In the drop-down list, select:

Item	To...
Sort Ascending	arrange the list in an ascending order
Sort Descending	arrange the list in an descending order
Columns	display a drop-down list where you can select/clear the check box next to the column(s) you want to show/hide
Group by this field	arrange the list by the name of the selected column

Item	To...
Show in groups	show the list as one group

The figure below shows the list view options in the drop-down list.



Once you have customized the list, your preferences are saved (column filters, order or width) and kept even after the page is refreshed. To reset the page, you have to click the cog icon on the right of the top toolbar.

Refreshing the task list

The task list is refreshed automatically at regular intervals of time, but you can refresh it any time by clicking **Refresh** on the toolbar.

5.4.1.4. Scheduling a task

You can schedule your tasks based on time or event, using time triggers or file triggers respectively.

Time-based scheduling can be linked to a simple trigger or to a CRONUI trigger depending on the way you want your time-based triggered task to be executed, either at a defined time and date or regularly over a period of time.

You can also schedule your task to be executed based on a file trigger. The presence of a file in a defined location will trigger the job execution task.

Or you can also schedule your task to be execute from a Webservice.

On the **Job Conductor** page, click the task you want to schedule then select the relevant trigger.

Note that if you define several types of triggers for the same task, the first trigger to be checked is the first to be executed.

For more information about these triggers, see:

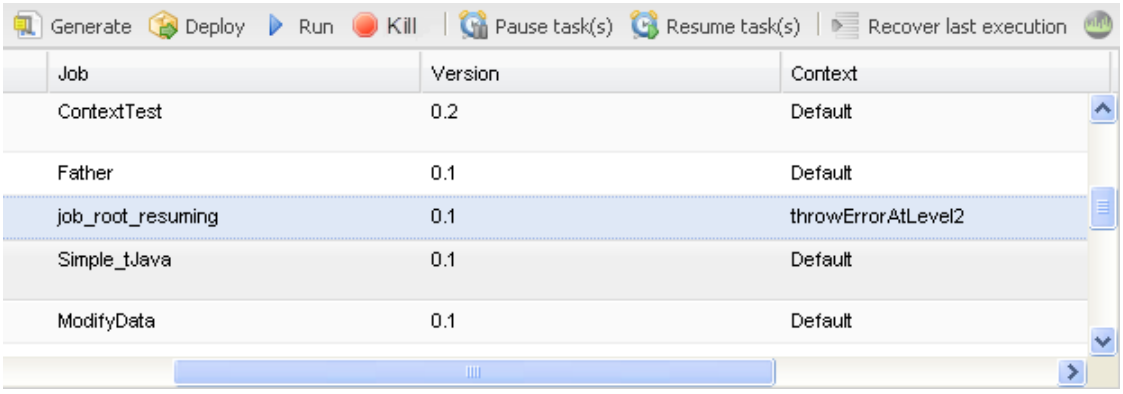
- *How to add a simple trigger onto a task*
- *How to add a CRON-based trigger*.
- *How to add a File trigger*

5.4.1.5. Recovering the last execution of a task

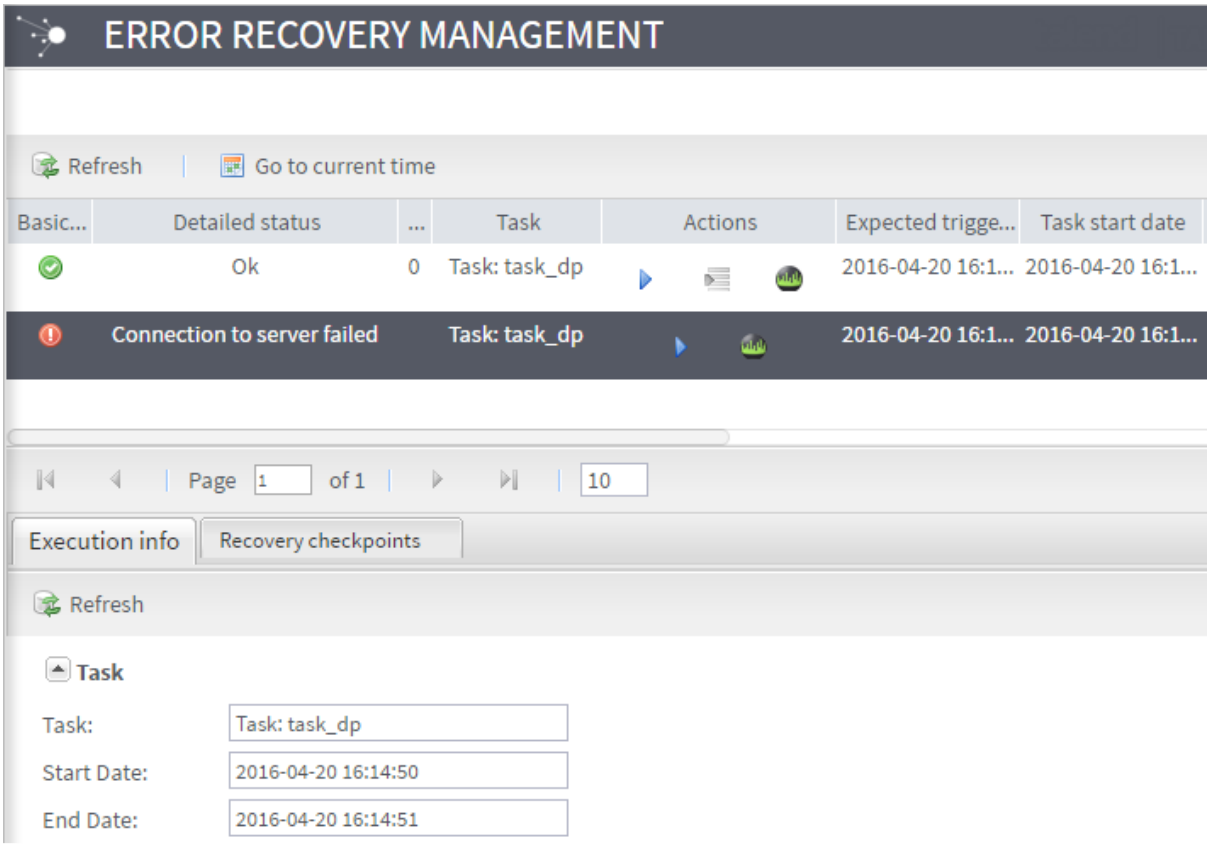
From the **Job conductor** page, you can open the **Error recovery management** page which is designed to help the recovery of erroneous Jobs. It displays the graphical and analytical details of the Job execution. To access **Error recovery management**, do the following:

1. On the **Job Conductor** page, select the task you want to recover.

2. On the toolbar, click the **Recover last execution** button.



The page switches to **Error recovery management**. Note that at the moment, the page only displays the details of the last execution of your selected task.



To view the details of all previous executions, you should access the page via **Task executions monitoring**. For detailed information about this and the **Error recovery management** page, see *Accessing the Error Recovery Management page*.

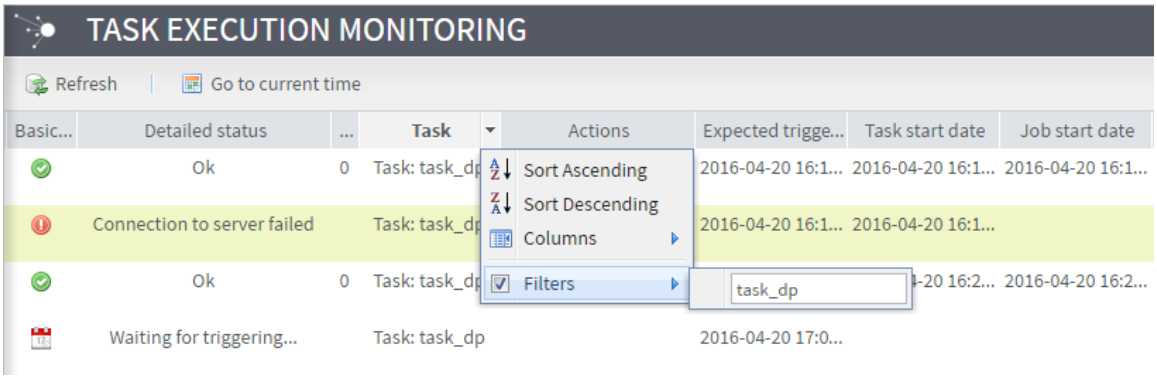
5.4.1.6. Accessing the execution list of a task

To monitor all executions of a given task, do the following:

1. On the **Job Conductor** page, select the task you want to monitor.

2. In the **Actions** column, click the **Show execution history** icon.

   The page switches to **Task execution monitoring**, and a filter is applied on the task you have selected.



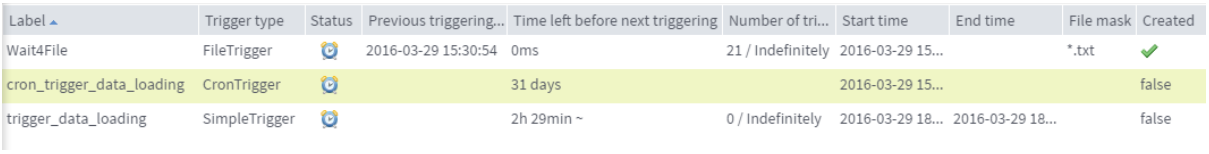
To monitor the executions of all tasks, click the **Disable filters** button on the toolbar.

For more information on task execution monitoring, see *Monitoring task executions in the Monitoring node*.

5.4.2. Scheduling execution tasks

Only users that have the Operation Manager role and rights can have read-write access to the triggers list. Other types of users can have read-only access or no access to the list. For further information on access rights, see User roles/rights in the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the appropriate authorization by the Administrator.

On the **Job Conductor** page, you can schedule an execution task using different types of triggers.



Available triggers are:

- Time-based triggers **(SimpleTrigger)**
- Periodic multi-platform CRON-like triggers **(CronUITrigger)**
- File-based triggers **(FileTrigger)**:

The trigger list includes the following information:

Column	Description
Label	Trigger name
Trigger type	One of the following trigger types: **SimpleTrigger** **CRONUITrigger FileTrigger**
Status	Status of the current trigger. **Normal**: The trigger is ready to be launched **Waiting for the task to end**: The triggering has taken place, the task execution is in progress

Column	Description
	Paused: The trigger is disabled **Completed**: The trigger execution is complete **Error/Invalid**: The trigger execution has failed or is invalid
Previous triggering on	Date and time when the previous triggering took place
Number of triggerings	Estimated number of triggering that will take place over the selected period of time and/or for the number of triggering repetition set.
Time left before next triggering	Time to elapse before the next triggering starts.
Next triggering on	Date and time when the next triggering will take place.
Final triggering on	Estimated or set triggering end time.
Start time	Date and time when the first triggering takes place.
End time	Actual time when the last triggering ended.
File mask	In case of file-based trigger, enter the file name extension for the relevant file
Id	Trigger identification

On the **Triggers** view at the bottom half of the **Job Conductor** page, you can add triggers, edit triggers, enable/disable triggers, delete triggers and customize the trigger list.

5.4.2.1. Adding triggers

To schedule the execution of your tasks, you can set time-based triggers (simple or CRON) or event-based triggers (file) onto a task that will start its execution.

If you want to schedule one or several execution of a task at a precise moment, you can use the simple trigger. For more information on how to use simple triggers, see *How to add a simple trigger onto a task*.

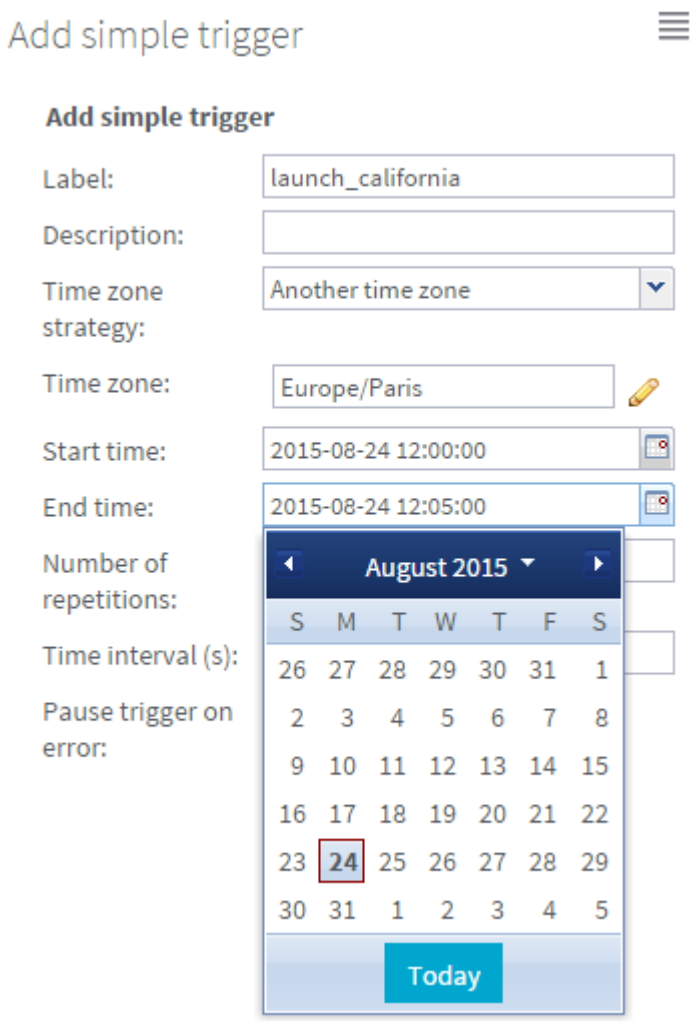
If you want to schedule one execution of a task on a regular basis (daily, weekly, monthly etc.), you can use the CRON-based trigger. For more information on how to use CRON triggers, see *How to add a CRON-based trigger*.

If you want to execute a task on a file-based event, such as the presence, creation, modification of the file, you can use the File trigger. For more information on how to use File triggers, see *How to add a File trigger*.

How to add a simple trigger onto a task

You can add a simple trigger onto a task to schedule one or several execution(s) at a defined date and time.

1. On the **Job Conductor** page, select the task you want to implement a trigger on.
2. In the bottom half of the page and in the **Triggers** view, click **Add trigger...** and then select **Add simple trigger** from the drop-down list. The **Simple trigger** configuration panel opens.



3. Enter the following information:

Field	Description
Label	Give a name to the trigger you are setting
Description	Provide a description if the type of trigger is not obvious enough
Time zone	In the dialog box, select the time zone of the triggering time in the list. It can be the execution server time, the Web application time or another time zone you define. To take advantage of the autocomplete feature, type the first three letters of the time zone you are searching for.
Start time	Click the calendar button to open a calender. Click the date and set the exact time for the trigger to be executed. The time format must be HH:MM:SS **If you do not fill this field**, the triggering is immediate For immediate triggering, we advise you to click the execute button on the table.
End time	Click the calendar button to open a calendar. Click the date and set the exact time for the trigger to be executed. The time format must be HH:MM:SS. **If you do not fill this field**: the Job will be executed indefinitely (until the number of repetitions is reached, if any)
Number of repetitions	Type in the number of execution that should occur in addition to the first execution. **If you do not fill this field:** as many executions as possible within the time frame given **0**: only the first execution is carried out.

Field	Description
	n: n extra execution is carried out in addition to the first one.
Time interval	Type in (in sec) the time interval between triggerings. For long interval, use CRON-based triggers.
Pause trigger on error	Select the check box in order to pause the trigger if an error occurs during the execution of the task.

Fields marked with exclamation mark are mandatory.

4. Click **Save** to validate the simple trigger configuration or **Cancel** to cancel the operation.

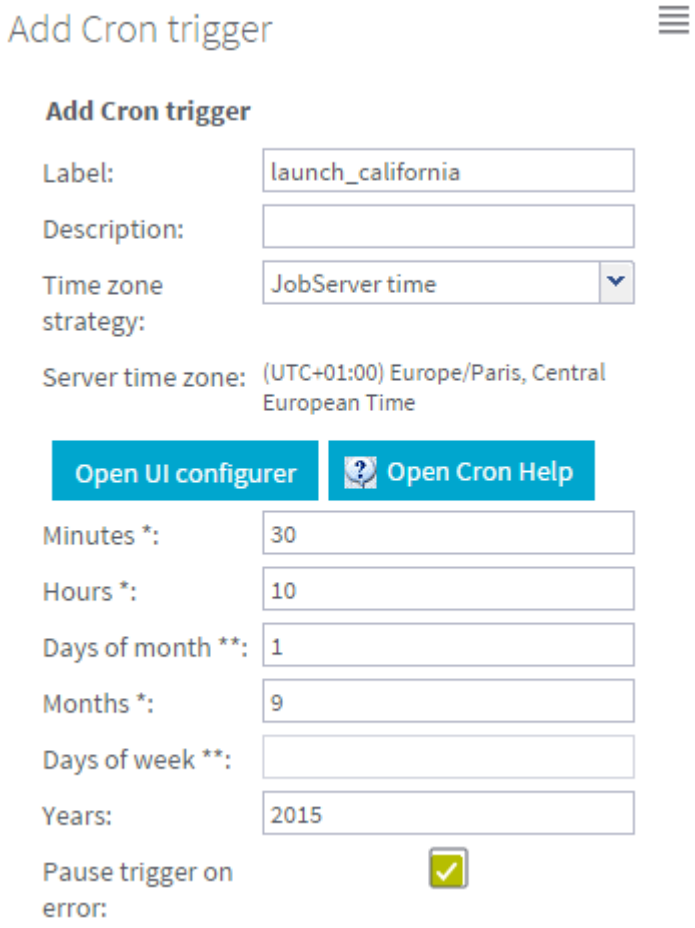
The **Trigger Status** icon for the selected task changes from **No Trigger** to **At least one trigger is running**.

Note that, if the task is already running when the task is triggered, the **Job Conductor** will wait for the current task to finish. If the task is not finished after 60 seconds, then the status of the task execution changes to 'misfired'. A misfired event also occurs if the trigger misses its firing time because of *Talend Administration Center* is shut down. For more information on task execution status and monitoring, see *Monitoring task executions in the Monitoring node*.

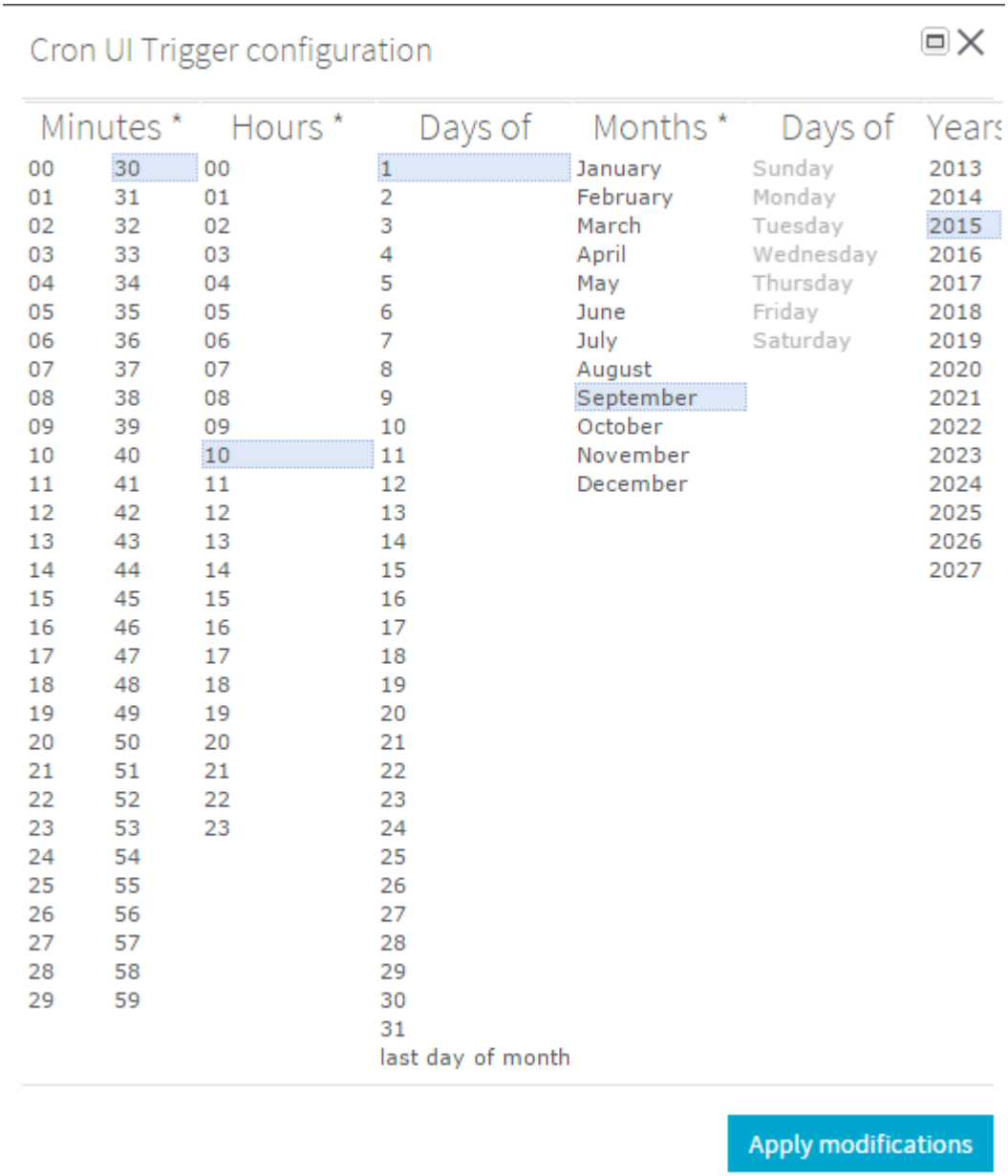
How to add a CRON-based trigger

If you need to execute a task on a regular basis over a period of time, then use a CRON-based trigger.

1. On the **Job Conductor** page, select the task you want to implement a trigger on.
2. In the **Triggers** view, click **Add trigger...** and then select **Add CRON trigger** from the droplaunch_california-down list. The **CRON trigger** configuration panel opens.



3. Fill in the **Label** and **Description** fields and then click **Open UI configurer** to open the **[Cron UI trigger configuration]** dialog box.



4. Select the hour and date items at which you want the task to be executed as the following:

Field	Description
Label	Enter a name to the trigger you are setting.
Description	Enter a description for the trigger type and usage.
Minutes	The minute at which you want to execute the task.
Hours	The hour at which you want to execute the task.
Days of month	The month day on which you want to execute the task. If you want the task to be executed on the last day of the selected month(s), select **last day of month** in the **[Cron UI trigger configuration]** dialog box or type in *L* in the **Days of month** field.
Months	The month in which you want to execute the task.
Days of week	The week day on which you want to execute the task.
Years	The year in which you want to execute the task.

Field	Description
	Fields marked with **: Select one or more week day OR one or more dates. **Fields marked with ***: mandatory information. For multiple selection, press **Ctrl + click**.

5. Click **Apply modifications**. The dialog box closes and the selected data is displayed in the **CRON UI trigger** configuration panel.
6. Click **Save** to validate the CRON-based trigger configuration or **Cancel** to cancel the operation.

The **Trigger Status** for the selected task changes from **No Trigger** to **At least one trigger is running**.

Note that, if the task is already running when the task is triggered, the **Job Conductor** will wait for the current task to finish. If the task is not finished after 60 seconds, then the status of the task execution changes to 'misfired'. A misfired event also occurs if the trigger misses its firing time because of *Talend Administration Center* is shut down. For more information on task execution status and monitoring, see *Monitoring task executions in the Monitoring node*.

How to add a File trigger

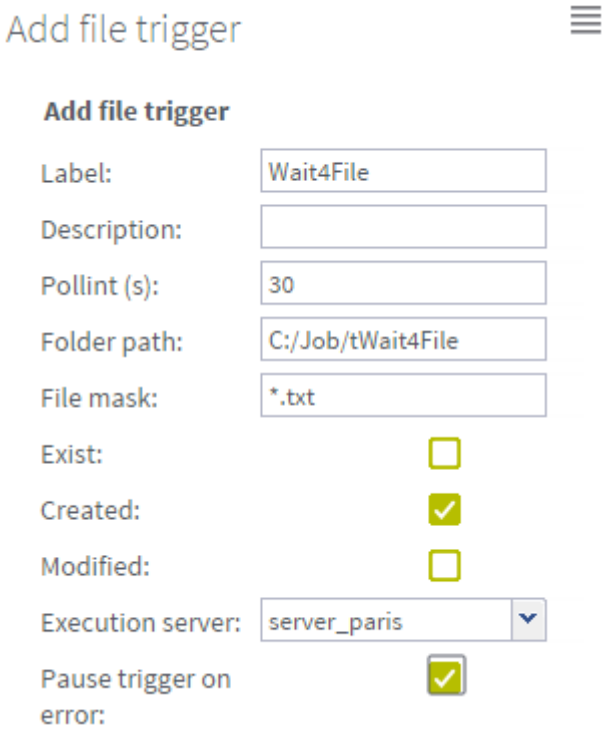
You can use a file to trigger Job execution tasks. The presence of this file in a defined location will trigger the Job execution task. This file becomes then a job trigger with no other purpose.

The file trigger principle is described in the article How file triggers work in Talend Administration Center.

If a context has been defined and that you intend to use the trigger file in the Job to execute, then make sure to define the following context parameters in the **Contexts** view in *Talend Studio*: *folderPath*, *filepath* and *fileName*. Thus, the **Job Conductor** passes these values to the Job during its execution.

To schedule an execution task based on the presence of a file in a defined location:

1. On the **Job Conductor** page, select the task you want to implement a trigger on.
2. In the **Triggers** view, click **Add trigger...** and then select **Add file trigger** from the drop-down list. The **File trigger** configuration panel opens.



3. Fill in the following information:

Fields	Description
Label	Enter a name to the trigger you are setting.
Description	Enter a description for the trigger type and usage.
Pollint	Polling interval in seconds, corresponding to the time between each checking operation of the file server.
Folder Path	Path to the folder to be scanned regularly for the trigger file.
File mask	Mask of the trigger file.
	In order not to trigger job execution for every file in the polling folder, do the following: **Exist**: select this check box to trigger on file if the file already exists in the polling folder **Created**: select this check box to trigger on file if the file is being created and does not already exist in the polling folder **Modified**: select this check box to trigger on file if the file is modified. It is possible to select more than one check box.
Execution server	Select the server where the trigger file is put.

4. Click **Save** to validate the File trigger configuration or **Cancel** to cancel the operation.

The **Trigger Status** icon for the selected task changes from **No Trigger** to **At least one trigger is running**.

5.4.2.2. Editing a trigger

To edit a trigger entry, do the following:

1. On the **Job Conductor** page, select the relevant task to display the corresponding triggers in the trigger list.
2. Select the trigger entry you want to modify. Its details are displayed in the configuration panel to the right.
3. Make the relevant changes to trigger details where necessary.
4. Click **Save** to validate the changes or click **Cancel** to cancel.

5.4.2.3. Disabling/Enabling a trigger

To disable or enable a trigger, do the following:

1. On the **Job Conductor** page, select the relevant task to display the corresponding triggers and their details in the trigger list.
2. Select the trigger entry you want to disable/enable.
3. From the toolbar in the **Triggers** panel, click **Pause trigger**/**Resume trigger**. The selected trigger icon displays as disabled/enabled.

You cannot disable/enable a trigger if its status is **Completed**.

5.4.2.4. Deleting one or more triggers

To delete one or more triggers from the trigger list, do the following:

1. On the **Job Conductor** page, select the relevant task and click the **Triggers** tab to display the corresponding triggers and their details in the trigger list.
2. Select the trigger entry or entries you want to delete.
3. From the toolbar in the **Triggers** panel, click **Delete**. A confirmation dialog box appears.
4. Click **OK** to remove the selected trigger entry or entries from the trigger list.

5.4.2.5. Customizing the display of the trigger list

You can customize the trigger list view to restrict the number of displayed triggers according to different criteria. You can also show/hide one or more columns in the trigger list.

1. On the **Job Conductor** page and in the **Triggers** panel, put the pointer on a column name and click the drop-down arrow.
2. In the drop-down list, select:

Item	To...
Sort Ascending	arrange the list in an ascending order
Sort Descending	arrange the list in an descending order
Columns	display a drop-down list where you can select/clear the check box next to the column(s) you want to show/hide
Group by this field	arrange the list by the name of the selected column
Show in groups	show the list as one group

The figure below shows the list view options in the drop-down list.

Once the list is customized, your preferences are saved (column filters, order or width) and kept even after the page is refreshed. To reset the page, you have to click the cog icon on the right of the top toolbar.

5.4.3. Setting JVM parameters for specific tasks

Only users that have the Operation Manager role and rights can have read-write access to the tasks list. Other types of users can have read-only access or no access to the list. For further information on access rights, see User roles/rights in the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the right authorization by the Administrator.

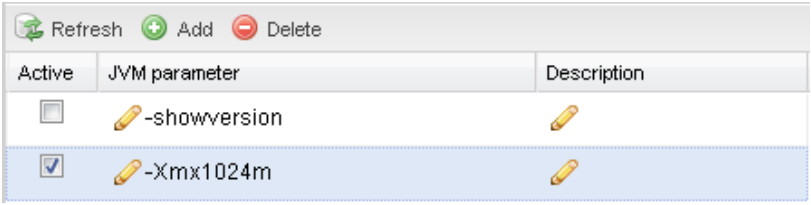
You can set JVM parameters for **Talend** Jobs directly in *Talend Administration Center* and execute the Job without the need to regenerate it.

For more information on typical command-line options and environment variables relative to JVM, you can check or download the list at http://www.oracle.com/technetwork/java/javase/tech/vmoptions-jsp-140102.html.

To set JVM parameters for a **Talend** Job:

1. In the upper half of the **Job Conductor** page, select the task for which you want to set JVM parameters.

2. In the lower part of the **Job Conductor** page, click **JVM parameters** to display the corresponding view.



3. Click **Add** to add lines for the new JVM parameter(s).
4. In the **JVM parameter** cell, enter/paste the JVM parameter for the selected task.
5. If needed, enter a description for this parameter in the corresponding field.
6. Select/clear the check box of the JVM parameter you want to activate/deactivate when executing the selected task.
7. Click **Run** to execute the task with the newly set JVM parameters.

To delete a JVM parameter, select the parameter you want to delete from the list and click **Delete** on the toolbar.

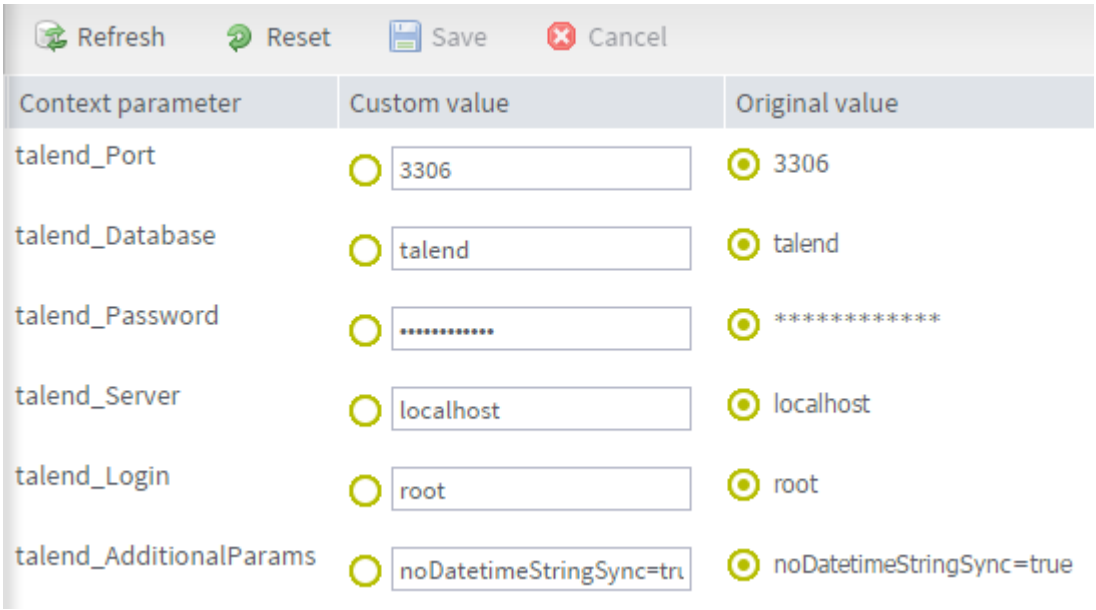
5.4.4. Modifying context parameters for specific tasks

Only users that have the Operation Manager role and rights can have read-write access to the tasks list. Other types of users can have read-only access or no access to the list. For further information on access rights, see User roles/rights in the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the appropriate authorization by the Administrator.

You can modify the values of the context parameters set in *Talend Studio* for a specific Job directly from *Talend Administration Center* and execute the Job without the need to regenerate it.

To set new values for context parameters:

1. In the upper half of the **Job Conductor** page, select the task for which you want to modify the context values.
2. In the lower half of the **Job Conductor** page, click **Context parameters** to display the corresponding view.



The context parameters you defined in *Talend Studio* for the selected task are displayed on the list in the **Context parameter** column along with their original values in the **Original value** column, and are ediable icon in the **Custom value** column.

3. Click in the white space of a **Custom value** cell and set the new value for the corresponding context parameter.

   When the context parameter is of type String, do not put its value between double quotes, unless if double quotes are needed in to the string value for further use.

   When you modify a Parameter type of context parameter, the new value appears in clear text as you type and then as asterisks when done.

4. Select/clear the check box of the context parameter you want to activate/deactivate the custom value of when executing the selected task, then click **Save** to save your changes or **Cancel** to reset all fields to their original values.

5. Click **Run** to execute the task with the newly set values of the context parameters.

You can click **Reset** on the toolbar to go back to the values defined in *Talend Studio*.

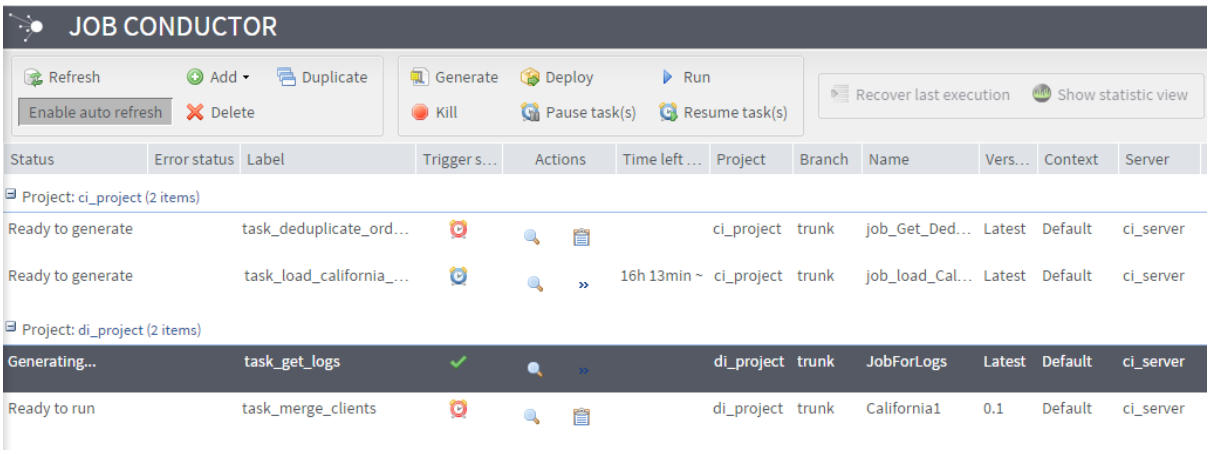
5.4.5. Sequence of task execution

Only users that have the Operation Manager role and rights can have read-write access to this page. Other types of users can have read-only access or no access to the page. For further information on access rights, see User roles/rights in the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the right authorization by the Administrator.

Once the task triggering is launched, you can follow every stage of the task sequence on the **Job Conductor** page of *Talend Administration Center*.

You have full control over the sequencing, as you have the possibility to launch, pause or kill a task execution at any time even though the trigger you possibly have set has already started. For more information regarding the controls over the execution, see *Working with Job execution tasks*.

The task execution sequence is made of various phases including: script generation, Job deployment, Job execution and log or error.



The **Status** changes at every stage of the task execution.

The execution and error status is refreshed automatically, but you can refresh the display any time by clicking **Refresh** on the toolbar.

5.4.5.1. Generating scripts

As defined in *Talend Administration Center*, the task fetches the relevant Job script in the relevant project from the *Talend Studio* Repository and generates the code.

On the **Job Conductor** page, the **Status** column shows the Job script generating status.

Once the generation is complete, the status changes to **Ready to deploy**. The code generated is now ready to be deployed on the execution server(s).

If you want to manually launch the generation phase, click on the relevant button on the top toolbar. For more information about the controls, see *Working with Job execution tasks*.

5.4.5.2. Deploying and preparing Job execution

Once the Job script is generated, you can deploy the Job on the execution servers.

Make sure the agent provided is running on the Job sever as described in the relevant readme.txt.

On the **Job Conductor** page, you can view the task status changing from **Ready to deploy** to **Requesting deployment**.

If you want to manually launch the deployment phase, click on the relevant button on the top toolbar. For more information about the controls, see *Working with Job execution tasks*.

Once the deployment is complete, the status changes to **Ready to install**. This means that the server has received the Job and is now ready to execute it.

5.4.5.3. Running Jobs

Once the Job is deployed and installed on the relevant execution servers, the Job can thus be executed just like you would run it within *Talend Studio*.

On the **Job Conductor** page, you can view the Job status changing from **Ready to run** to **Requesting run**.

If you want to manually launch the run phase, click on the relevant button on the top toolbar. For more information about the controls, see *Working with Job execution tasks*.

Once the execution is complete, the status switches back to **Ready to run**. The Job can be executed again if needed.

In case the task did not complete properly, check the **Error Status** column as well as the task log for the Job completion information.

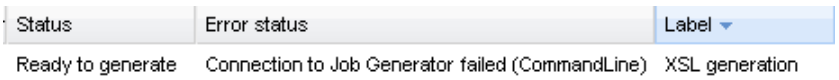
If the statistics mode is **enabled** for your Job, the **[Real time statistics]** window displays in front of the Job conductor page, once you click **Run** to execute it. For more information, see *Recovering job execution*.

5.4.5.4. Errors and Logs

If an error is generated during the task triggering, the message is displayed in the **Error Status** column.

How to check for error messages

If an error is generated during the task triggering, the message is displayed in the **Error Status** column.



Status	Error status	Label
Ready to generate	Connection to Job Generator failed (CommandLine)	XSL generation

Check the connections and settings before triggering again the task or executing it directly from the **Job Conductor** page.

How to display log information

To display log information for a given task:

1. From the **Job Conductor** page, select the task from the task list.
2. In the **Actions** column, click the **Display last execution details** icon.

   A pop-up window opens with the last execution details of the selected task. From this window, you can visualize the logs, the context values and the advanced information of the task.
3. Depending on the size of the task log, you can either watch a preview directly in the **Log** tab or download the complete log file by clicking the **Download entire log** button.

   Note that log files are stored in a folder for which the path has been defined in the **Job Conductor** node of the **Configuration** page. For more information, see the section about the Job Conductor parameters in *Configuring Talend Administration Center*.

5.5. Executing data integration Jobs on a server based on Amazon EC2

Talend Administration Center allows you to add servers hosted on an Amazon EC2 instance, to schedule Job executions on this instance and to manage the instance start-up and shutdown.

Prerequisites:

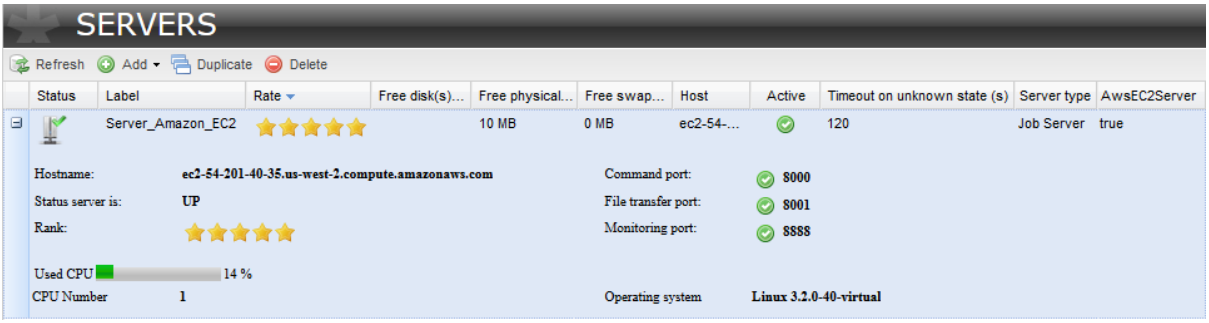
If you want to add a server hosted on Amazon EC2:

- You need to have an Amazon EC2 account with the corresponding key pair and security group. For more information, see the online Amazon EC2 documentation.
- If you wish to use your own Amazon Machine Images (AMI), it must include an Oracle JDK, Unzip as well as a JobServer installed as a service to enable task deployment on the Amazon cloud.
- It is recommended to increase the Tomcat memory. For more information on how to increase the memory of Tomcat, see the *Talend Installation Guide*.

5.5.1. Adding a server hosted on an Amazon EC2 instance

The following procedure describes how to add a server hosted on Amazon EC2 on the **Servers** page. For more information on how to add a simple execution server (JobServer or *Talend Runtime* type) , see *Adding an execution server*.

To perform this action via the MetaServlet application, use the `addServer` command. For more information about the MetaServlet parameters, see *Parameters and actions in metaServlet*.



1. From the toolbar on the **Servers** page, click **Add** > **Add EC2** to open the **Execution server** configuration panel.

2. Enter the following information:

Field	Description
Label	Name of the server. This field is mandatory.
Description	Free descriptive text.
Host	IP address of the server. This field is automatically completed when you save the server configuration.
Time zone	In the dialog box, select the time zone of the server in the list. To take advantage of the autocomplete feature, type the first three letters of the time zone you are searching for. This field is automatically completed when you save the server configuration.
Command port	Server port (8000 by default). This field is mandatory.
File transfer port	Port for file transfer (8001 by default). This field is mandatory.
Monitoring port	Port for monitoring (8888 by default). This field is mandatory.
Timeout on unknown status	Enter the predetermined period of time (in seconds) after which a specific action is to be taken on the selected task, in the event of unknown Job status due to an unavailable Job server (120 by default). This field is mandatory.
Username and **Password**	Type in the username and the password for user authentication to access the JobServer. Once you have typed in the password, this password is encrypted when saved in the database. These fields are automatically completed when you save the server configuration.
Use SSL	Select/clear the check box to use your own SSL Keystore to encrypt the data prior to transmission. For further information about creating and enabling an SSL Keystore, see the *Talend Installation Guide*.
Active	Select/clear the check box to activate/deactivate this server.
Access key id	Type in the access key ID corresponding to your Amazon account.
Secret access key	Type in the secret access key corresponding to your Amazon account.
Region id	In the list, select the Region ID corresponding to your Amazon account.
Security group	In the list, select the security group corresponding to your Amazon account.
Select AMI and **AMI/Image id**	Select the check box to look into your Amazon account the existing Amazon Machine Image IDs (AMIs) and to select the desired AMI in the **AMI** list. Note that if you select an AMI in the list, Unzip as well as a JobServer are automatically deployed on this AMI. Clear the check box to use your own AMI and to and type in your AMI in the **Image id** field. Note that if you use your own AMI, you need to have on it a JDK Oracle, Unzip as well as a JobServer installed as a service to enable task deployment on the Amazon cloud.
After execution	In the list, select the action to perform once the task is executed on the server: **Stop** to stop the instance, **Terminate** to remove the instance from Amazon or **Keep running** to keep it active.
Instance type	In the list, select the Amazon instance type.
Instance login	Type in the login to connect to your Amazon account.

Field	Description
Key pair	In the list, select the key pair corresponding to your Amazon account.
Private key	In this field, paste the content of your Amazon private key (*.pem* file). Note that you have to copy the content from the very beginning of the file, including `-----BEGIN RSA PRIVATE KEY-----` and `-----END RSA PRIVATE KEY-----`.

3. Click **Save** to validate the configuration or click **Cancel** to cancel the configuration. The newly created server appears on the list.

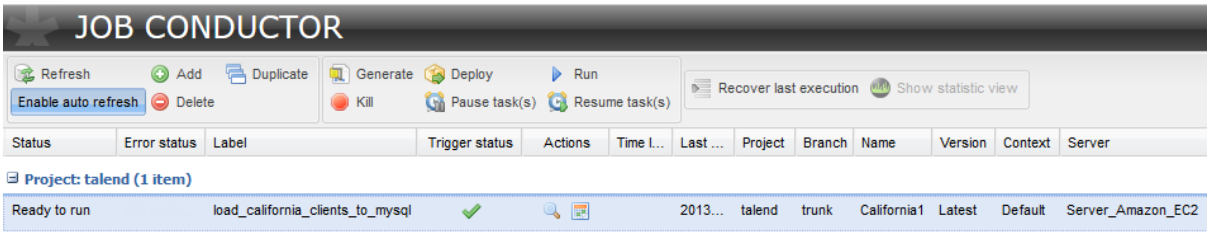
4. Once saved, select the server from the server list then click one of the following buttons in the right panel:

   - **Start instance**: to create (if it is not already created) and start the Amazon instance with the embedded execution server.
   - **Stop instance**: to stop the Amazon instance.
   - **Terminate**: to stop the instance and remove it from your Amazon account.

   If you want to be informed of the server change of status, you can add a notification on this server. For more information, see *How to add a server-based notification*.

   For more information on how to edit, duplicate or delete an execution server, see *Editing an execution server*, *Duplicating an execution server* and *Deleting an execution server*.

5.5.2. Scheduling/Executing tasks on a server hosted on an Amazon EC2 instance



Once you have configured your server hosted on Amazon and started the corresponding instance, you are able to execute one or more Jobs on this server, either by scheduling the Job execution with a trigger, or by running it manually.

1. On the **Job Conductor** page, add a task based on the Job you want to execute as explained in *Adding a Normal execution task*.

   Before saving the task creation form, make sure the server you have previously configured is selected in the **Execution server** field.

2. Select the newly created task and either add a trigger on it or run it manually using the relevant buttons in the top toolbar of the page, as explained in *Scheduling execution tasks*.

   The Job is being executed on the server hosted on Amazon and the settings you have configured in the **Servers** page about the actions to be performed after the Job execution are retrieved and applied: according to the option you chose, the Amazon instance is stopped, terminated or keeps running.

5.6. Planning the execution of data integration Jobs

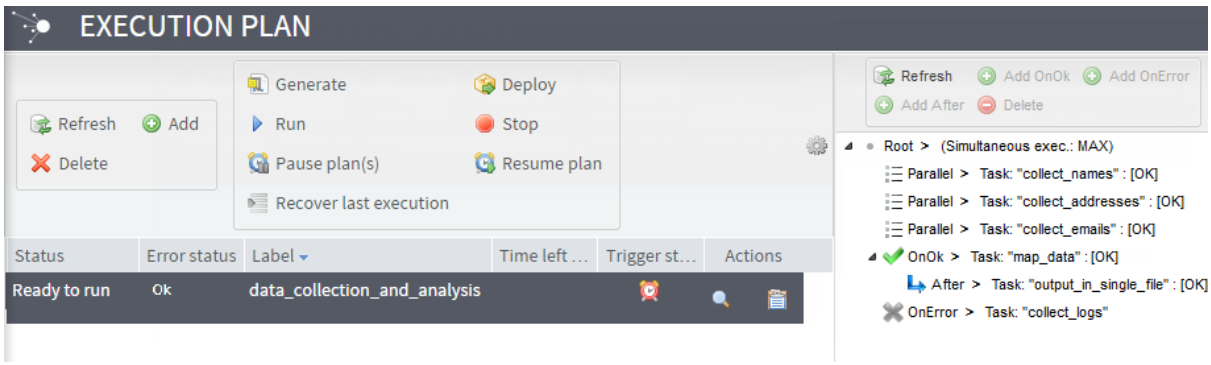
Only users that have the Operation Manager role and rights can have read-write access to this page. Other types of users can have read-only access or no access to the page. For further information on access rights, see User roles/rights in the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the appropriate authorization by the Administrator.

In *Talend Administration Center*, a task execution plan outlines dependencies among different tasks that form this plan, the thing we cannot see in the task list in the **Job Conductor** page. These dependencies are defined by using a hierarchical view of main and child tasks where each task in the hierarchical view can have a subordinate task.

From this page, you can define a task execution plan and then add different tasks to this plan in a specific order depending on the two conditions **OnOk** and **On Error**, or simply by using **After**. Later the tasks are executed in the specified order.

5.6.1. Accessing the Execution Plan page

In the **Menu** tree view, expand **Job Conductor** and click **Execution Plan** to display the list of the scheduled task execution plans (group of tasks) that will deploy and execute Jobs on a remote server.



When you access this list for the first time, no task execution plan shows on the list.

The default **Execution Plan** page provides the following information:

Column	Description
State	State of the task execution plans that are not yet executed. It can be: **awaiting execution** or **frozen exec**. Frozen exec will require a manual resume operation. *If the threshold for simultaneous executions is exceeded (by default more than 20 executions at the time), all simultaneous executions above the threshold will have the status "awaiting execution".* To reset the threshold according to your needs, look for `quartz.properties` in the installation folders of *Talend Administration Center* and change the threshold accordingly in the following parameter: `org.quartz.threadPool.threadCount = 20`.
Status	Status of the current task execution plan. It can be: **Ready to generate**, **Ready to deploy**, **Ready to run**, **Deployed**, **Killed** or **Incomplete configuration**.
Error status	Error message is displayed if the task execution plan does not complete properly.
Label	Name of the task execution plan to be executed.
Time left before next triggering	Time before the next triggering occurs.

Column	Description
Trigger status	Triggering state: **No trigger**: no trigger has been set for this plan; **Running**: the trigger is activated and the plan execution will start; **Completed**: the plan is complete; **All triggers paused**: the trigger has been paused and needs to be resumed manually.
Actions	Actions you can do: : opens a pop-up window with the last execution details of the selected plan. From this window, you can visualize the logs, the context values and the advanced information of a task, as well as navigate between the different task executions. : opens the execution history of the selected plan.

Some extra columns are hidden by default but can be displayed in the table. For more information, see *Customizing the display of the task list*.

These extra columns provide the following information:

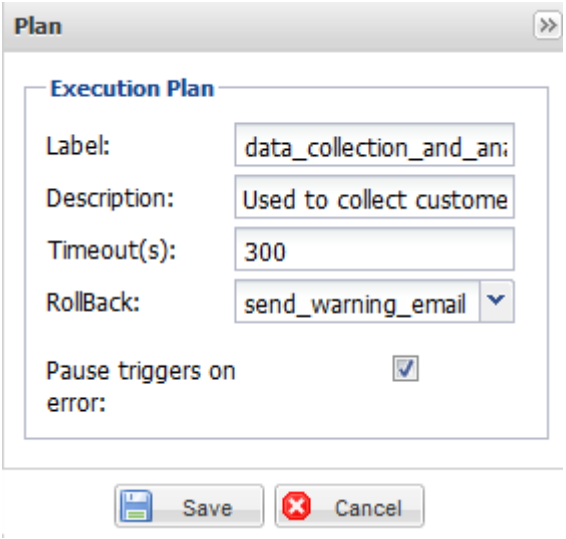
Column label	Description
Id	Unique identifier that can be used as parameter to launch the task via a Webservice, for example.
Description	The description text typed at task creation.
idQuartzJob	Quartz job identifier associated to the corresponding task.

5.6.2. Creating, running or resuming an execution plan

To create a task execution plan, you need first to make sure that you have created the executions tasks from the **Job Conductor** page before adding a plan to the plan list and then group tasks under this plan combining the parallel and the sequential execution approaches. For more information on how to create execution tasks, see *Adding a Normal execution task*.

Add a task execution plan

1. From the toolbar on the **Execution Plan** page, click **Add Plan** to open the plan creation panel to the right.



2. In the **Label** field, enter a name to the task execution plan you want to create and then, if required, provide any useful information regarding the plan in the **Description** field.

   In the **Timeout (s)** field, type in, if necessary, how long to wait, in seconds, before the plan and its related tasks are killed by the server.

   In the **Rollback** field, select, if necessary, the task that will be executed if the plan is killed due to a timeout. For example, you can set a task that will warn the administrator (by email) that the plan has been killed, or that will perform the same action as the last task of the plan that could not be executed.

   Select the **Pause triggers on error** check box to pause in order to pause the trigger if an error occurs during the execution of a task.

3. Click **Save** to validate the configuration or **Cancel** to cancel the creation of the task execution plan.

   The newly created plan is listed in the **Execution Plan** list.

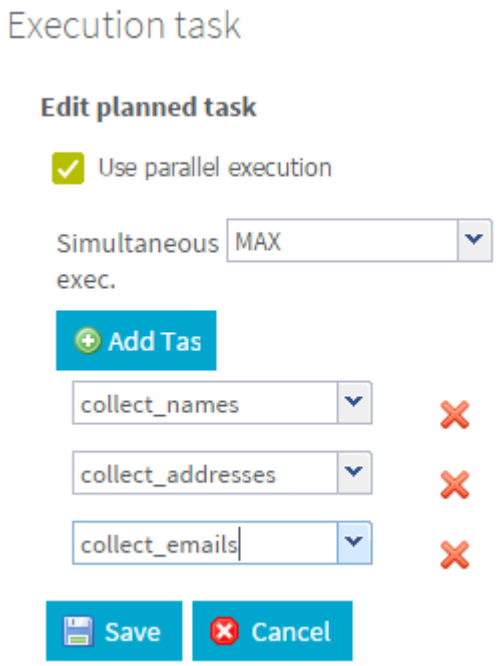
Group tasks under the plan based on OnOK, OnError or After conditions

1. In the **Execution Plan** list, select the plan to which you want to add tasks.
2. Click **Root: please configure this node** in the right panel.

   The **Edit planned task** panel opens.

3. To define multiple tasks for parallel execution at the root node, select the **Use parallel execution** check box.

   The configuration options for parallel execution appear.



4. Click the **Add Task** button repeatedly to add as many task selection lists as needed, and select the desired tasks from the lists.

   Note that the same task cannot be added several times in the same node for parallel execution.

5. Select the number of tasks for parallel execution from the **Simultaneous exec.** list, *MAX* chosen here to run all the selected tasks in parallel.

   - *MAX* means all the selected tasks will be executed simultaneously.

- If *N* tasks are defined for parallel execution, the list also offers the options of *1~N*. This means, you can choose *1* to run one task at a time, *x* (an integer between *1~N*) to run *x* tasks at a time, or *N* to run all the tasks at a time, thus achieving flexible resource allocation for better performance.
- A task defined for parallel execution cannot have the sub-nodes such as **OnOk**, **OnError** or **After**.

6. After the root node has been configured, click **Root > (Simultaneous exec.: MAX)** to add child nodes: **OnOk**, **OnError** and **After**.

   To do so, click the buttons in the **Planned task tree view** panel.

Buttons	To...
Add OnOk	add a child task that will be launched if the parent task finalizes without error.
Add OnError	add a child task that will be launched if the parent task finalizes with error.
Add After	add a child task that will be launched after the parent task finalizes, regardless of its error status.

OnOk and **OnError** can coexist as child nodes but neither of them can exist with **After** as child nodes.

7. Click **Add OnOk** to add an **OnOk** node first.

   The task selection panel appears on the right.

8. Select a task from the **Task** list and click **Save**.

9. Click **OnOk > Task: "Third_Task"** and then the **Add OnError** button to add a child node.

   Select a task from the **Task** list and click **Save**.

10. Click **Root > (Simultaneous exec.: MAX)** and then the **Add OnError** button to add an **OnError** child node for the root. Then select a task for this node.

    Add an **After** child node for this **OnError** child node as instructed above. Then select a task for this node.

Insert a task in an existing execution plan (optional)

You may want to insert a task before/after an existing task in your execution plan once its structure has been defined. To do so:

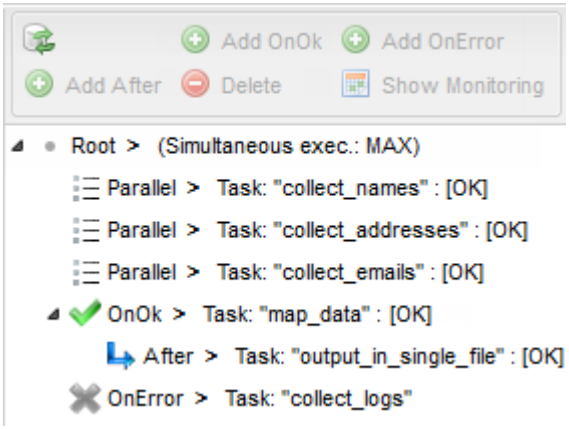
1. Select the execution plan, then select the task before/after which you want to add a task.
2. Right-click the task and select **insert after**/**before** > **Add OnOk**/**Add OnError**/**Add After** according to the action you want to perform.
3. Select a task from the list and save your changes. The new task is displayed before/after the task you have previously selected.

Run the execution plan manually

This procedure explains how to run an execution plan manually. For more information on how to schedule it with triggers, see *Scheduling an execution plan*.

1. On the **Execution Plan** page, select the execution plan.
2. Click **Run** on the toolbar to execute the tasks according to the order and conditions set in the hierarchical view.

You can add triggers to any plan to schedule its execution based on time or event, using time triggers or file triggers respectively. For further information, see *Scheduling an execution plan*.



Upon completion of the execution, the preceding icons at respective nodes light up if their tasks have been launched. Meanwhile, the status of the executed tasks will appear in the square brackets on the right.

The table below explains these icons:

Icon	Description
	The **OnOk** node's task has been launched. The status of execution is given in the square brackets on the right.
	The **OnError** node's task has been launched. The status of execution is given in the square brackets on the right.
	The **After** node's task has been launched. The status of execution is given in the square brackets on the right.

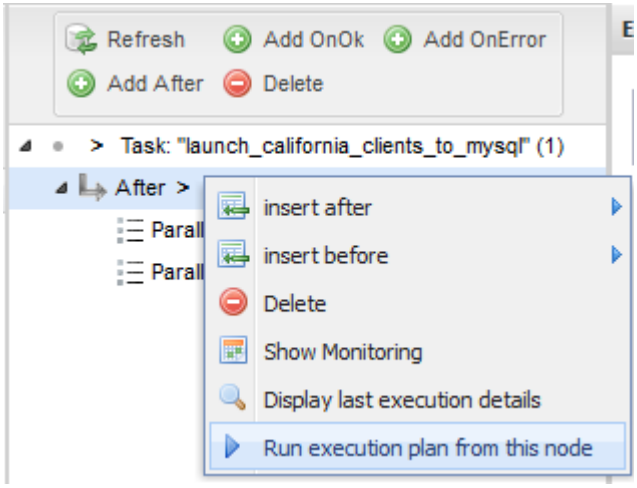
Once the plan has been executed, you can also visualize its execution details (logs, history, advanced information) by clicking the corresponding icons in the **Actions** column of the **Execution Plan** page. To display the execution details of a specific task, select it in the central panel, right-click and select **Display last execution details**. For more information, see *Monitoring task executions in the Monitoring node*.

Restart a plan from a specific task or node

To ease error recovery, you may want to resume the execution of your plan from a specific task or node. For example, if one task of your plan fails because of a database connection issue and causes the plan to stop, you have the possibility to resume the execution of the plan from this specific task once the issue has been fixed, and thus to skip the previous tasks from the plan that were successfully executed.

1. On the **Execution Plan** page, select the execution plan, then select the task/node from which you want to restart the plan.

2. Right-click on the task/node and select **Run execution plan from this node** in the list.



The execution of the plan is resumed from the selected task/node.

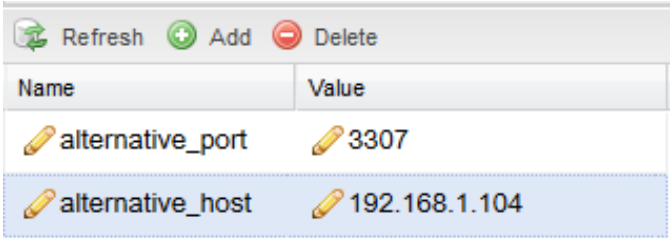
5.6.3. Setting the execution plan parameters

The **Parameter** view in the **Execution Plan** page lists values common to the whole execution plan with all its assigned tasks.

You can add/modify a plan parameter and the parameter value from this view. These parameters will display in the **Plan parameter** list in the task context parameter view. For further information, see *Modifying context parameters for tasks in an execution plan*.

Set a new plan parameter and value

1. In the upper half of the **Execution Plan** page, double-click the plan for which you want to add parameters.
2. In the lower half of the **Execution Plan** page, click **Parameters** to display the corresponding view.



3. Click **Add** on the toolbar to add a new line for the new parameter.
4. Click the **Name** cell and set the name for the new parameter.
5. Click the **Value** cell and set the value for this parameter.

   The new plan parameter and value will display in the **Plan parameter** list in the task context parameter view, ready to be selected before the execution of the plan.

When the context parameter is of type String, do not put its value between double quotes, unless if double quotes are needed in to the string value for further use.

Modify a plan parameter and value

1. In the upper half of the **Execution Plan** page, select the plan for which you want to modify parameters.

2. In the lower half of the **Execution Plan** page, click **Parameters** to display the corresponding view.
3. Click the name of the parameter you want to modify and modify the name as required.
4. Click the value of the parameter you want to modify and modify the value as required.

   The plan parameter and value will be updated accordingly in the **Plan parameter** list in the task context parameter view.

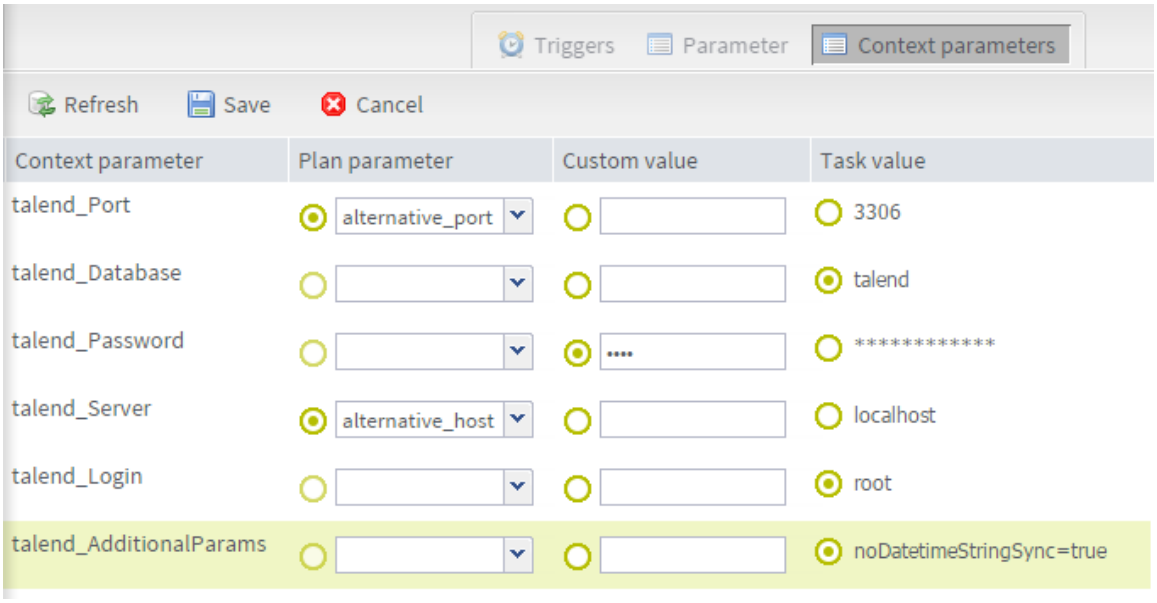
   When the context parameter is of type String, do not put its value between double quotes, unless if double quotes are needed in to the string value for further use.

5.6.4. Modifying context parameters for tasks in an execution plan

The **Execution Plan** page makes it possible to modify the values of the context parameters for a specific task held in a plan. This will enable you to execute the task with the new values without really changing the task context parameter on the Job Conductor.

To set new context parameters values for a specific task in an execution plan, complete the following:

1. In the upper half of the **Execution Plan** page, select the plan that holds the task for which you want to modify the context values.
2. In the panel holding tasks, select the task for which you want to modify the context value.
3. In the lower half of the **Execution Plan** page, click **Context parameters** to display the corresponding view.



   The context parameters you defined in *Talend Studio* for the selected task (Job) display in the list along with their original values or with the task value defined in the Job Conductor. For more information on how to define custom value for a task in the Job Conductor, see *Modifying context parameters for specific tasks*.

4. Click in the **Custom value** cell and set the new value for the corresponding context parameter as required.

   When the context parameter is of type String, do not put its value between double quotes, unless if double quotes are needed in to the string value for further use.

5. Select/clear the relevant custom value button to activate/deactivate the new value when executing the task. If the custom value is not activated, the task will be executed with the task value.

6. If required, select in the **Plan parameter** column the relevant plan value from the list of plan parameter values.

The **Plan parameter** column lists values common to the whole execution plan with all assigned tasks, and not to one task in particular as it is the case with the **Custom value** column. For further information on how to define the plan parameter and value, see *Setting the execution plan parameters*.

7. Click **Run** to execute the plan with the new task and plan values of the context parameters, or click **Reset** on the toolbar to go back to the original values defined in *Talend Studio*.

5.6.5. Scheduling an execution plan

You can schedule your execution plans based on time or event, using time triggers or file triggers respectively.

Time-based scheduling can be linked to a simple trigger or to a CRONUI trigger depending on the way you want your time-based triggered plan to be executed, either at a defined time and date or regularly over a period of time.

You can also schedule your plan to be executed based on a file trigger. The presence of a file in a defined location will trigger the job execution plan.

Or you can also schedule your plan to be execute from a Webservice.

1. On the **Execution Plan** page, click the plan you want to schedule then click **Add trigger** in the lower part of the page.

2. Select from the contextual menu the type of trigger you want to add.

   A relevant panel opens to the right to enable you creating the relevant trigger.

The procedure to add any of the trigger types to an execution plan is exactly the same as that of adding a trigger to a task. For more information about adding triggers to an execution plan, see:

- *How to add a simple trigger onto a task*.
- *How to add a CRON-based trigger*.
- *How to add a File trigger*.

If you define several types of triggers for the same task, the first trigger to be checked is the first to be executed.

For further information about triggers and trigger management, see *Scheduling execution tasks*.

5.6.6. Editing an execution plan

To edit an execution plan, do the following:

1. On the **Execution Plan** page, select the plan you want to modify.

   Its details are displayed in the **Information** view in the **Execution Plan** panel to the right.

2. In the **Edition** view, make the relevant changes to the selected plan.

3. Click **Save** to validate the modifications or **Cancel** to cancel them.

5.6.7. Stopping an execution plan

To stop an execution plan, do the following:

1. On the **Execution Plan** page, select the plan you want to stop.
2. In the top toolbar, click **Stop**. Once the current running task is finished, the plan stops and the next task is not executed. Note that, if the task you want to stop takes a long time to be executed, you may need to kill it manually from the **Job Conductor** page using the **Kill** button in the top toolbar.

5.6.8. Deleting an execution plan

To delete one or more execution plans from the plan list, do the following:

1. On the **Execution Plan** page, select the plan you want to delete.

   Its details are display in the **Execution Plan** panel.
2. On the toolbar, click **Delete**.

   A confirmation dialog box opens.
3. Click **OK** to close the dialog box and remove the plan from the plan list.

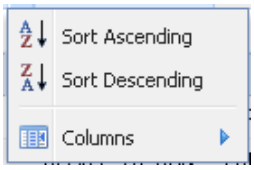
5.6.9. Customizing the display of the execution plan list

You can customize the view of the execution plan list to restrict the number of the displayed plans according to different criteria. You can also show/hide one or more columns in the task list.

1. On the **Execution Plan** page, put the pointer on a column name and click the drop-down arrow.
2. In the drop-down list, select:

Item	To...
Sort Ascending	arrange the list in an ascending order
Sort Descending	arrange the list in an descending order
Columns	display a drop-down list where you can select/clear the check box(es) next to the column(s) you want to show/hide

The figure below shows the list view options in the drop-down list.



Once you have customized the list, your preferences are saved (column filters, order or width) and kept even after the page is refreshed. To reset the page, you have to click the cog icon on the right of the top toolbar.

5.6.10. Refreshing the execution plan list

The plan list is refreshed automatically at regular intervals of time, but you can refresh it any time by clicking **Refresh** on the toolbar.

5.7. Executing Big Data Streaming Jobs from Big Data Streaming Conductor

In the **Big Data Streaming** page of *Talend Administration Center*, an execution task gathers the script generation, deployment and execution phases of Big Data Streaming Jobs, that is to say, the Spark Streaming Jobs and the Storm Jobs. You can launch this task, from this single web-based application.

This module is used almost the same way as the **Job Conductor** module. Therefore, you are recommended to refer to *Executing data integration Jobs from Job Conductor* to discover how to use this **Big Data Streaming Conductor** module while the current section outlines only the distinct capability differences of **Big Data Streaming Conductor** from the capabilities of **Job Conductor**:

1. This Conductor is used to manage the Spark Streaming Jobs and the Storm Jobs only.
2. The **Triggers** feature is not available to **Big Data Streaming Conductor**, because once a streaming Job has launched, it continuously runs and processes each incoming message as long as it is published.
3. When this Conductor is used to manage a Storm Job, the **Monitor** button in the **Big Data Streaming** page directs you to the **Storm UI** web console provided by the Storm system itself.
4. Since a Storm topology cannot be paused or resumed, you cannot pause or resume a Storm task from the **Big Data Streaming** page, either.
5. When executing a Storm task from this **Big Data Streaming Conductor**, the Conductor kills and removes any topology that has the same name as this topology you want to execute in the Storm cluster, and then submits this new topology to the cluster. This feature overrides the way you have defined to run this topology in the **Storm configuration** tab of the corresponding Storm Job in the Studio.
6. Killing a Storm task from the **Big Data Streaming** page using the **Kill** button kills and removes the Storm topology running in the Storm cluster. This feature overrides the way you have defined to kill this topology in the **Storm configuration** tab of the corresponding Storm Job in the Studio.

   For further information about how the **Storm configuration** tab is used, see the scenario described in the **tKafkaInput** section in *Talend Components Reference Guide*.
7. The **JVM parameters** feature is not available to the **Big Data Streaming Conductor** module.

5.8. Publishing Services, Routes, and Jobs

In *Talend Administration Center*, the **Publisher** allows you to publish your Route, Service or Job item that is designed in *Talend Studio* into the Nexus Artifact repository. This Artifact repository will allow you to centralize, manage and register all the items created and to be deployed on your execution server.

Access to the **Publisher** page depends on your license. For more information, please refer to *What modules and features are available depending on your license* .

5.8.1. Working with publishing tasks

Only users that have the Operation Manager role and rights can have a read-write access to the tasks list. Other types of users can have a read-only access or no access to the list. For further information on access rights, see User roles/rights in the Administration Center . When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the right authorization by the Administrator.

The **Publisher** page allows you to work with publishing tasks to publish your Route, Service or Job item that is designed in *Talend Studio* into the Nexus Artifact repository.

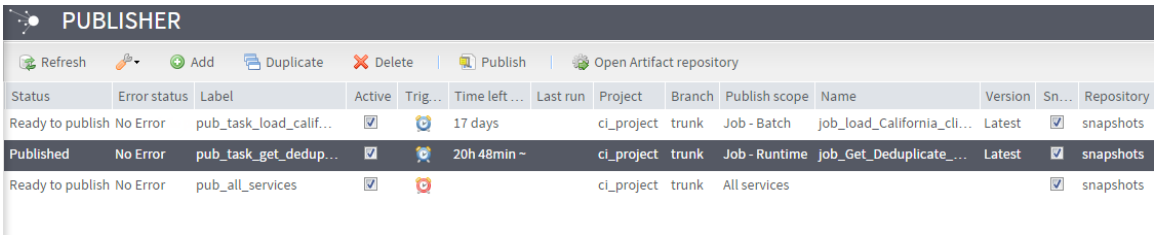
To publish the Route, Service or Job item into the Artifact repository, you can also use the Commandline. Type in `help` to show the list of commands and their respective description. For more information about Commandline, see *CommandLine features*.

Prerequisites:

- the CommandLine application is started.
- Nexus Artifact repository is started and its connection parameters are filled in the **Artifact Repository** node of the **Configuration** page. For more information, see *Setting up the Artifact Repository parameters*.

To access the publishing task list, complete the following:

- In the **Menu** tree view, click **Conductor**, then **Publisher** to display the list of tasks that will publish your Route, Service or Job item into an Artifact repository.



When you access this list for the first time, no task shows on the list.

The default **Publisher** page provides the following information:

Column label	Description
Status	Status of the current task. It can be: **Ready to publish**, **Publishing**, **Published**, **Unknown**, **Incomplete configuration**.
Error status	Error message is displayed if the task does not complete properly.
Label	Name of the task to be executed.
Active	True or false indicating if the publishing task is active or not. If a task is deactivated, it can not be published.
Trigger status	Triggering state: **No trigger**: no trigger has been set for this task. **Running**: the trigger is activated and the task execution will start. **Completed**: the task is complete. **All triggers paused**: the trigger has been paused and needs to be resumed manually.
Time left before next triggering	Time before the next triggering occurs.
Last run	Date and time of the last time publishing task was executed.
Project	Name of the project containing the Route, Service or Job item(s) to be published.

Column label	Description
Branch	Name of the branch/tag containing the Route, Service or Job item(s) to be published.
Publish scope	The scope of item(s) to be published. It can be individual Route/Service/Job, all Services/Routes, all Services and Routes.
Name	The name of the individual Route, Service or Job item to be published. This column is empty if the task will publish all Routes or all Services in the specified project and the SVN branch.
Version	The version of the individual Route, Service or Job item to be published. This column is empty if the task will publish all Routes or all Services in the specified project and the SVN branch.
Publish as Snapshot	True or false indicating if the item(s) will be published as snapshot.
Repository	The repository in which to publish the artifact item(s), either **releases** or **snapshots**.
Group ID	The name of the group in which to publish your artifact item(s).
Artifact	The name of the artifact item. This field is empty if the task will publish all Routes or all Services in the specified project and the SVN branch.
Publish Version	The version of the artifact item. This field is empty if the task will publish all Routes or all Services in the specified project and the SVN branch.

Some extra columns are hidden by default but can be added in the table. For more information, see *Customizing the display of the task list*.

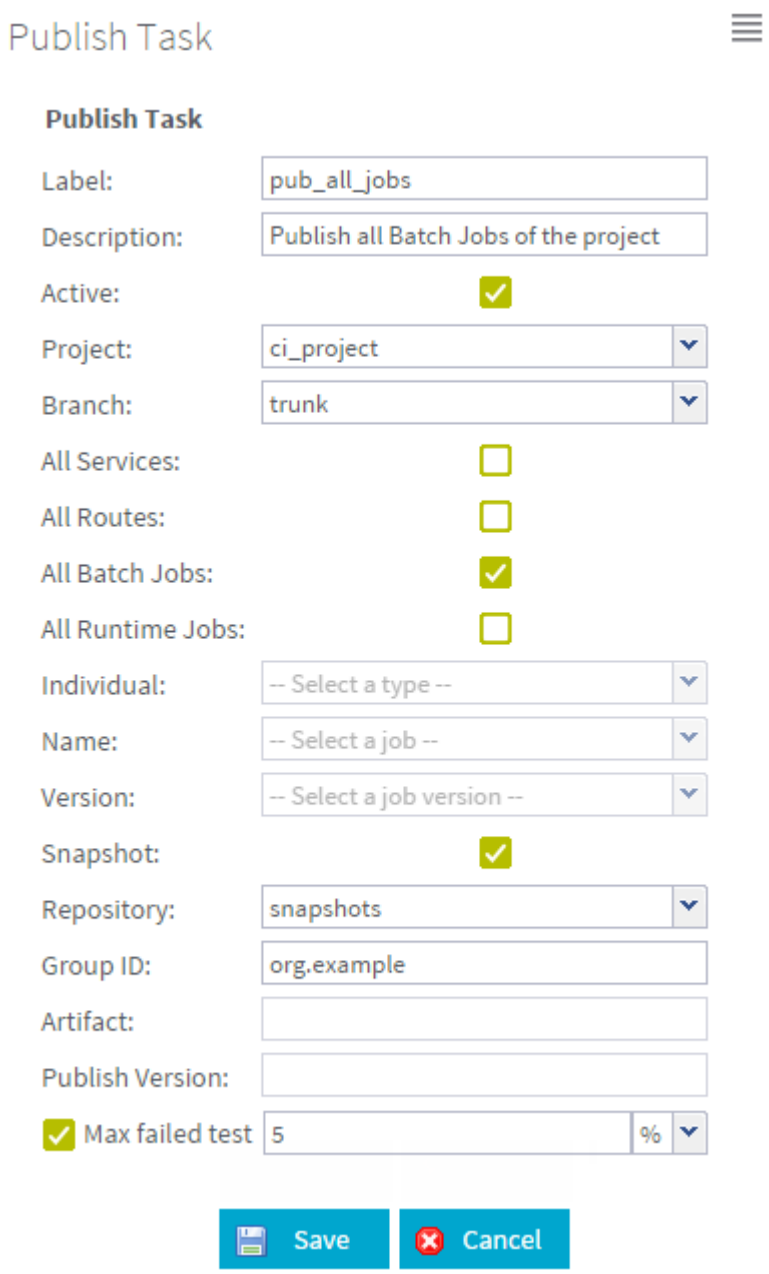
These extra columns provide the following information:

Column	Description
ID	Unique identifier that can be used as parameter to launch the task via a Webservice, for example.
Description	The description text typed at task creation.
Next triggering on	Date and time of the next triggering.
Last ended run	Date and time of the last time the publishing task was complete.
CommandLine version	Revision number of the CommandLine.

5.8.1.1. Adding a publishing task

To add a publishing task from *Talend Administration Center*, complete the following:

1. From the toolbar on the **Publisher** page, click **Add** to clear the **Publish Task** configuration panel.



2. Enter/select the following information as necessary.

Field	Description
Label	Type in the name of the task to be triggered.
Description	Provide any useful information regarding the task to be carried out.
Active	Select/clear this check box to activate/deactivate this task. If a task is deactivated, it can not be published.
Project	Select the project that holds the Service, Job, or Route to be published.
Branch	Select the SVN branch/tag, if any is created, of the project containing the Service, Job, or Route to be published. For more information about projects stored on SVN, see *Managing SVN/Git branches and tags for a project*.
All Services	Select this check box to publish all the Services in the project and branch defined above at execution. When you publish a task of **All Services** type, the services will always get updated with all last versions and new developed services will be added automatically.

Field	Description
All Routes	Select this check box to publish all the Routes in the project and branch defined above at execution.
All Batch Jobs	Select this check box to publish all the Standard Jobs in the project and branch defined above at execution.
All Runtime Jobs	Select this check box to publish all the OSGI Jobs in the project and branch defined above at execution.
Individual	Select from **Route**, **Service**, **Job - Runtime** (*.kar* file) or **Job - Batch** (*.jar* file) in the list to publish. This field is disabled when **All Services**, **All Routes**, **All Batch Jobs** or **All Runtime Jobs** check box is selected.  Note that **Individual Job** is the option to be used to publish the REST service because **Individual Service** and **All Services** only concern SOAP services.
Name	All the items of the **Individual** from the selected project are shown in the list. Select the item you want to publish. This field is disabled when **All Services**, **All Routes**, **All Batch Jobs** or **All Runtime Jobs** check box is selected.
Version	The versions of the item are automatically retrieved. Select **Latest** or one of the existing versions in the SVN project from the list. This field is disabled when **All Services**, **All Routes**, **All Batch Jobs** or **All Runtime Jobs** check box is selected.
Publish as Snapshot	Select this check box to publish the item(s) as snapshot.
Repository	Select **releases** or **snapshots**. By default, the release or snapshot repository is selected depending on the **Publish as Snapshot** check box.
Group ID	By default this field is automatically filled in with the *org.example* group ID. Change it by typing in the name of the group in which to publish your artifact item.
Artifact	This field is automatically filled in with the name of the item to publish. Change it according to your need. This field is disabled when **All Services**, **All Routes**, **All Batch Jobs** or **All Runtime Jobs** check box is selected.
Publish Version	This field is automatically filled in with the version of the item to publish. Change it according to your need. This field is disabled when **All Services**, **All Routes**, **All Batch Jobs** or **All Runtime Jobs** check box is selected.
Max failed test	This option appears when the **All Routes** or **All Batch Jobs** check box is selected, or when **Route** or **Job - Batch** is selected in the **Individual** list. Select this check box and enter the maximum number or percentage of failed tests associated with Jobs or Routes. When launching the publish task, if the actual failed tests exceed this value, the Jobs or Routes will not be published and an error message `Test failed exceeded the threshold` will be shown in the **Error status** column of the **Publisher** page. For more information on how to create and execute tests associated with Jobs and Routes, see the *Talend Studio User Guide* and the *Talend Software Development Life Cycle Best Practices Guide*.

3. Click **Save** to validate the configuration or **Cancel** to cancel the creation of the task.

5.8.1.2. Editing a task

To edit a task:

1. On the **Publisher** page, select the task you want to modify. Its details are displayed in the **publishing task** configuration panel.
2. Make the relevant changes to the task details where necessary.
3. Click **Save** to validate the changes or **Cancel** to cancel the changes.

5.8.1.3. Duplicating a task

To avoid creating a new task from scratch, you can duplicate an existing one and work around its metadata to have a new task in the list.

To duplicate a task, complete the following:

1. On the **Publisher** page, select the task you want to duplicate.
2. On the toolbar, click **Duplicate**. The panel to the right shows the metadata of the selected task.
3. Modify the metadata as needed in order to create a new task.
4. Click **Save** to validate the operation or **Cancel** to cancel it.

   The new task is listed in the **Execution tasks** list.

5.8.1.4. Deleting a task

To delete one or more tasks from the task list, complete the following:

1. On the **Publisher** page, select the task you want to delete. Its details are displayed in the **publishing task** configuration panel.
2. On the toolbar, click **Delete**. A confirmation dialog box appears.
3. Click **OK** to remove the task from the task list.

5.8.1.5. Searching a task

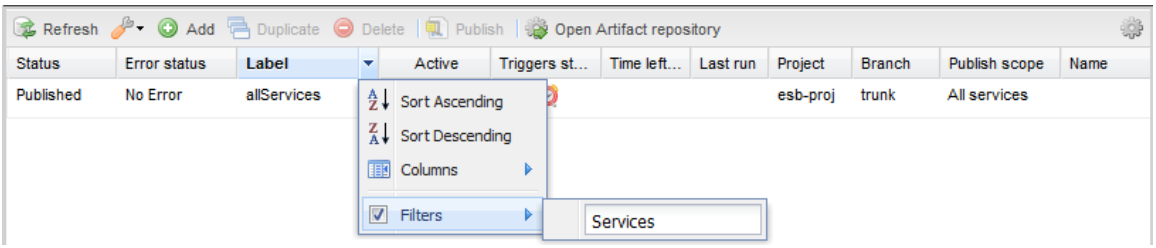
If you have a great number of tasks and want to filter them, you can do so by typing key words or by selecting some check boxes in the **Filters** fields of the columns listed below:

- **Active**
- **Artifact**
- **Branch**
- **CommandLine version**
- **Description**
- **Error status**
- **Group ID**
- **ID**
- **Label**
- **Last ended run**
- **Last run**
- **Name**
- **Next triggering on**

- **Project**
- **Publish as Snapshot**
- **Publish scope**
- **Publish Version**
- **Repository**
- **Status**
- **Time left before next triggering**
- **Trigger status**
- **Version**

Example of how to apply a filter on the label of several tasks

1. Click the arrow on the **Label** column to display its options, then select the **Filters** option.



2. Type in the name by which you want to filter the tasks. Here, the text *Service* is used to display only the tasks whose names include these terms.

   The filtered column appears in blue bold. To remove the filter, clear the **Filters** check box in this column.

   To remove all filters and reset the page, click the cog icon on the right of the top toolbar.

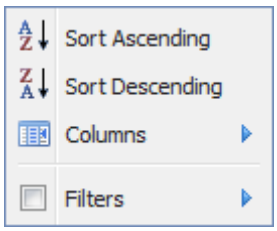
5.8.1.6. Customizing the display of the task list

You can customize the publishing task list view to restrict the number of displayed tasks according to different criteria. You can also show/hide one or more columns in the task list.

1. On the **Publisher** page, put the pointer on a column name and click the drop-down arrow.
2. In the drop-down list, select:

Item	To...
Sort Ascending	arrange the list in an ascending order
Sort Descending	arrange the list in an descending order
Columns	display a list where you can select/clear the check box next to the column(s) you want to show/hide
Filters	display a list where you can select/clear the check box next to the filter(s) by which you want to filter the tasks

The below figure shows the list view options in the drop-down list.



Once you have customized the list, your preferences are saved (column filters, order or width). To reset the page, you have to click the cog icon on the right of the top toolbar.

5.8.1.7. Refreshing the task list

The task list is refreshed automatically at regular intervals of time, but you can refresh it any time by clicking **Refresh** on the toolbar.

5.8.1.8. Launching a task

Once the task is created and listed in the publishing task list, you will be able to launch it via the toolbar at the top of the **Publisher** page. To do so:

1. Select the task in the publishing task list.
2. Click the **Publish** button of the toolbar.

   The status of the task changes from **Ready to publish** to **Publishing** and then **Published**.

If you select a task that is not active and click the **Publish** button of the toolbar, a dialog box appears asking if you want to activate the task before publish. Click **OK** to activate the task and publish it or click **Cancel** to cancel it.

You can also define a trigger to launch a publishing task. For further information, see *Scheduling publishing tasks*.

5.8.1.9. Accessing the artifact repository

From the **Publisher** page of *Talend Administration Center*, you can access at any time the Nexus artifact repository containing the two **snapshots** and **releases** artifact repositories on which all the artifacts to be deployed and started in *Talend Runtime* are published. To do so, simply click the **Open Artifact repository** button in the toolbar of the **Publisher**.

Once connected to your artifact repository, you will be able to access all the available repositories and browse to all the artifacts published in them.

For more information on how to install these artifact repositories, see the *Talend Installation Guide*.

Nexus is based on Sonatype Nexus: for more information on how to use it, see Sonatype Nexus's documentation on http://www.sonatype.org/nexus.

5.8.2. Scheduling publishing tasks

Only users that have the Operation Manager role and rights can have read-write access to the triggers list. Other types of users can have read-only access or no access to the list. For further information on access rights, see User roles/rights in

the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the appropriate authorization by the Administrator.

On the **Publisher** page, you can schedule a task using simple or periodic multi-platform CRON-like triggers **(CronTrigger)**.

On the **Triggers** view at the bottom half of the **Publisher** page, you can add triggers, edit triggers, enable/disable triggers, delete triggers and customize the trigger list.

The trigger list includes the following information:

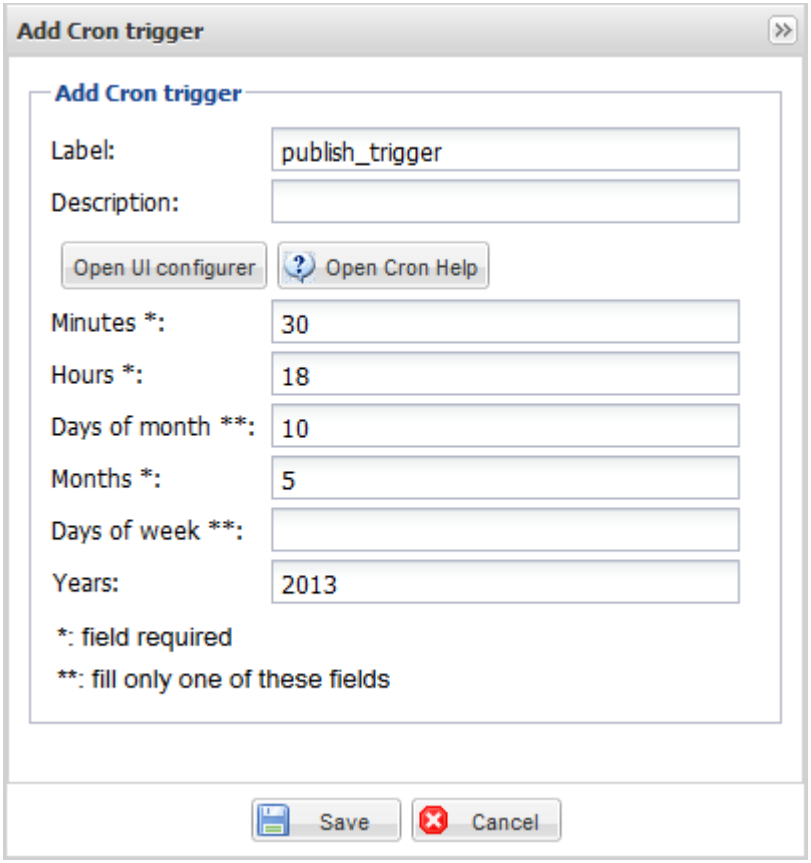
Column	Description
Label	Trigger name
Description	Provide any useful information regarding the trigger
Trigger type	**CronTrigger**
Status	Status of the current trigger. **Normal**: The trigger is ready to be launched **Waiting for the task to end**: The triggering has taken place, the task execution is in progress **Paused**: The trigger is disabled **Completed**: The trigger execution is complete **Error/Invalid**: The trigger execution has failed or is invalid
Previous triggering on	Date and time when the previous triggering took place
Time left before next triggering	Time to elapse before the next triggering starts.
Next triggering on	Date and time when the next triggering will take place.
Number of triggerings	Estimated number of triggering that will take place over the selected period of time and/or for the number of triggering repetition set.
Final triggering on	Estimated or set triggering end time.
Start time	Date and time when the first triggering takes place.
End time	Actual time when the last triggering ended.

5.8.2.1. Adding a trigger

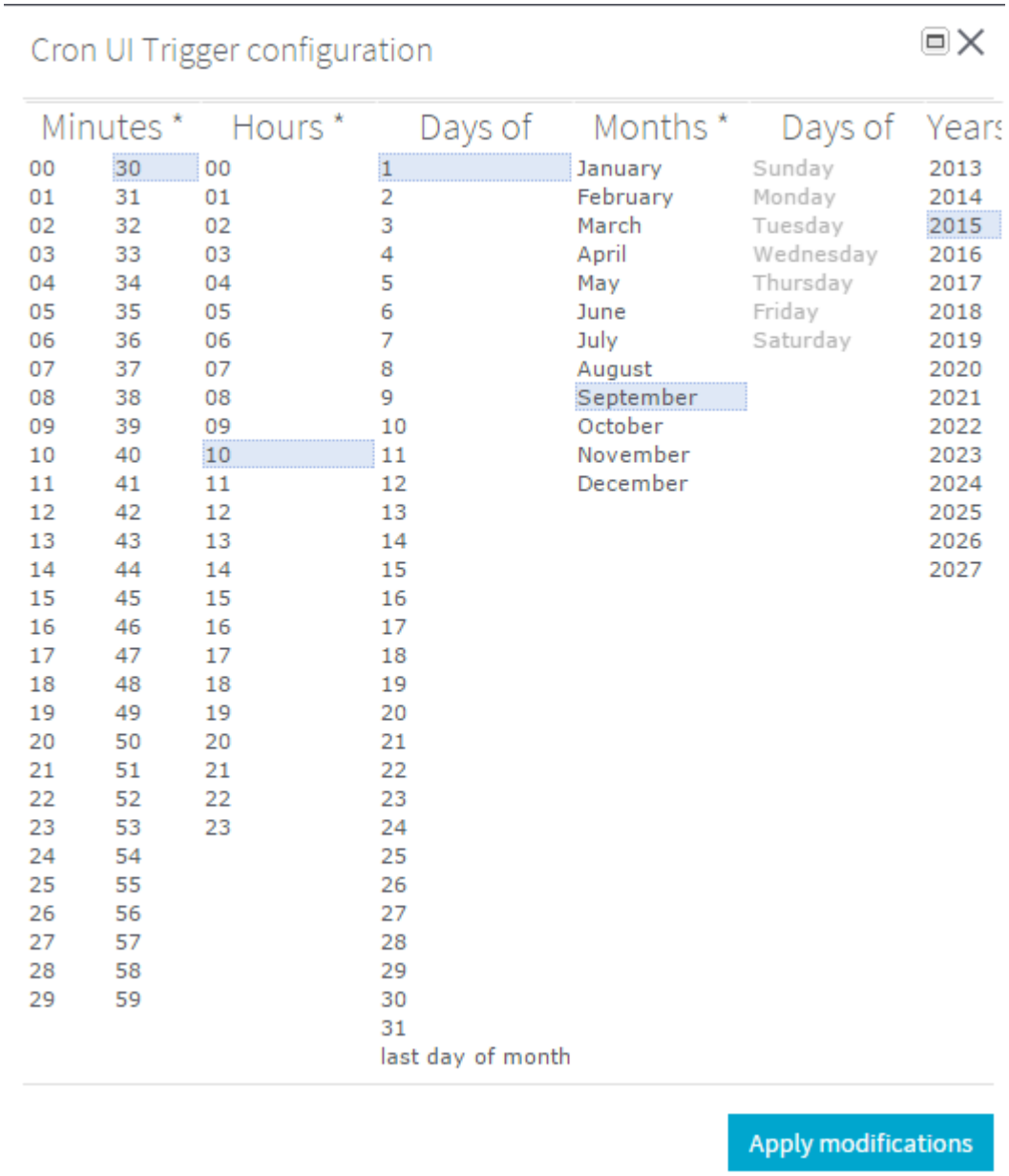
To schedule the execution of your tasks, you can set CRON-based triggers onto a task which will start its execution on a regular basis (daily, weekly, monthly and so on). To do that:

1. On the **Publisher** page, select the task you want to implement a trigger on.

2. In the **Triggers** view, click **Add trigger...** and then select **Add CRON trigger** from the drop-down list. The **CRON trigger** configuration panel opens.



3. Fill in the **Label** and **Description** fields and then click **Open UI configurer** to open the **[Cron UI trigger configuration]** dialog box.



4. Select the hour and date items at which you want the task to be executed as the following:

Field	Description
Label	Enter a name to the trigger you are setting.
Description	Enter a description for the trigger type and usage.
Minutes	The minute at which you want to execute the task.
Hours	The hour at which you want to execute the task.
Days of month	The month day on which you want to execute the task.
Months	The month in which you want to execute the task.
Days of week	The week day on which you want to execute the task.
Years	The year in which you want to execute the task.
	Fields marked with **: Select one or more week day OR one or more dates. **Fields marked with ***: mandatory information. For multiple selection, press **Ctrl + click**.

5. Click **Apply modifications**. The dialog box closes and the selected data is displayed in the **Add Cron trigger** configuration panel.
6. Click **Save** to validate the CRON-based trigger configuration or **Cancel** to cancel the operation.

The **Trigger Status** for the selected task changes from **No Trigger** to **At least one trigger is running**.

5.8.2.2. Editing a trigger

To edit a trigger entry, do the following:

1. On the **Publisher** page, select the relevant task to display the corresponding triggers in the trigger list.
2. Select the trigger entry you want to modify. Its details are displayed in the configuration panel to the right.
3. Make the relevant changes to trigger details where necessary.
4. Click **Save** to validate the changes or click **Cancel** to cancel.

5.8.2.3. Disabling/Enabling a trigger

To disable or enable a trigger, do the following:

1. On the **Publisher** page, select the relevant task to display the corresponding triggers and their details in the trigger list.
2. Select the trigger entry you want to disable/enable.
3. From the toolbar in the **Triggers** panel, click **Pause trigger**/**Resume trigger**. The selected trigger icon displays as disabled/enabled.

You cannot disable/enable a trigger if its status is **Completed**.

5.8.2.4. Deleting one or more triggers

To delete one or more triggers from the trigger list, do the following:

1. On the **Publisher** page, select the relevant task and click the **Triggers** tab to display the corresponding triggers and their details in the trigger list.
2. Select the trigger entry or entries you want to delete.
3. From the toolbar in the **Triggers** panel, click **Delete**. A confirmation dialog box appears.
4. Click **OK** to remove the selected trigger entry or entries from the trigger list.

5.8.2.5. Customizing the display of the trigger list

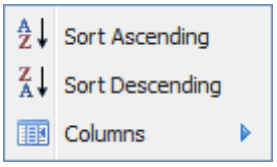
You can customize the trigger list view to restrict the number of displayed triggers according to different criteria. You can also show/hide one or more columns in the trigger list.

1. On the **Publisher** page and in the **Triggers** panel, put the pointer on a column name and click the drop-down arrow.

2. In the drop-down list, select:

Item	To...
Sort Ascending	arrange the list in an ascending order
Sort Descending	arrange the list in an descending order
Columns	display a drop-down list where you can select/clear the check box next to the column(s) you want to show/hide

The figure below shows the list view options in the drop-down list.



Once the list is customized, your preferences are saved (column filters, order or width) and kept even after the page is refreshed. To reset the page, you have to click the cog icon on the right of the top toolbar.

5.9. Executing Services, Routes, and data service Jobs, and applying Profiles from ESB Conductor

In the **ESB Conductor** page of *Talend Administration Center*, you can manage ESB execution tasks, including the deployment and execution phases of Services, Routes, data service Jobs and other generic OSGi features. For more information, see *Working with ESB execution tasks*. You can also apply profiles holding resources and/or configurations throughout all your Talend Runtimes. All these actions can be performed from this single Web-based application. For more information, see *Applying a profile from the ESB Conductor*.

Access to this module depends on your license. For more information, please refer to *What modules and features are available depending on your license* .

5.9.1. Working with ESB execution tasks

In the **ESB Conductor** page of *Talend Administration Center*, an execution task gathers the deployment and execution phases of Services, Routes, data service Jobs and other generic OSGi features. You can launch this task, from this single web-based application.

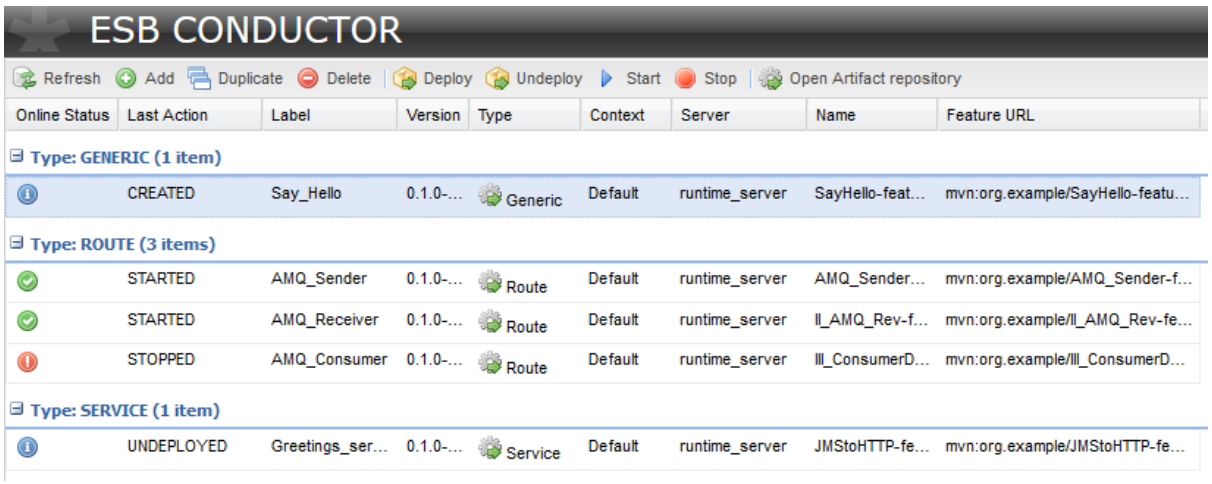
Only users that have the Operation Manager role and rights can have a read-write access to the tasks list. Other types of users can have a read-only access or no access to the list. For further information on access rights, see User roles/rights in the Administration Center . When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the right authorization by the Administrator.

Make sure your Talend Runtime server(s) are configured (agent must be running), then you can create the various execution tasks that you want to launch.

An ESB execution task represents a set of actions that you can configure in *Talend Administration Center* in order to start the Services, Routes and data service Jobs designed in *Talend Studio* or to start generic OSGi features designed in your Java IDE, directly from the Administration Center.

To access the execution task list, complete the following:

In the **Menu** tree view, click **Conductor**, then **ESB Conductor** to display the list of tasks that will deploy and start your Services, Routes, data service Jobs and other Generic OSGi features on the Talend Runtime.



When you access this list for the first time, no task shows on the list.

The default **ESB Conductor** page provides the following information:

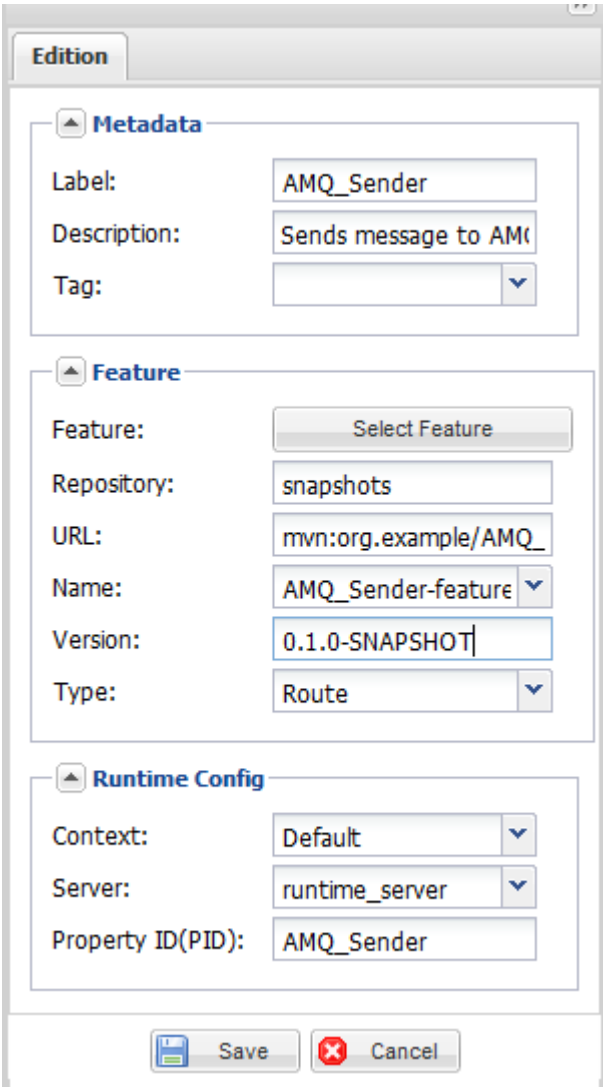
Column label	Description
Online Status	The real-time status of the task Feature. It depends on the status of all the bundles the Feature contains. • : all bundles are active. • : there are both active and inactive bundles in the Feature. • : all bundles are not active or the Runtime is down. • : the Feature is not selected in the list. • : the Feature is just created and has not been deployed, or just undeployed.
Last Action	Last action performed on the task, it can be: **CREATED**, **UPDATED**, **STARTED**, **STOPPED**, **DEPLOYED**, or **UNDEPLOYED**.
Label	Name of the task to be deployed and executed.
Name	Name of the Feature to be deployed and executed.
Version	Version of the Feature as defined in the artifacts designed in *Talend Studio* or as defined in the Features file of your generic OSGi feature build in Java.
Type	Type of the artifact to be deployed and started. It can be: **Route**, **Service**, **Generic**.
Context	Name of the context as defined for the Feature.
Server	Name of the server on which the task was last deployed.
Tag	Name of a group gathering several tasks.
Feature URL	Maven URL of the feature to be deployed.

Some extra columns are hidden by default but can be added to the table. For more information, see *Customizing the display of the task list*

5.9.1.1. Adding an execution task

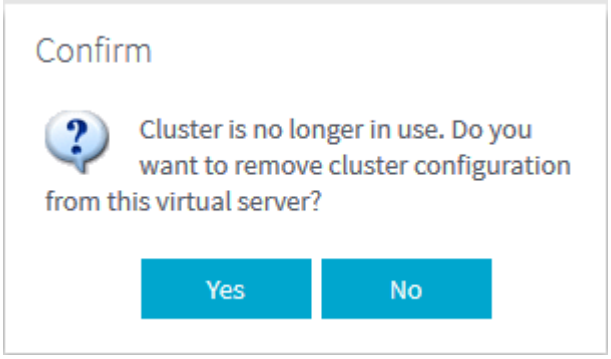
To add an execution task from *Talend Administration Center*, complete the following:

1. From the toolbar on the **ESB Conductor** page, click **Add** to clear the **Edition** configuration panel.



2. Enter/select the following information as necessary.

Field	Description
Label	Type in the name of the task to be triggered.
Description	Provide any useful information regarding the task to be carried out.
Tag	Type in or select in the list the name of the group in which you want to group your task.
Feature	Click the **Select Feature** button to select from the Artifact repository the artifact you want to deploy and start. The **[Select Feature from Artifact repository]** wizard opens. 1. In the **Repository** list, select the repository in which the artifact has been published. 2. In the tree view, select the group in which the artifact has been published, then select the feature corresponding to the artifact that has been published. 3. Click **OK**. The **Repository**, **URL**, **Name** and **Version** fields are automatically populated.
Repository	Name of the Artifact repository on which the artifact (Service, Route or Generic) has been published. This field is automatically filled in when selecting the feature but you can also type it in manually.
URL	If you selected the artifact to deploy in the **Feature** field through the **Select Feature** button, the **URL** field will automatically be filled in with the Maven URL of the Feature to deploy and start.

Field	Description
	But you can also directly type in this URL if you know it. The format of this URL is: `mvn:<groupID>/<artifactID>/<version>/xml`. For example: *mvn:org.example/route_cFile-feature/0.2/xml* The **Repository** must have been defined before entering the URL manually.
Name	Select the name of the Feature you want to deploy and start, as an artifact can be made of several features.
Version	The version of the Feature to deploy and start is automatically retrieved.
Type	Select the type of artifact to be deployed and started. It can be: **Route**, **Service** or **Generic**.
Context	If several contexts are available for the selected Feature, select the relevant context.
Server	Select the server on which the task should be deployed and started. Only Talend Runtime servers are available in this list. If the relevant server does not appear on the list, check the **Servers** page and make sure the server is correctly configured. For more information regarding the execution server configuration, see *Configuring execution servers*. If a virtual server is selected which still has a Cellar Group, a dialog will be shown prompting you to remove the cluster configuration from the virtual server as the Cellar Group option is not supported from version 6.0: 
Property ID (PID)	This field is automatically filled in with the identifier of the artifact (the name of the Route, Service or Generic OSGi feature) when this artifact is using a context or a configuration file. So if the artifact does not use any context or configuration file, this field will remain empty. The PID of the task can be manually changed if needed.

3. Click **Save** to validate the configuration or **Cancel** to cancel the creation of the task.

If you click on any of the tasks in the list before finalizing the creation or modification of the current task, a dialog box pops up prompting you to save the parameters in the configuration panel before switching to another task. Click Cancel to return to the configuration panel and save the parameters.

5.9.1.2. Editing a task

To edit a task:

1. On the **ESB Conductor** page, select the task you want to modify. Its details are displayed in the **Edition** configuration panel.
2. Make the relevant changes to the task details where necessary.
3. Click **Save** to validate the changes or **Cancel** to cancel the changes.

If you click on any of the tasks in the list before finalizing the creation or modification of the current task, a dialog box pops up prompting you to save the parameters in the configuration panel before switching to another task. Click Cancel to return to the configuration panel and save the parameters.

5.9.1.3. Duplicating a task

To avoid creating a new task from scratch, you can duplicate an existing one and work around its metadata to have a new task in the list.

To duplicate a task, complete the following:

1. On the **ESB Conductor** page, select the task you want to duplicate.
2. On the toolbar, click **Duplicate**. The panel to the right shows the metadata of the selected task.
3. Modify the metadata as needed in order to create a new task.
4. Click **Save** to validate the operation or **Cancel** to cancel it.

   The new task is listed in the Execution tasks list.

If you click on any of the tasks in the list before finalizing the creation or modification of the current task, a dialog box pops up prompting you to save the parameters in the configuration panel before switching to another task. Click Cancel to return to the configuration panel and save the parameters.

5.9.1.4. Deleting a task

To delete one or more tasks from the task list, complete the following:

1. On the **ESB Conductor** page, select the task you want to delete. Its details are displayed in the **Edition** configuration panel.
2. On the toolbar, click **Delete**. A confirmation dialog box appears.
3. Click **OK** to remove the task from the task list.

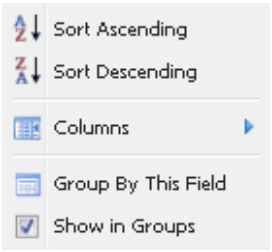
5.9.1.5. Customizing the display of the task list

You can customize the execution task list view to restrict the number of displayed tasks according to different criteria. You can also show/hide one or more columns in the task list.

1. On the **ESB Conductor** page, put the pointer on a column name and click the drop-down arrow.
2. In the drop-down list, select:

Item	To...
Sort Ascending	arrange the list in an ascending order
Sort Descending	arrange the list in an descending order
Columns	display a drop-down list where you can select/clear the check box next to the column(s) you want to show/hide
Group by this field	arrange the list by the name of the selected column
Show in groups	show the list as one group

The below figure shows the list view options in the drop-down list.



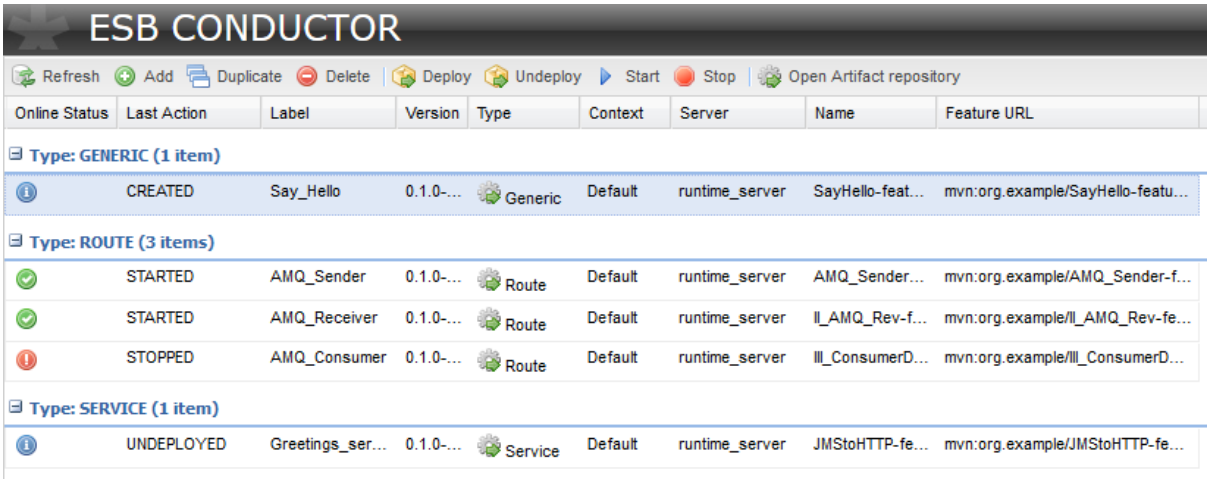
Once you have customized the list, your preferences are saved (column filters, order or width). To reset the page, you have to click the cog icon on the right of the top toolbar.

5.9.1.6. Refreshing the task list

The task list is refreshed automatically at regular intervals of time, but you can refresh it any time by clicking **Refresh** on the toolbar.

5.9.1.7. Deploying a task

Once the task created and listed in the execution task list, you will be able to deploy, undeploy, start and stop it via the toolbar at the top of the **ESB Conductor** page.



You have full control over the execution of all tasks, as you have the possibility to:

- Deploy the Feature associated to the task into Talend Runtime with the **Deploy** button.
- Stop the Feature without uninstalling and undeploying it from Talend Runtime with the **Stop** button.
- Restart the stopped Feature with the **Start** button.
- Undeploy the Feature associated to the task from Talend Runtime with the **Undeploy** button.
- Modify the value of the context parameters of the task's Feature whether it is a route, a service or a generic OSGi Feature, or modify the value of the configuration parameters for your generic OSGi Feature using a configuration file.

Deploying tasks

To deploy an execution task in the **ESB Conductor**:

1. Select the task in the execution task list.
2. Click the **Deploy** button of the toolbar.

   The status of the task changes from **CREATED** to **STARTED**.

By clicking the **Deploy** button, you will deploy and start the feature, and its bundle(s), at the same time.

Undeploying tasks

To undeploy an execution task in the **ESB Conductor**:

1. Select the task in the execution task list.
2. Click the **Undeploy** button of the toolbar.

   The status of the task changes to **UNDEPLOYED**.

This will uninstall the Feature from Talend Runtime, it will not longer be startable unless you redeploy it.

Starting tasks

To start an execution task in the **ESB Conductor**:

1. Select the task in the execution task list.
2. Click the **Start** button of the toolbar.

   The status of the task changes to **STARTED**.

Stopping tasks

To stop an execution task in the **ESB Conductor**:

1. Select the task in the execution task list.
2. Click the **Stop** button of the toolbar.

   The status of the task changes to **STOPPED**.

This option is only available if you filled in the **Bundle Name** field of the task to be started. As this will identify the main bundle composing the feature, it will allow to kill the Feature by stopping its main bundle without undeploying it. For more information, see *Adding an execution task*

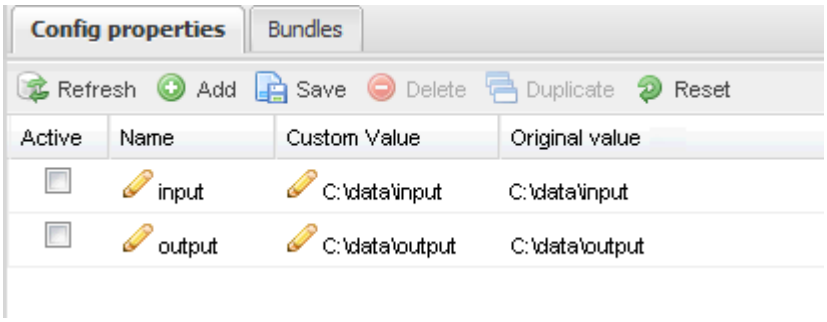
Modifying execution parameters

You can modify the value of the context parameters of the task's Feature whether it is a Route, a Service or a generic OSGi Feature, or modify the value of the configuration parameters for your generic OSGi Features using a

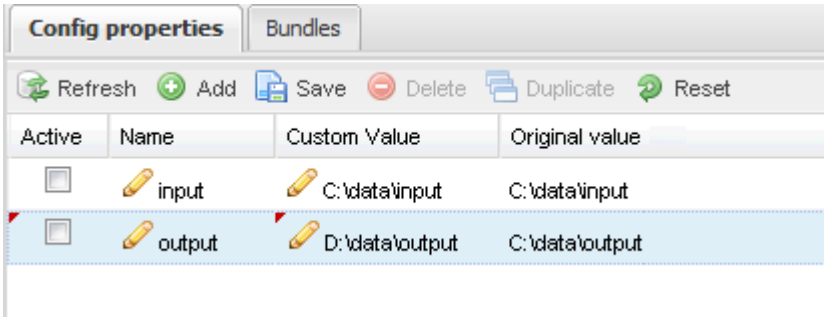
configuration file directly from *Talend Administration Center* and execute the task with those new values without the need to republish the Feature in Talend Runtime.

To set new values for context parameters:

1. In the upper half of the **ESB Conductor** page, select the task for which you want to modify the context values.
2. Go to the **Config properties** view in the lower half of the **ESB Conductor** page to display the corresponding view.



   Context parameters are automatically extracted from bundles and listed in the **Config properties** view.
3. Select the context parameter you want to change and type in the new value in its corresponding **Custom value** field.
4. When you edit the value of a context parameter, your change is activated automatically. You can also select or clear the **Active** check box on your own to enable or disable the use of the **Custom value**. The **Original value** of the parameter is read-only and will be used when the **Active** check box is cleared.
5. When you edit a field, a small red triangle appears at the top left hand corner of the field to indicate that the field has been modified but not saved. Click the **Save** button if you want to apply your changes.



6. In the list of tasks, click **Deploy** to deploy the task with the newly set values of the context parameters.

From the **Config properties** view, you can also:

- add one parameter by clicking the **Add** button and typing in the name and value you want to set in the **Name** and **Custom value** field respectively
- delete one parameter by selecting it in the list and clicking the **Delete** button
- reset ALL the values at once to the default ones by clicking the **Reset** button

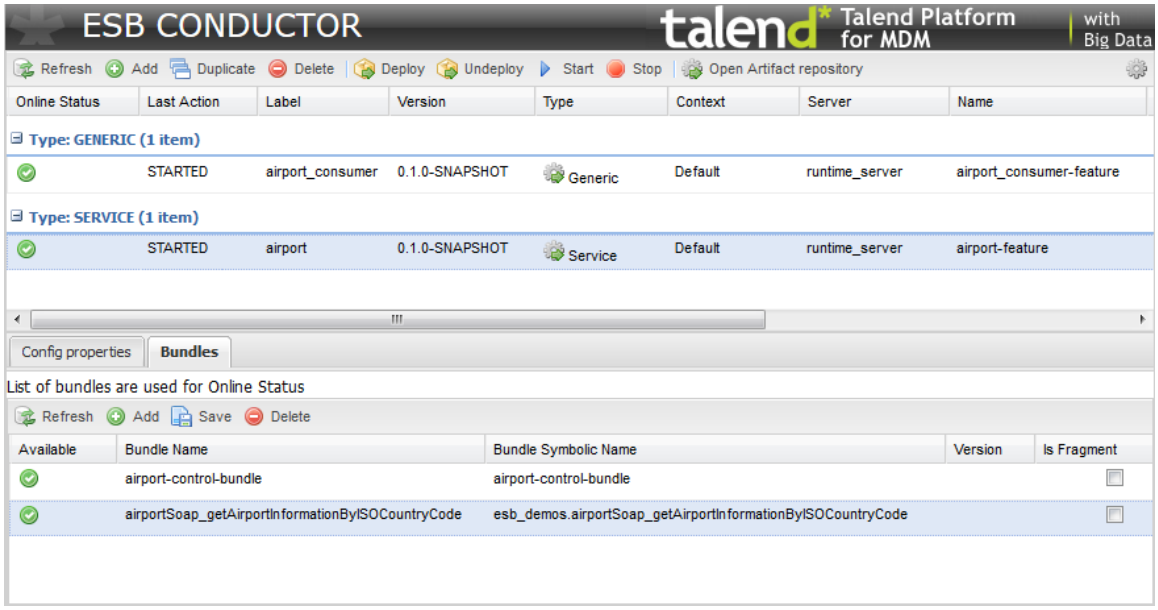
Managing Feature bundles

When you create a task Feature in the **ESB Conductor** page, the bundles contained in the Feature are displayed in the **Bundles** view on the lower half of the page. You can manage the Feature bundles in the **Bundles** view.

To do so:

1. In the upper half of the **ESB Conductor** page, select the task for which you want to manage the Feature bundles.

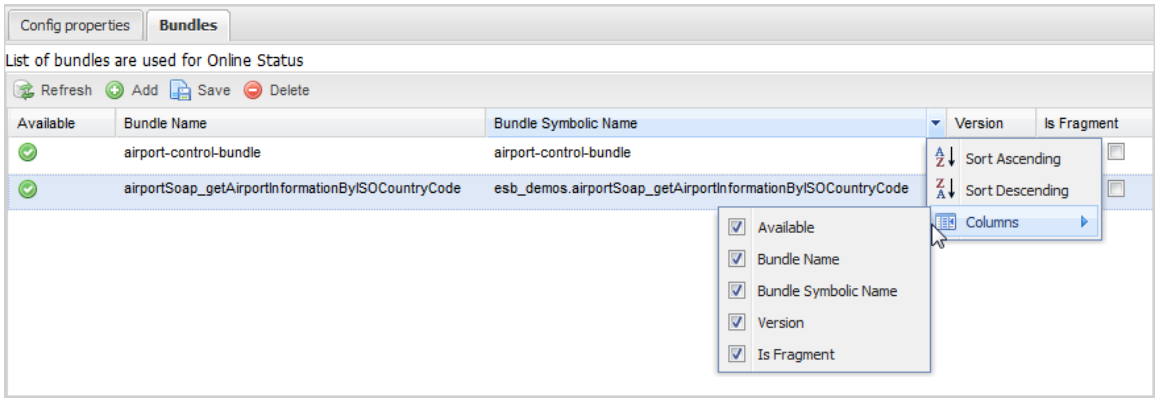
2. Click the **Bundles** view in the lower half of the **ESB Conductor** page to display it.



The default **Bundles** view provides the following information regarding the bundles of the selected Feature:

Column label	Description
Available	The status of the bundle: : The bundle is active : The bundle is not active
Bundle Name	The name that identifies the bundle in the Artifact repository. The bundle name is obtained from the Feature file when the task is created.
Bundle Symbolic Name	The symbolic name that identifies the bundle in Runtime. The symbolic name of the bundle is obtained by the Administration Center when the Feature is deployed into Runtime.
Version	The version of bundle. You can specify the version of the bundle when there are multiple versions of the bundle in the Runtime.
Is Fragment	True or false indicating if the bundle is fragment or not. All bundles are not marked as fragment by default.

You can customize the display of the bundle list to show/hide one or more columns or arrange the list in a certain order using the context menu of a column name.



3. From the **Bundles** view, you can:

- edit an existing bundle
- add a bundle by clicking the **Add** button and specify the bundle name, bundle symbolic name, version and whether it is fragment in the corresponding fields
- delete a bundle by selecting it in the list and clicking the **Delete** button

The list of bundles is used to indicate the online status of the Feature. When you add or delete a bundle in the list, the bundle is not added or deleted in Runtime.

4. Click **Save** to save your changes.

5.9.1.8. Accessing the artifact repository

From the **ESB conductor** page of *Talend Administration Center*, you can access at any time the Nexus artifact repository containing the two ESB artifact repositories on which all the artifacts to be deployed and started in Talend Runtime are published. To do so, simply click the **Open Artifact repository** button in the toolbar of the **ESB Conductor**.

Once connected to your artifact repository, you will be able to access all the available repositories and browse to all the artifacts published in them.

For more information on how to install these artifact repositories, see the *Talend Installation Guide*.

The Nexus artifact repository is based on Sonatype Nexus: for more information on how to use it, see Sonatype Nexus's documentation on http://www.sonatype.org/nexus.

5.9.2. Applying a profile from the ESB Conductor

In the **ESB Conductor** page of *Talend Administration Center*, a profile gathers resources and/or configurations that you can apply throughout all your Talend Runtimes.

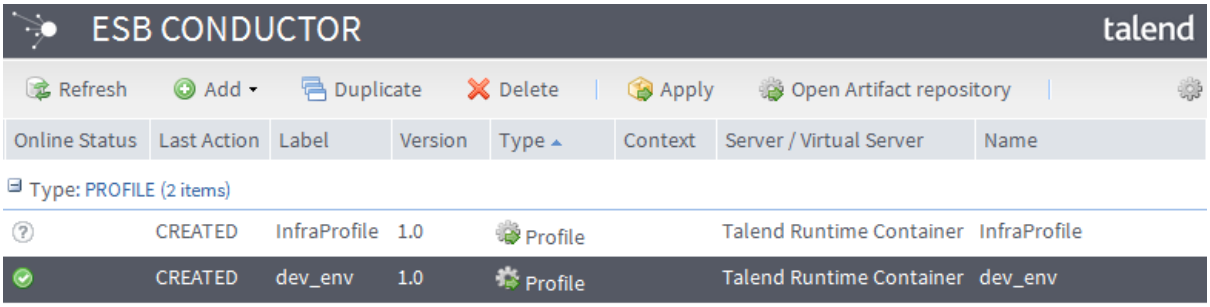
Only users that have the Operation Manager role and rights can have a read-write access to the tasks and profiles list. Other types of users can have a read-only access or no access to the list. For further information on access rights, see User roles/rights in the Administration Center . When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the right authorization by the Administrator.

Make sure your Talend Runtime server(s) are configured (agent must be running), then you can create the various execution tasks and profiles that you want to launch.

A profile represents feature descriptions and configuration resources that can be distributed throughout several Talend Runtimes, and that you can configure in *Talend Administration Center*. Those profiles are created either from the **Provisioning** page in *Talend Administration Center* or via commands in the Talend Runtime container. For more information about those commands, see the *Talend ESB Infrastructure Services Configuration Guide*.

The profiles are listed with the execution tasks, to access them, complete the following:

In the **Menu** tree view, click **Conductor**, then **ESB Conductor** to display the list of profiles that will be applied on the Talend Runtime.



When you access this list for the first time, no profile shows on the list.

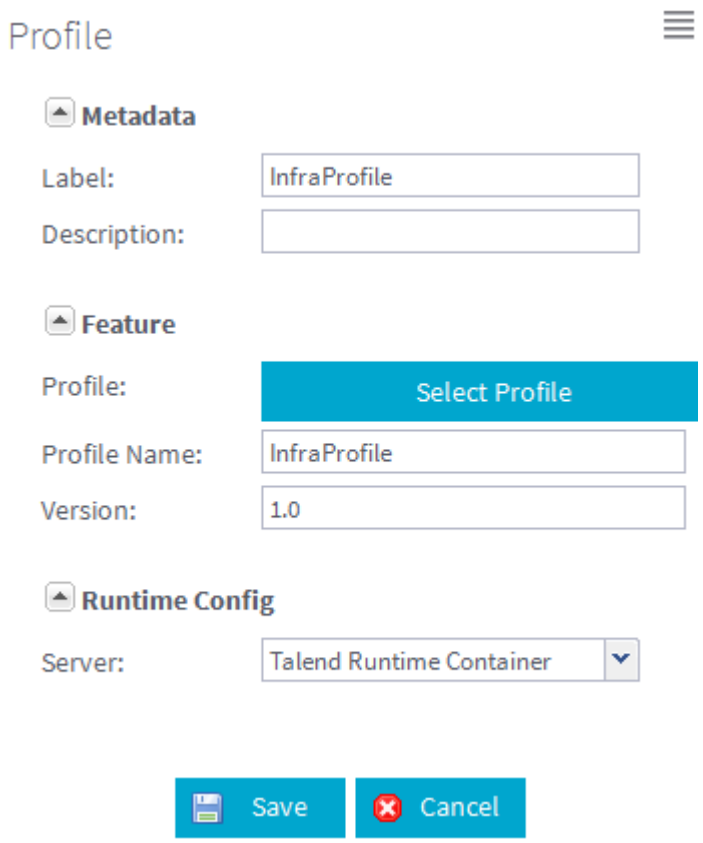
The default **ESB Conductor** page provides the following information:

Column label	Description
Online Status	The real-time status of the profile. • : the profile is active. • : the profile has been applied but needs update. • : the profile is not selected in the list. • : the profile is not applied to the container.
Last Action	Last action performed on the profile, it can be: **CREATED**, **UPDATED**, or **APPLIED**.
Label	Name of the profile to be applied, given in the **ESB Conductor** page.
Name	Name of the profile to be applied, as defined in the **Provisioning** page or in the Talend Runtime container.
Version	Version of the profile released in the container.
Type	Type of the profile to be applied.
Context	N/A
Server	Name of the server on which the profile is or will be applied.
Tag	Name of a group gathering several profiles.
Feature URL	Maven URL of the feature to be deployed, if any.

Some extra columns are hidden by default but can be added to the table. For more information, see *Customizing the display of the task list*.

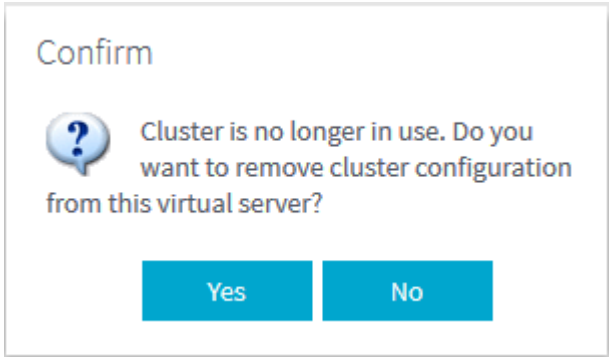
5.9.2.1. Adding a profile

1. From the toolbar on the **ESB Conductor** page, click **Add** and select **Profile** in the list to display the **Profile** configuration panel.



2. Enter/select the following information as necessary.

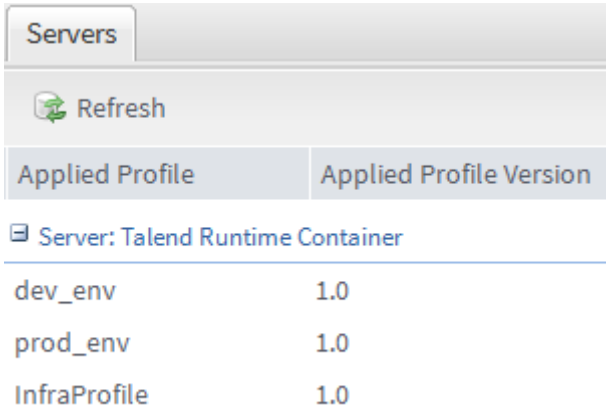
Field	Description
Label	Type in the name of the profile to be applied.
Description	Provide any useful information regarding the profile to be carried out.
Profile	Click the **Select Profile** button to select from the **Provisioning** page the profile you want to apply. The **[Select Profile]** wizard opens. 1. Browse the list of categories and profiles released onto your Talend Runtime container(s). 2. In the tree view, select the version of the profile to be applied to your Talend Runtime container(s). 3. Click **OK**. The **Profile Name** and **Version** fields are automatically populated.
Profile Name	The name of the profile as defined in the **Provisioning** page is automatically retrieved.
Version	The version of the profile to apply is automatically retrieved.
Server	Select the server on which the profile should be applied. Only Talend Runtime servers are available in this list. If the relevant server does not appear on the list, check the **Servers** page and make sure the server is correctly configured. For more information regarding the execution server configuration, see *Configuring execution servers*. If a virtual server is selected which still has a Cellar Group, a dialog will be shown prompting you to remove the cluster configuration from the virtual server as the Cellar Group option is not supported from version 6.0:

Field	Description
	

3. Click **Save** to validate the configuration or **Cancel** to cancel the creation of the task.

If you click on any of the tasks or profiles in the list before finalizing the creation or modification of the current profile, a dialog box pops up prompting you to save the parameters in the configuration panel before switching to another task or profile. Click Cancel to return to the configuration panel and save the parameters.

Once created, the new profile appears in the list. If you select it, a **Servers** tab is displayed lower half of the **ESB Conductor** page:



The **Servers** tab shows, for the profile you selected on the list, the server on which this profile has been applied, as well as the other profiles and their version applied to this server.

5.9.2.2. Editing a profile

To edit a profile:

1. On the **ESB Conductor** page, select the profile you want to modify. Its details are displayed in the **Profile** configuration panel.
2. Make the relevant changes to the profile details where necessary.
3. Click **Save** to validate the changes or **Cancel** to cancel the changes.

If you click on any of the tasks or profiles in the list before finalizing the creation or modification of the current profile, a dialog box pops up prompting you to save the parameters in the configuration panel before switching to another task or profile. Click Cancel to return to the configuration panel and save the parameters.

5.9.2.3. Duplicating a profile

To avoid creating a new profile from scratch, you can duplicate an existing one and work around its metadata to have a new task in the list.

To duplicate a profile, complete the following:

1. On the **ESB Conductor** page, select the profile you want to duplicate.
2. On the toolbar, click **Duplicate**. The panel to the right shows the metadata of the selected profile.
3. Modify the metadata as needed in order to create a new profile.
4. Click **Save** to validate the operation or **Cancel** to cancel it.

   The new profile is listed in the list.

If you click on any of the tasks or profiles in the list before finalizing the creation or modification of the current profile, a dialog box pops up prompting you to save the parameters in the configuration panel before switching to another task or profile. Click Cancel to return to the configuration panel and save the parameters.

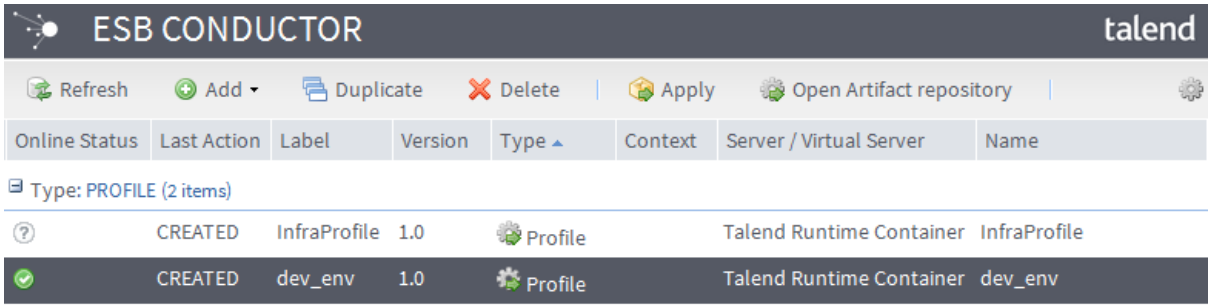
5.9.2.4. Deleting a profile

To delete one or more profiles from the list, complete the following:

1. On the **ESB Conductor** page, select the profile you want to delete. Its details are displayed in the **Profile** configuration panel.
2. On the toolbar, click **Delete**. A confirmation dialog box appears.
3. Click **OK** to remove the profile from the profile list.

5.9.2.5. Applying a profile

Once the profile created and listed, you will be able to apply it to the Talend Runtime container(s) via the toolbar at the top of the **ESB Conductor** page.



Applying a profile

To apply a profile in a Talend Runtime container from the **ESB Conductor**:

1. Select the profile in the list.

2. Click the **Apply** button of the toolbar.

   The status of the profile changes from **CREATED** to **APPLIED**.

By clicking the **Apply** button, you will apply the profile and deploy and start the feature, and its bundle(s), if any, at the same time.

Chapter 6. Working in cluster mode

This chapter aims at users of *Talend Administration Center* who want to know how to work with clustered servers. It introduces a basic scenario which should help you to understand the key concepts of this working approach.

6.1. Clustering: Concepts and Principles

Clustering is the process of grouping a set of similar physical systems (often servers).

In order to work in cluster mode, you must have previously set up high availability on your system. Below is a list of the main concepts associated with clustering:

- High availability is a design approach that ensures a level of operational continuity and minimises the risk of unplanned downtime. It is achieved through load balancing and failover.

  High availability with Talend refers only to the scheduling of task executions.

- Load balancing allows you to distribute work across the clustered Web servers. It is often combined with failover.
- Failover allows you to automatically switch to a standby server if the primary server is down or temporarily unreachable. For example, if a request to run a Job is sent to a server that is unreachable, it is automatically redirected to the backup server which will perform the desired operation.

6.2. Prerequisites and configuration

Before starting to work in cluster mode, make sure that:

- two instances of the Tomcat application server are installed and started.
- two CommandLine applications are started and registered on the **Configuration** page.

  For more information, see *Setting up the Job Conductor parameters*,

- several execution servers are grouped in a virtual server and are up and running.

  For more information on how to group physical servers in a virtual server, see *Configuring virtual servers*.

For more information on how to set up high availability, see the *Talend Installation Guide*.

Best practice:

In the **Job conductor** node of the **Configuration** page, you should use the same folders to store the generated Jobs and the same folders to store the logs. To synchronize these folders, it is recommended to use a file-synchronization tool like Unison to propagate the changes to the two folders, or you should at least use a shared directory to store these folders.

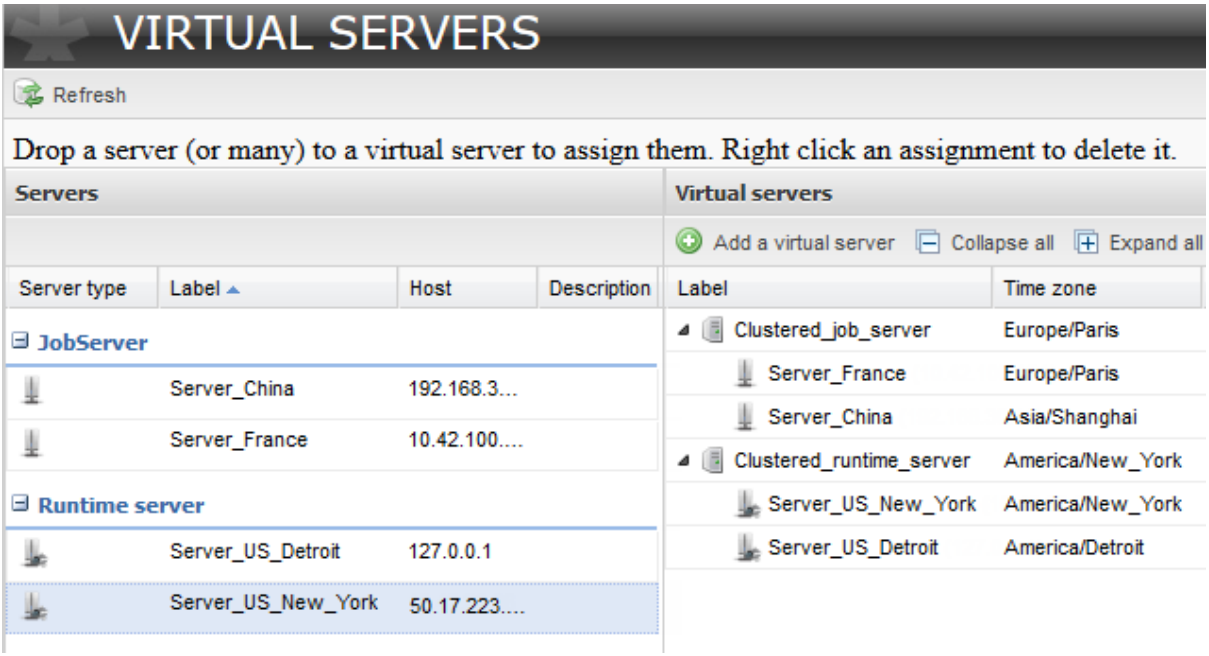
6.3. Deploying a Job or a Route in cluster mode

In order to deploy your Job in cluster mode, you need to have grouped your physical servers in a virtual server via the **Virtual Servers** page, as explained in *Configuring virtual servers*.

Note about physical servers: The order of the physical servers in the **Virtual Servers** page has an impact on load balancing. This means that if the first physical server of a specific virtual server is always available and has

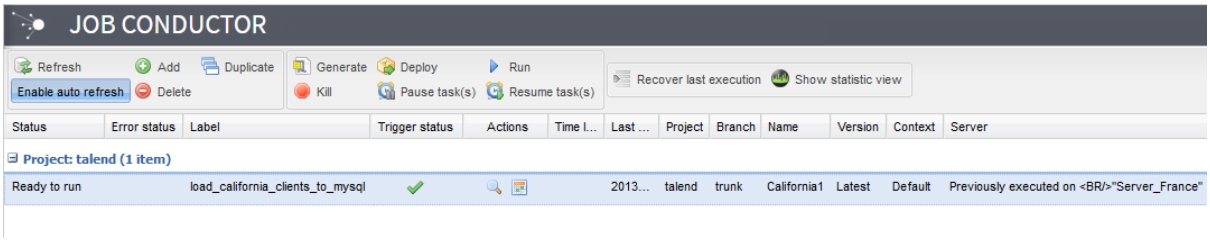
enough free disk space, this physical server might be used for the executions of all the tasks. On the contrary, if you have an homogeneous cluster of servers, half of the tasks might run on one server and the other half of tasks might run on a second server.

For more information on the server rates (based on disk space, CPU and RAM usage, etc.) which determine which physical server to be used for the executions and how to edit these weight values, see *Configuring execution servers* and the *Talend Installation Guide*.



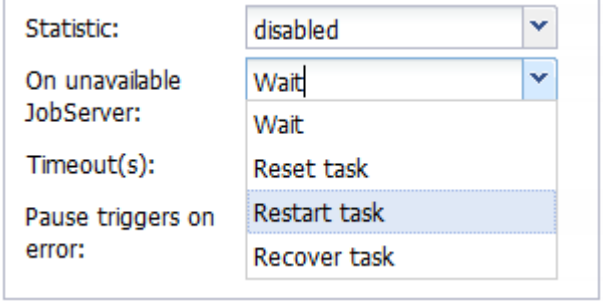
This clustered server will be used to distribute the incoming requests (Job generation, deployment and execution) between the physical servers and to ensure that these requests are processed even if one physical server is down.

How to deploy a Job on a clustered server

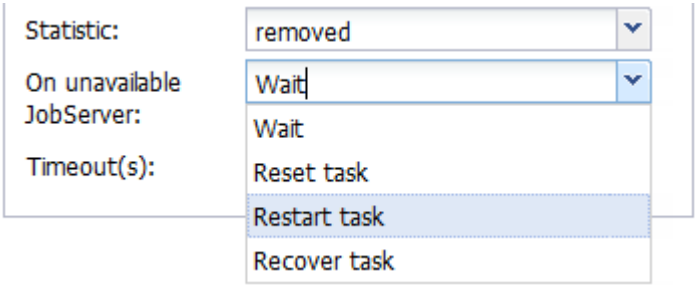


1. On the **Job Conductor** page, add an execution task as explained in *Adding a Normal execution task*.

   In the **Execution server** list, select the virtual server which groups your physical servers.

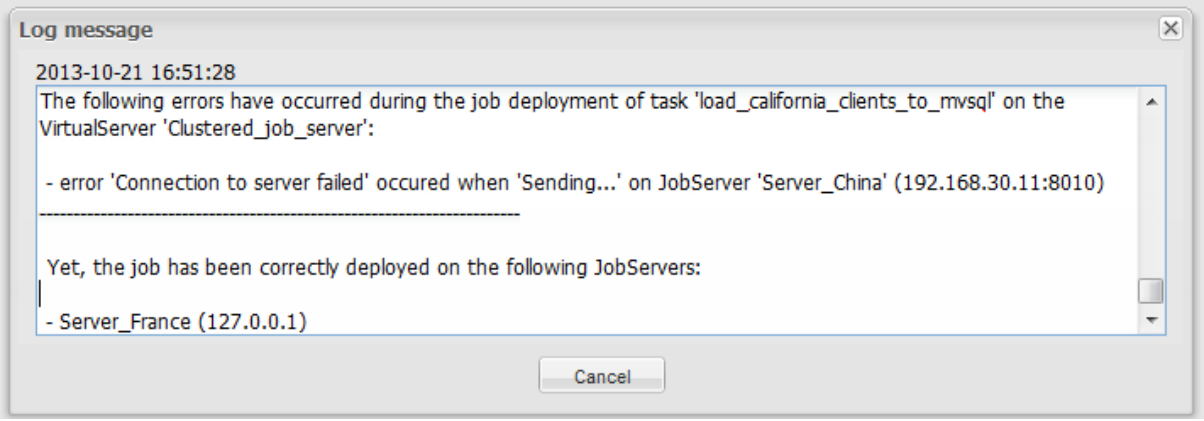


   In the **On unavailable JobServer** list of the form, select the action that should be performed in case one server is down. You can wait, reset, restart or recover the task.



2. Generate, deploy and run the task, either manually using the corresponding buttons on the top toolbar, or automatically via a trigger.

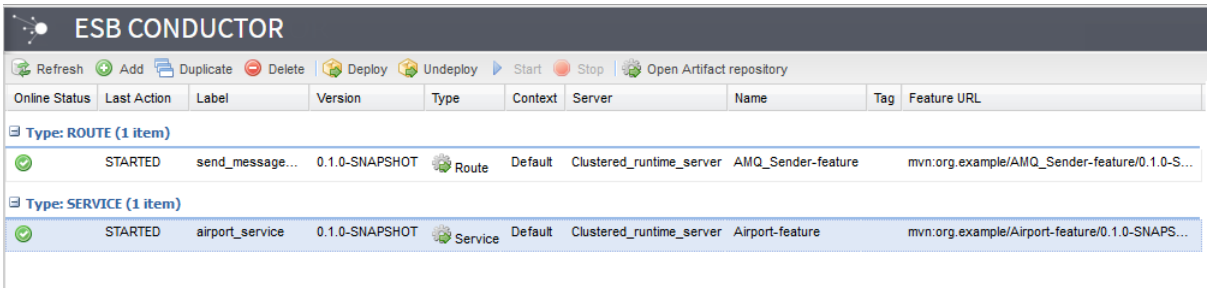
One of the servers grouped in your virtual server, *Server_China*, was down during the execution, but the load balancing feature allowed you to redirect the request automatically to another available server, *Server_France*, based on the ranking of parameters in the execution server configuration (CPU, RAM, disk usage).



If no servers are available when the request is sent but you have initiated as "checkpoints" one or several **OnSubjobOk** trigger connections, you can access the **Error recovery Management** page in *Talend Administration Center* and recover the Job execution at a selected checkpoint. For more information, see *Recovering the execution of a Job*.

How to deploy a Route or a Service on a clustered server

The Virtual servers can be used to deploy ESB artifacts to clustered containers.



- On the **ESB Conductor** page, add the Route or Service you want to deploy as explained in *Adding an execution task*, and deploy it in the virtual server which groups your physical containers.

Chapter 7. Managing Repository items

Talend Administration Center provides a **Repository Browser**. This **Repository Browser** module allows you to:

- Visualize the content of the Studio **Repository** tree view as if you were logged on to the Studio. For more information, see *Accessing the Repository Browser page* and *Getting started with the Repository Browser*.
- Manage and edit some Repository items such as the Business Models or the documentations. For more information, see *Managing and editing repository items*.
- Search Repository items. For more information, see *Searching repository items*.

Prior to using this **Repository Browser**, it is recommended to read *Talend Studio User Guide* to know more about the different items hold in the Repository.

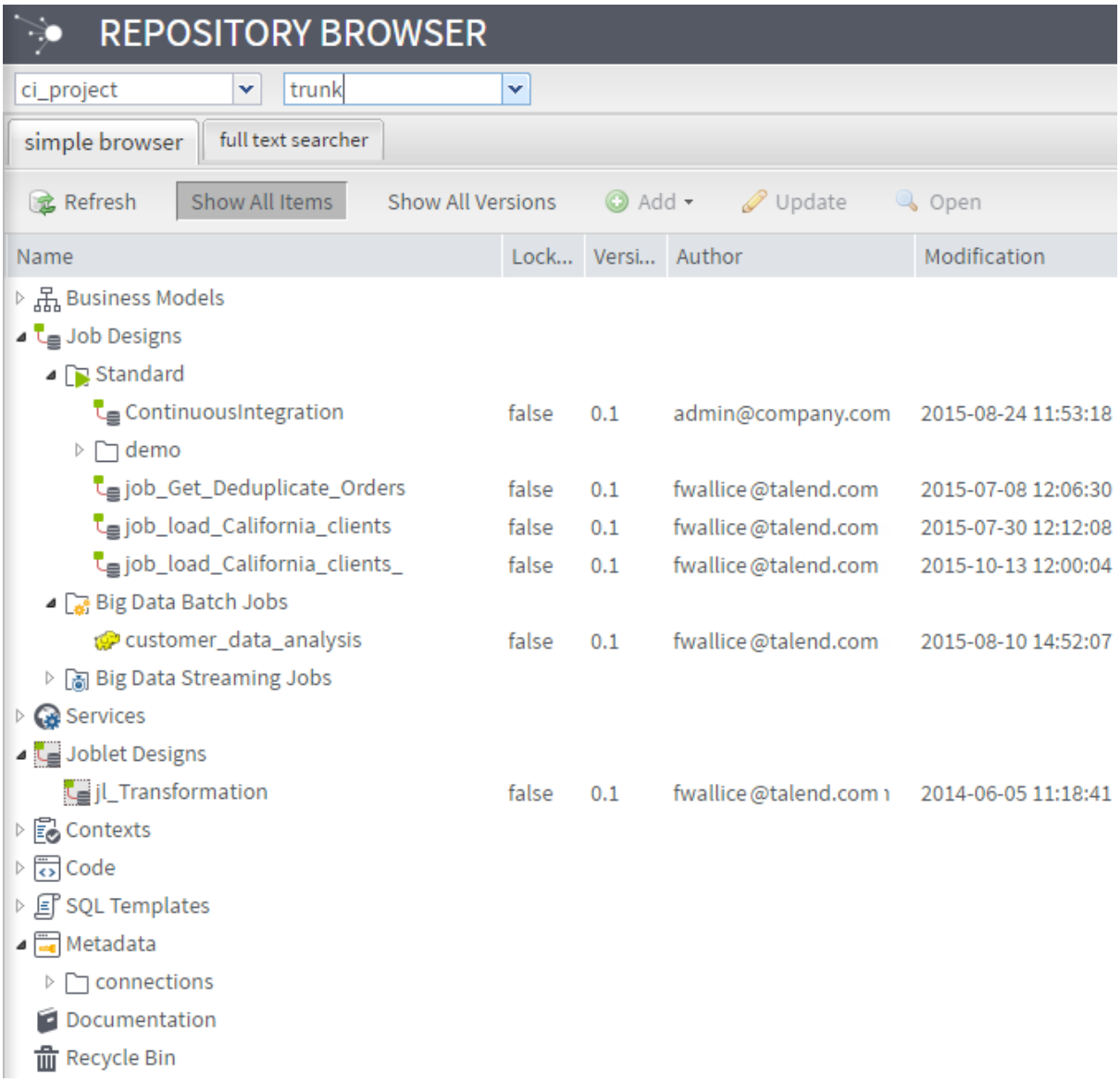
Note that the access to this module depends on your license. For more information, see *What modules and features are available depending on your license* .

7.1. Accessing the Repository Browser page

The types of actions you can perform depend on the role defined for your user. For further information on access rights, see User roles/rights in the Administration Center.

On *Talend Administration Center*'s home page and from the **Menu** tree view, click **Repository Browser** to display the corresponding page.

The figure below illustrates an example of the **Repository Browser** page.



Three areas compose the **Repository Browser** page:

- the drop-down lists: these lists allow you to select the **Talend** project as well as the SVN branch of interest;
- the toolbar: this toolbar allows you to perform several actions on the selected items;
- the Repository items: this area shows a tree view holding the Studio items that you can create and, for some of them, edit in the project selected.

7.2. Getting started with the Repository Browser

This section is designed to help you get started using the **Repository Browser**. It provides detailed information on how to display, add, open and update a Repository item.

7.2.1. How to display a Repository item

Once you have opened the **Repository Browser** page, you are able to select the **Talend** project and the SVN branch of interest using the model selection fields docked in the top of this page.

To select a **Talend** project, proceed as follows:

1. From the **Select a Project** field, select the project of interest.
2. From the **Select a Branch** field, select the SVN branch of interest.

The project as well as its Repository items are displayed. By default, only the Business Models items and the Documentation items appear, while you can show all of the Repository items available

Name	Lock...	Versi...	Modification	Status
Business Models				
Specifications	false	0.1	2014-04-23 14:46:47	
StepsBeforeDoc	false	0.1	2016-04-20 16:43:28	CHK
StrategicModel	false	0.1	2012-02-28 10:17:00	UCK
TalendBusinessModel	false	0.1	2016-04-20 16:43:44	CHK
Documentation				
data				
Doc	false	0.1	2012-02-17 11:08:41	
FlowMeterJob_0.1.html	false	0.1	2012-02-28 10:50:02	

The *Talend Administration Center* Repository and the Studio Repository are synchronized. This means that if you add, create or update a Repository item in the Studio, this item is automatically retrieved and displayed in the **Repository Browser** of *Talend Administration Center*.

7.2.2. How to add a Repository item

From the **Repository Browser** page, you can add different Repository items provided that you have been granted the appropriate project authorization by the Administrator.

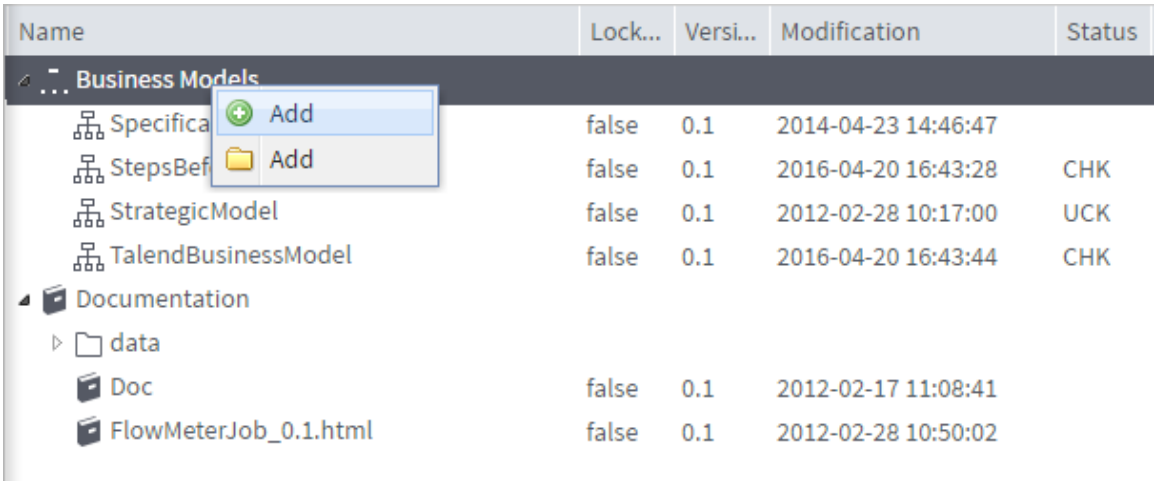
7.2.2.1. Adding a Business model

From the **Repository Browser** page, you can add a Business Model. Talend's Business Models allow data integration project stakeholders to graphically represent their needs regardless of the technical implementation requirements.

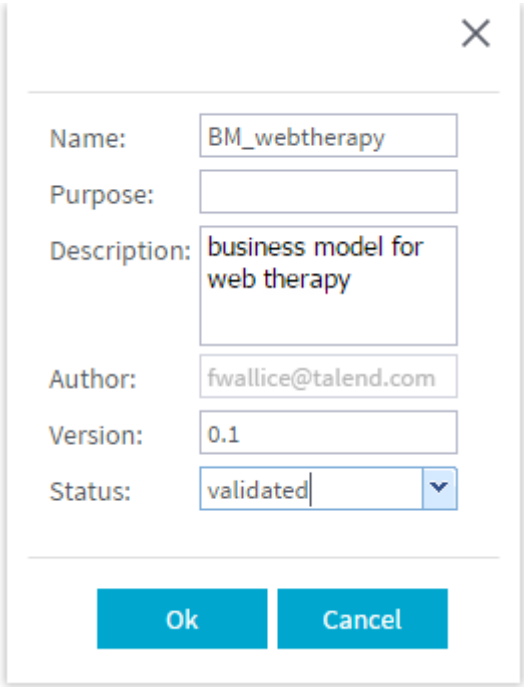
To add a Business Model, do the following:

1. Right-click **Business Models** and select the **Add** option preceded by a **[+]** sign. You can also click the **Add** button under the model selection fields.

The **Add** option preceded by a folder icon allows you to create a folder in which you can gather several related Business models according to your needs.



2. In the dialog box that appears, fill in the description information of the Business Model you are about to create.



Field	Description
Name	Type in the name of the new Business Model.
Purpose	Type in the Business Model purpose or any useful information regarding its use.
Description	Business Model description.
Author	a read-only field that shows by default the current user login.
Version	a field that shows the default version. If needed, you can manually change it.
Status	a list to select from the status of the Business Model you are creating.

3. Click **OK** to validate these information. The newly created Business Model appears under the **Business Models** area.

7.2.2.2. Adding a documentation

From the **Repository Browser** page, you can add documentations. You can assign any type of documentation in any format. It can be a technical documentation, some guidelines in text format or a simple description of your databases.

To add a documentation, the steps to reproduce are the same than the ones used to add a Business model, except that you also have to fill in the **Source file** field in the dialog box. To do so, browse to the documentation you want to add and upload it.

7.2.3. How to open and/or update a Repository item

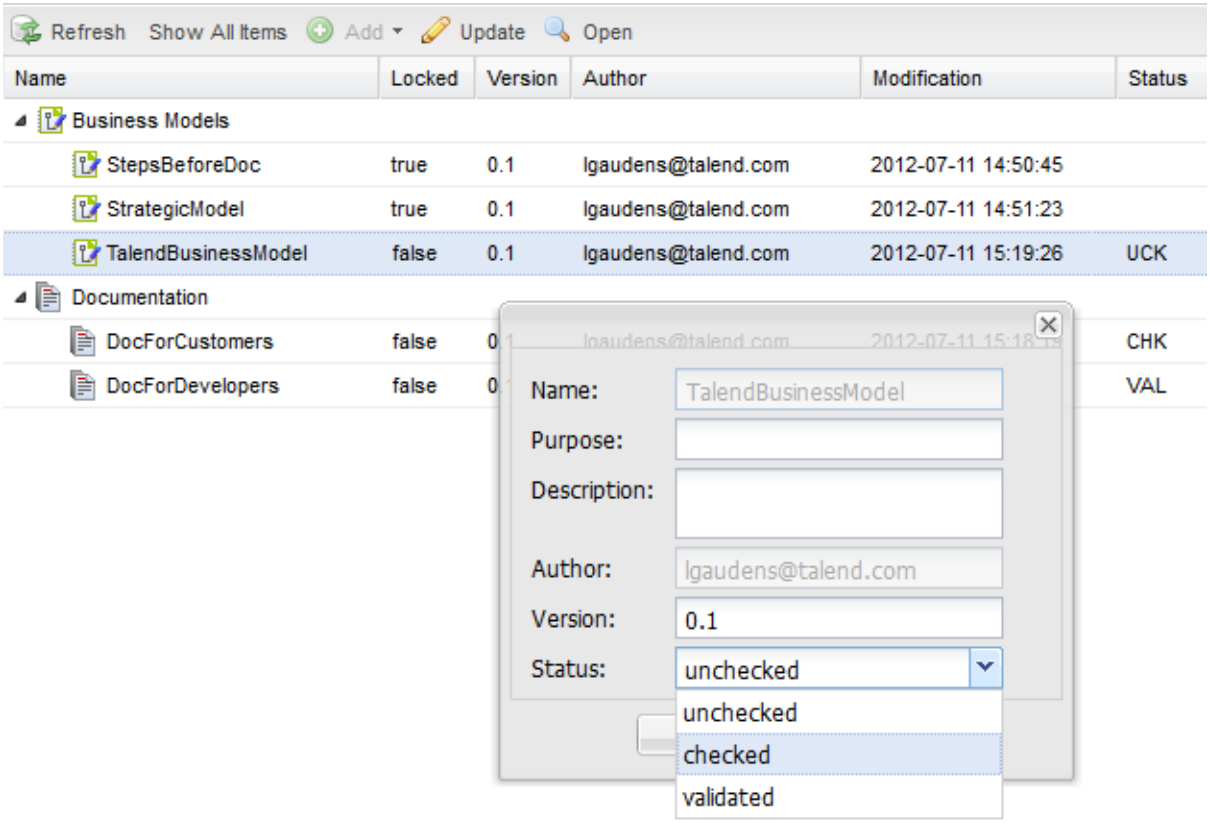
7.2.3.1. Opening or updating a Business Model or a documentation

From the **Repository Browser** page, you can also open a Business Model or a documentation.

To do so, simply right-click on the selected item and click **Open**. You can now edit your Business Model or open and edit your documentation file. For more information about how to edit a Business Model or a documentation, see *Editing Business Models*.

If your Business Model or your documentation is not up-to-date, you can update it. To do so, right-click on the selected item and click **Update**.

You can also click **Open** or **Update** from the top toolbar under the project selection fields.



As shown in the capture, a dialog box indicating the details of the Business Model or the documentation is displayed. Some fields such as **Name** and **Author** cannot be modified, but you can edit the other information such as the status and the version.

As for the documentation, you can update the documentation file by clicking **Browse** next to the **Source file** field in the dialog box that is displayed.

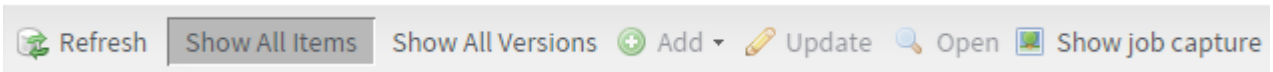
7.2.3.2. Visualizing a Job and its components

Apart from the Business model item or the Documentation item you can view and edit, you can still access the Jobs stored in the Repository of interest. For the time being, these Jobs are read-only from the Repository Browser page.

To view a Job, proceed as follows:

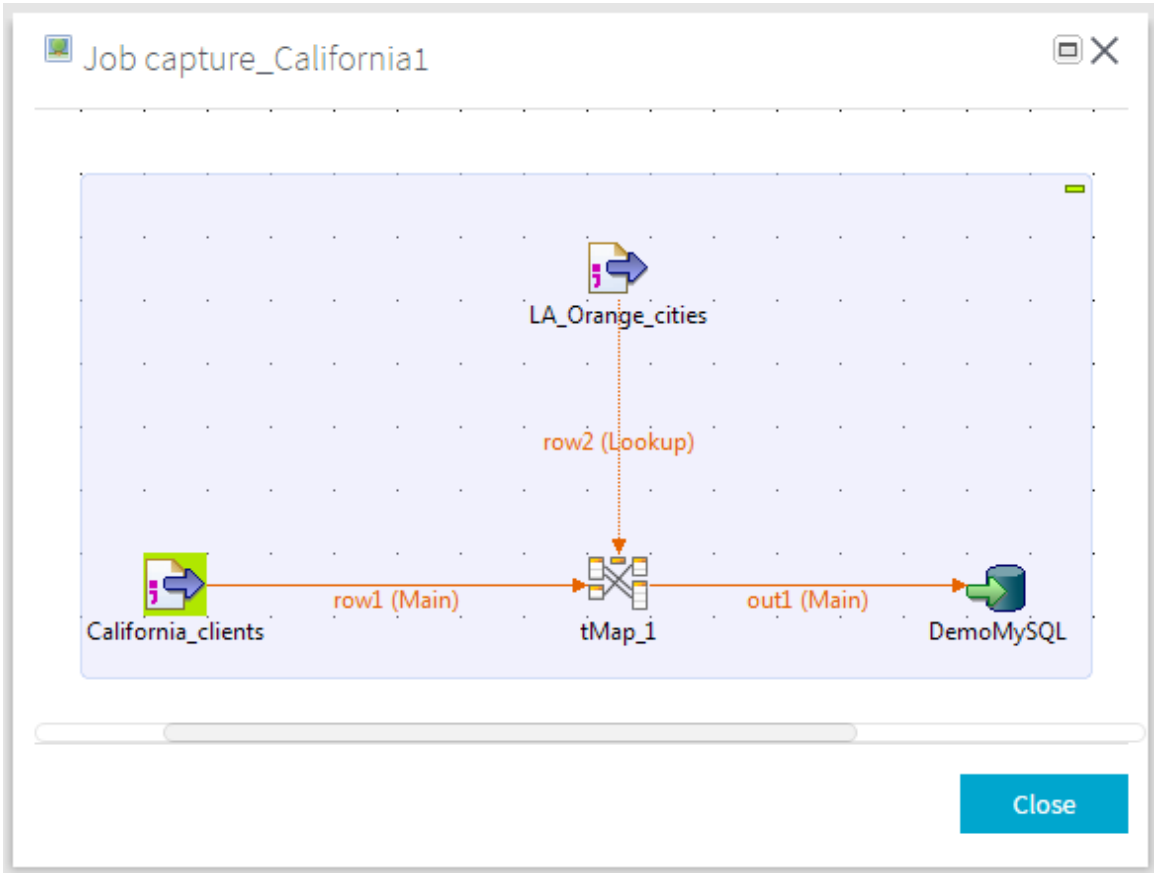
How to display the Job capture

1. On the Repository Browser page, click **Show all items**.



   All of the available Jobs are listed on this page and the **Show Job capture** button appears on the toolbar.

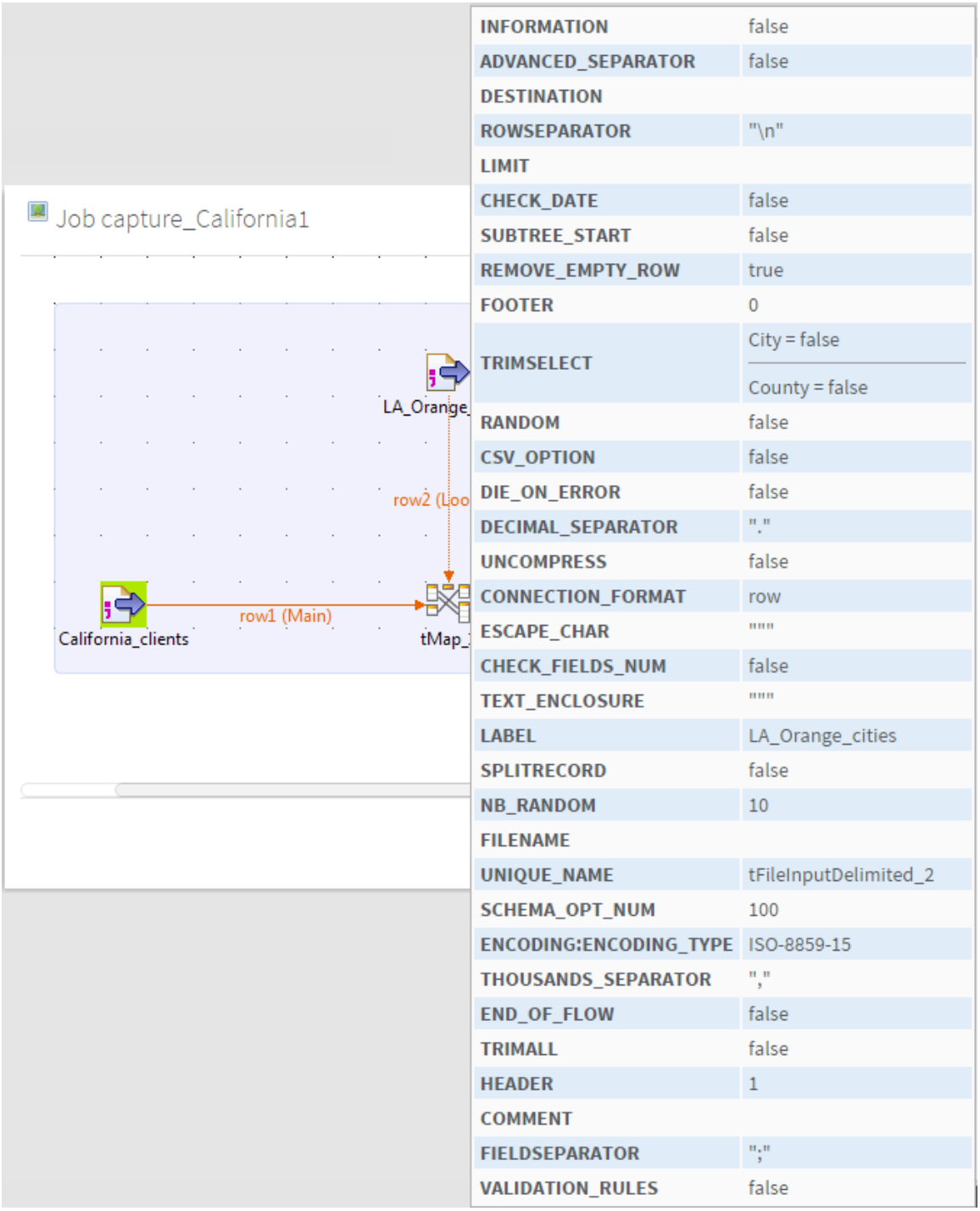
2. From the Job list, right-click the Job of interest and select **Show Job capture** from the contextual menu; or select the Job and click directly **Show Job capture** on the toolbar. The Job selected is displayed graphically in a pop-up window. The following figure presents an example of Job capture.



How to display the Job component properties

1. On the Repository Browser page, click **Show all items**, right-click your Job and select **Show Job capture** to open the Job capture.

2. Mouse over the components to display their properties. The following figure presents an example of Job component properties.



7.3. Managing and editing repository items

From the **Repository Browser** page, you can display repository items (see *Getting started with the Repository Browser*) and edit some of them, like Business Models. For more information on how to search items in the repository, see .

7.3.1. Managing Business Models

*To be able to access the **Business Model Designer** as Web service, the Firefox web browser is required.*

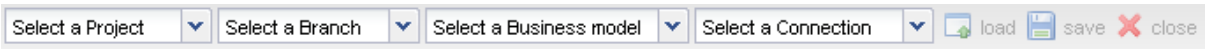
This section is designed to help you manage the business model of interest when you do not need to make major changes like adding, deleting or replacing a shape on the model.

For further information about how to manage a given Business Model, see *Managing Business Models*.

For more information about how to make the major changes to edit a given business model, see *Editing Business Models*.

7.3.1.1. How to select the business model to be used

Once you have opened the **Business Model Designer** page, you are able to select the business model of interest using the model selection fields docked in the top of this page.

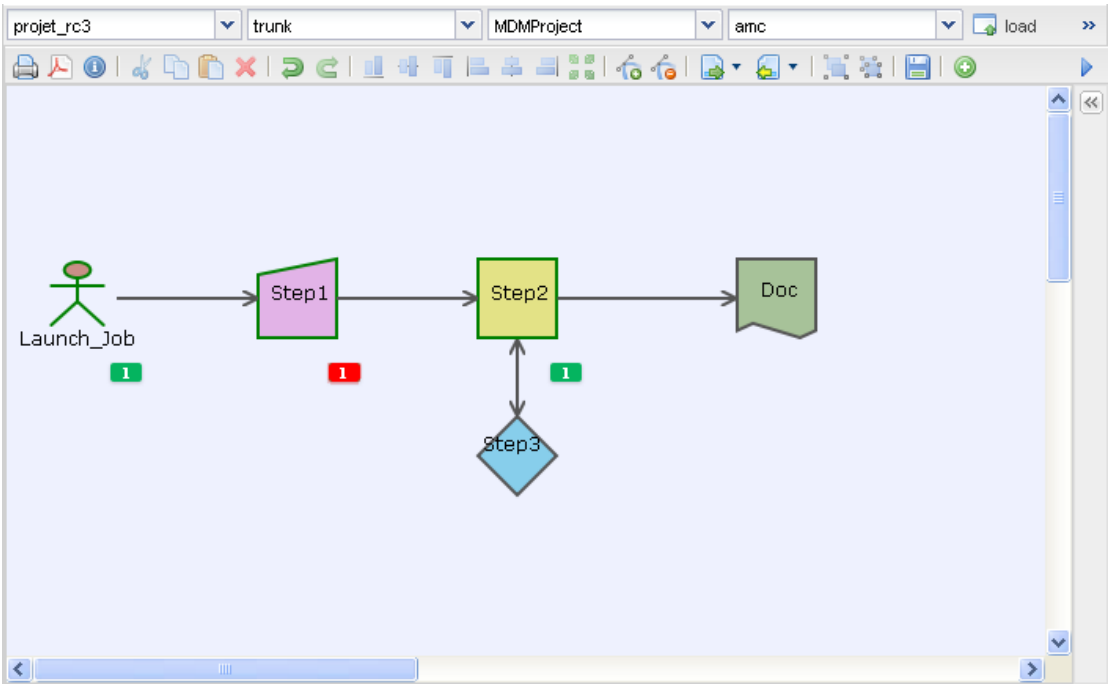


To select this business model, proceed as follows:

1. From the **Select a Project** field, select the project to which the business model of interest belongs.
2. From the **Select a Branch** field, select the branch where locates the project you have selected in the previous step.
3. From the **Select a Business model** field, select the business model you need to use.
4. From the **Select a Connection** field, select the connection to the database log tables used to host the statistical data of the Jobs assigned to this business model.

   For further information about how to create this connection, see *Managing connections to log tables*.
5. Click **Load** to open the selected business model in the workspace.

The figure below presents an example of the selected business model, *MDMProject*, displayed in the workspace area.



7.3.1.2. How to name or rename a shape

To rename a shape used by the business model selected, proceed as follows in the workspace:

1. Select the shape you need to name or rename. For example, select *Step3* in the given business model, *MDMProject*, in the previous section.
2. Double click the selected shape and a text box appears in front of this shape.
3. Type in the name you need to use to name or rename this shape.

7.3.1.3. How to print a given business model

You can print a given business model in the workspace using buttons provided on the top toolbar.

The following table presents the buttons you can use to print the given business model.

Buttons	Functions
	Click this button to print the given business model to paper.
	Click this button to print the given business model to PDF.

The top toolbar provides many buttons to assist you in editing a given business model. For further information, see *Using the top toolbar for editing*.

7.3.1.4. How to save a given business model

To save a business model you have selected and loaded in the workspace, click the **Save** button next to the **Load** button described in the earlier section.

For further information about this **Load** button, see *How to select the business model to be used*.

7.3.1.5. How to close a given business model without saving changes

To close a business model loaded in the workspace without saving any changes on this model, click the **Close** button next to the **Save** button described in the previous section.

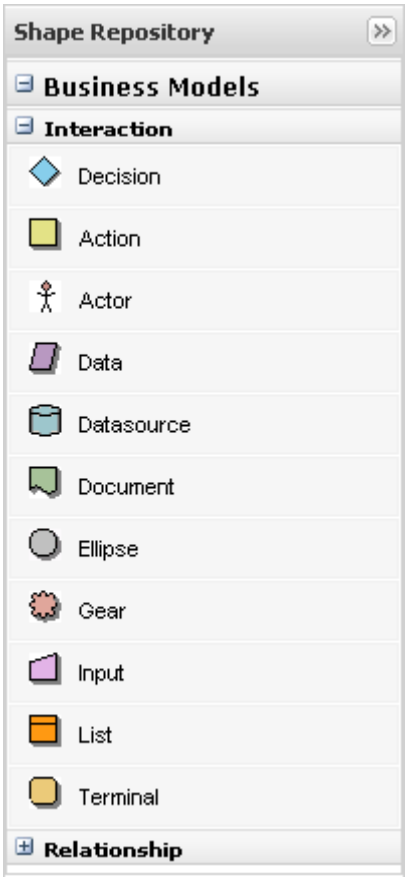
7.3.2. Editing Business Models

Before editing the selected business model, ensure that you have the related read-write right and meanwhile, that this business model is not used concurrently by the connected Studio so as to avoid that your editing cannot be saved or any inconsistent error is caused. If being used concurrently, close it in the connected Studio and reload it in this ***Business Model Designer*** *page.*

The **Business Model Designer** page is equipped with the **Shape Repository**, the contextual toolbox and the top toolbar that help you to edit the selected business model easily.

7.3.2.1. Using the Shape Repository for editing

This **Shape Repository** is composed of two classes of shapes: **Interaction** shapes and **Relationship** shapes.



If it is hidden, display the **Shape Repository** by clicking the icon in the up-right corner.

This **Shape Repository** holds the same shapes as the **Palette** does in your Studio: the **Interaction** shapes in this page correspond to the **Business** shapes in the **Palette** and the **Relationship** shapes correspond to the connecting shapes in the **Palette**.

These shapes from either the **Shape Repository** or the **Palette** are used in the same approach to edit a business model.

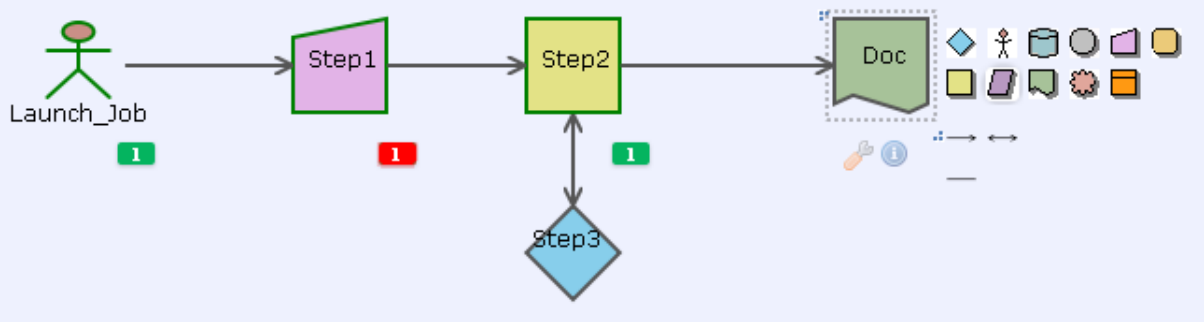
For further information about these shapes, see *Talend Studio User Guide*.

7.3.2.2. Using the contextual toolbox for editing

The contextual toolbox is provided to simplify further the editing of the selected business model.

To display a contextual toolbox, simply click any of the shapes used as a step by the selected business model in the workspace of this page.

The figure below shows an example of the contextual toolbox around the *Doc* step in the *MDMProject* business model.



From this contextual toolbox, all of the shapes held in the side-located **Shape Repository** are available immediately for editing the current model.

In addition, two more icons appear in this contextual toolbox. They are:

- : it provides shapes used to replace the selected shape this toolbox depends on. For further information about this replacement, see *How to replace a shape*.
- : it opens the monitoring window where you can view the status evolution of the item(s) assigned to the selected shape this toolbox depends on. For further information about this monitoring window, see *How to monitor the status evolution of the assigned item(s)*.

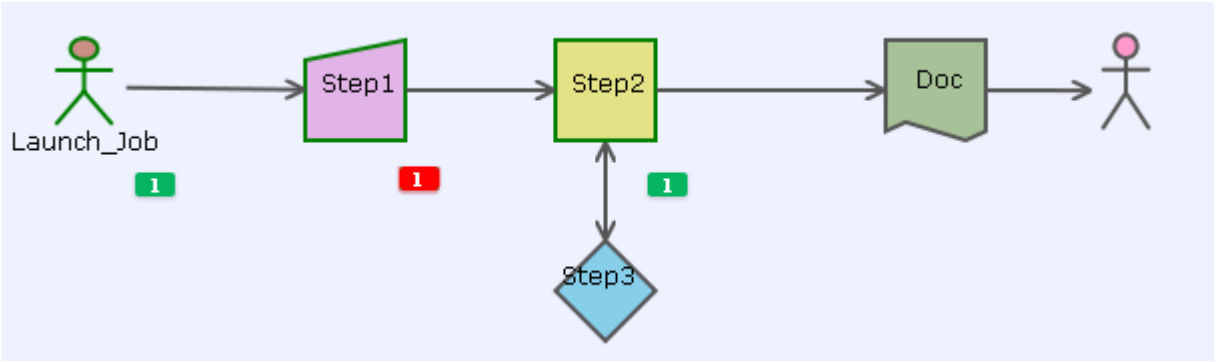
Then you are able to add shapes to this business model or to replace shapes in this business model by means of the contextual toolbox. And if need be, you can as well view the status evolution of the assigned item(s).

The following sections take as example this *MDMProject* business model presented in the figure to show the details about how to add or replace a shape used therein and how to use the monitoring window.

How to add a shape

To add, for instance, an **Actor** shape to the *Doc* step in this example business model, proceed as follows:

1. In the workspace of the **Business Modeler** page, click the *Doc* step to display the contextual toolbox.
2. On the contextual toolbox, move the pointer to the **Actor** shape.
3. Click this shape and a new step is added to the *Doc* step using the **Actor** shape.



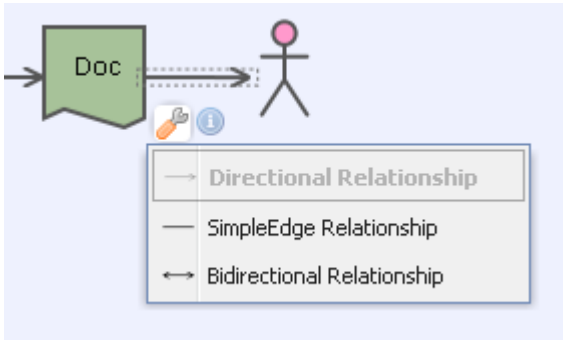
By default, a **Directional Relationship** connecting shape is used to connect the *Doc* step to the newly added step represented by the **Actor** shape. Then if need be, you can replace this connecting shape with another shape required.

How to replace a shape

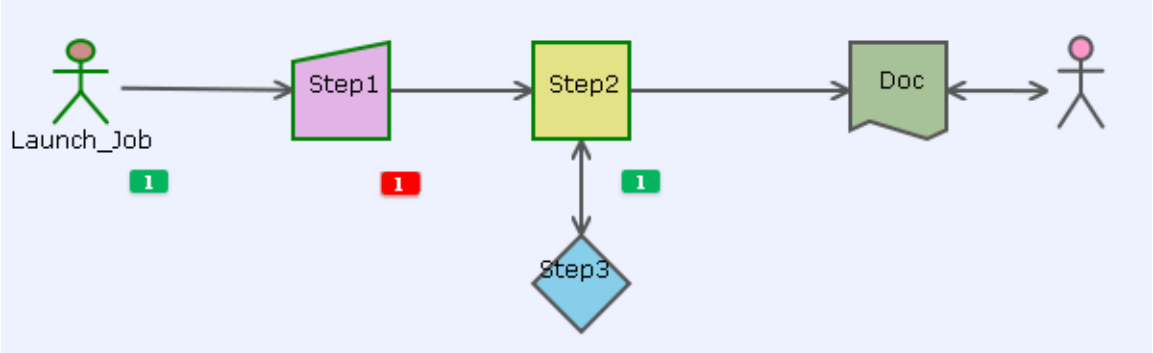
To replace, for instance, the newly added **Directional Relationship** connecting shape with another one, for example, an **Bidirectional Relationship** connecting shape  , proceed as follows:

1. In the workspace of the **Business Modeler** page, click the **Directional Relationship** connecting shape between the *Doc* step and the newly added **Actor** shape to display the contextual toolbox.

2. On the contextual toolbox, move the pointer to the  icon to display the available shapes used for this replacement.



3. Click the **Bidirectional Relationship** connecting shape and then the **Directional Relationship** shape is replaced with this connecting shape.



How to monitor the status evolution of the assigned item(s)

When there is(are) item(s) assigned to a shape used by a step or a connection of a business model, a grey icon, a green icon and a red icon may appear either alternatively or concurrently along with this shape

The following figure presents an example of these icons

- The grey icon appears to indicate the number of the assigned item(s) never executed;
- the green icon appears to indicate the number of the assigned item(s) whose last execution(s) succeed(s);
- the red icon appears to indicate the number of the assigned item(s) whose last execution(s) fail(s).

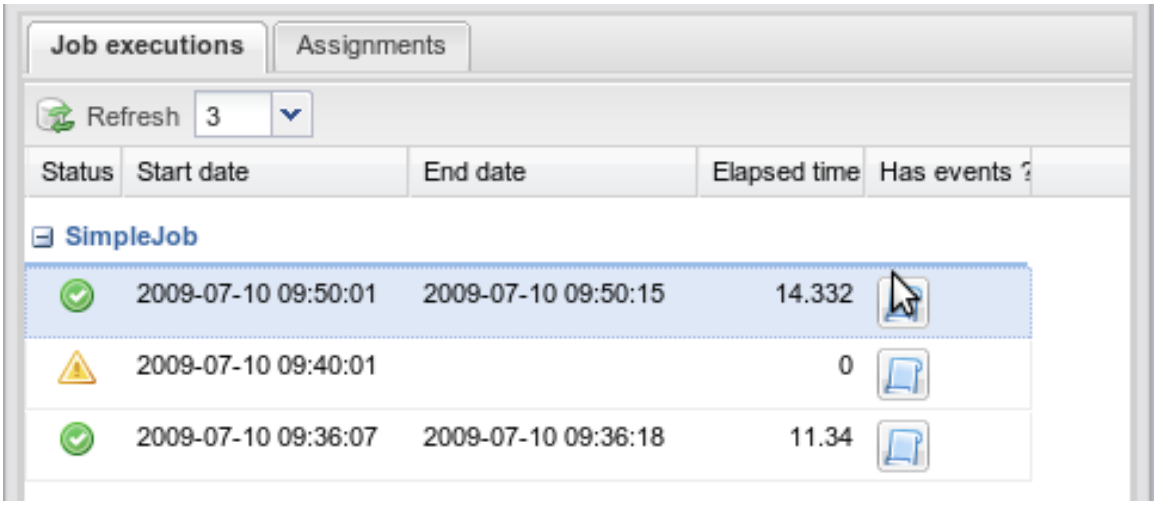
For each of them, when the corresponding items do not exist, this icon does not appear.

Then if need be, you can view the assigned item(s) easily using the monitoring window accessed from the contextual toolbox.

Suppose that you should view the item assigned to the shape named *terminal01*presented at the beginning of this current section, proceed as follows:

1. In this workspace, click the shape named *terminal01* to open its contextual toolbox.

2. On the contextual toolbox, click the icon to open the associated monitoring window.



By default, the **Job executions** view is displayed in this window. In this view, the status evolution of the assigned item, a Job called *SimpleJob* in this example, is listed.

The **Assignments** view is accessible by clicking the **Assignments** tab beside the **Job executions** tab. In this view, you can read the information about the assigned item, the *SimpleJob* Job.

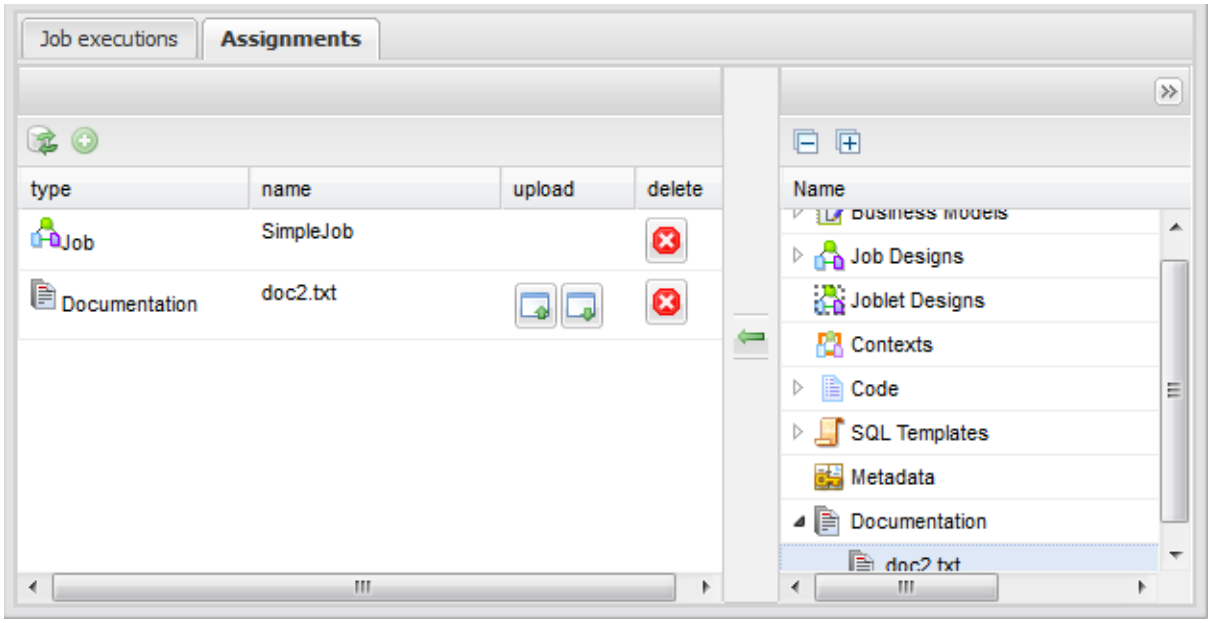
The tables below presents respectively details about the elements displayed in the two views.

The Job executions view

Elements	Description
Status	Status of an execution. This status may be: - :successful execution; - : failed execution.
Start date	Start time of an execution.
End date	End time of an execution.
Elapsed time	Duration of the execution of the assigned items. The unit used to count the duration is millisecond.
Refresh	The button used to refresh the display in this view.
List size (next to the **Refresh** button)	The drop-down list used to determine how many rows to be displayed in this view. Each time when you change the amount of rows to be displayed, you need to click the **Refresh** button alongside to validate the change in this view.
Has events?	The button used to display the error log of an execution. Before clicking this button, you need to select the failed execution of interest.

The Assignments view

From the monitoring window, click the **Assignments** tab to open the corresponding view.



The following table presents the elements you can view in this view.

Elements	Description
Type	Type of the assigned item(s). The types may be document, Job, metadata, etc. In this example, it is a Job. For further information about the types of items you can assign, see *Talend Studio User Guide*.
Name	Name of the assigned item(s). In this example, it is *SimpleJob*.
Upload	Upload (icon) or download (icône) the assigned item(s). In this example, it is a documentation file.
Delete	Delete the assigned item(s) by clicking the button.

7.3.2.3. Using the top toolbar for editing

The **Business Modeler** top toolbar provides a wealth of editing tools to help you to arrange the look of a given business model until you feel satisfied with it.

The following sections describe how to perform this arrangement using this top toolbar.

For the time being, only the buttons explained in these sections are ready to be used. So do not use the buttons not explained.

How to align the shapes in the workspace

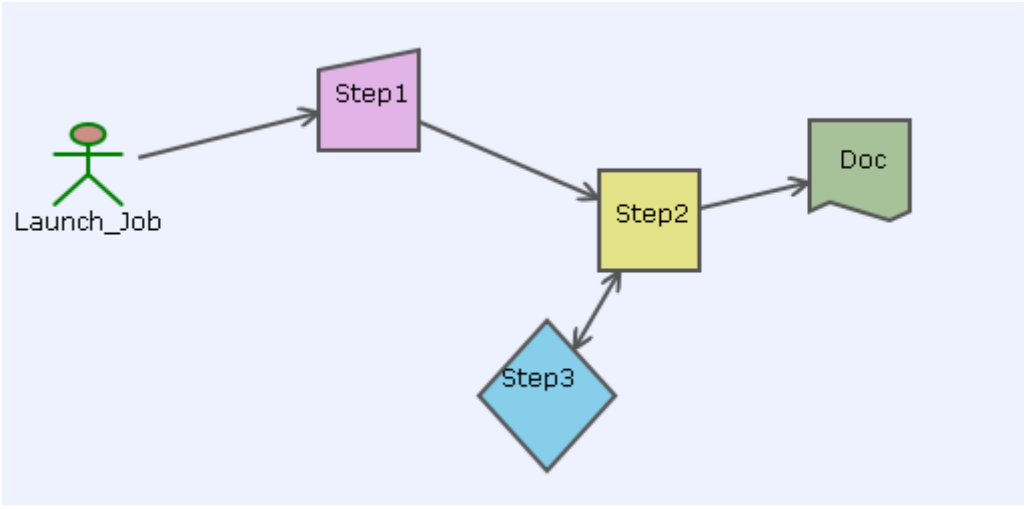
You are able to align the shapes you select so as to keep them orderly and neat in the diagram of the business model you are editing.

The following table presents the buttons available to make this alignment.

Buttons	Functions
	Click this button to align the bottoms of the selected shapes.
	Click this button to align the middles of the selected shapes (horizontally).
	Click this button to align the tops of the selected shapes
	Click this button to align the lefts of the selected shapes.
	Click this button to align the centers of the selected shapes (vertically).
	Click this button to align the rights of the selected shapes
	Click this button to enlarge the smaller shapes to the size of the greatest one among the selected shapes

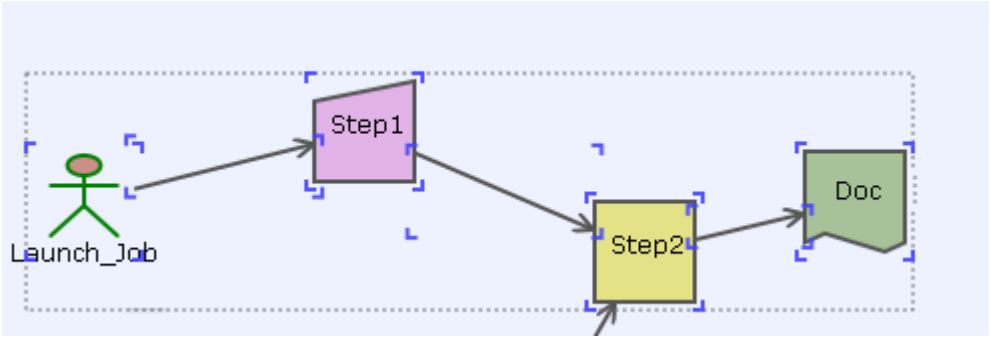
These alignment buttons are not activated until you select the shapes to be aligned.

Suppose that you should align the shapes used in the business model below, using the  and the  buttons.



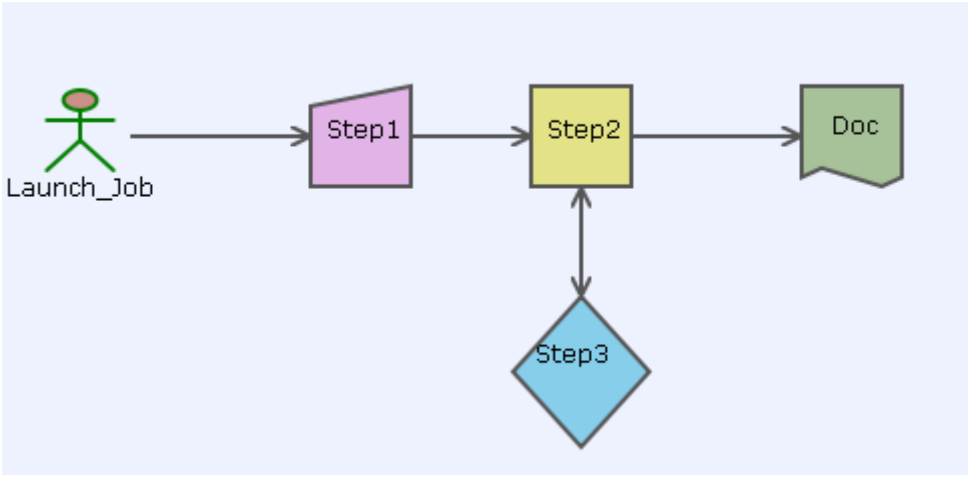
To do this, proceed as follows:

1. Select the row of shapes named *Launch_Job*, *Setp1*, *Step2*, *Doc* and the relationship shapes between them.



2. In the top toolbar, click the  button.
3. Then select the line of shapes named *Step2* and *Step3*.
4. In the top toolbar, click the  button.

Then this diagram of this business model is aligned.



How to bend the given relationship shapes

Using the top toolbar, you can add docks to or delete them from the selected relationship shapes used by a given business model. This way, you can easily bend the relationship shapes as you need.

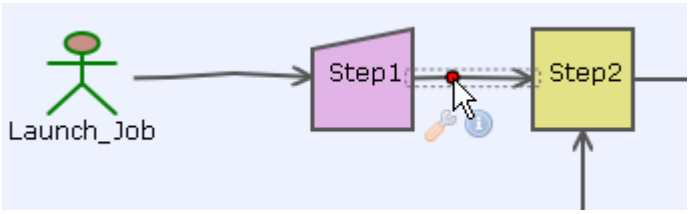
The table below presents the buttons you can use to perform these operations.

Buttons	Functions
	Click this button in order to add docks to given relationship shapes.
	Click this button in order to delete docks from given relationship shapes.

Then take, as example, the business model you have aligned in the previous section and add and delete docks.

To add docks, proceed as follows:

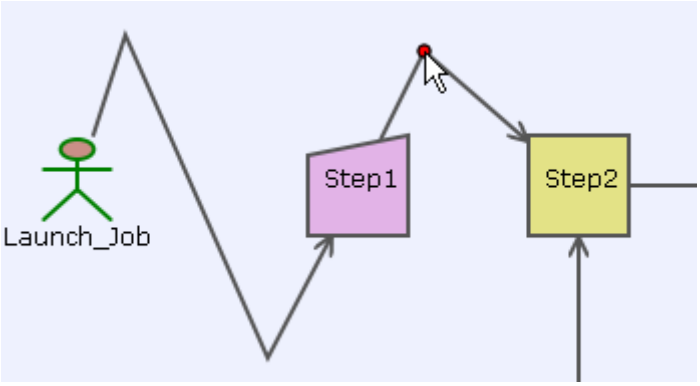
1. In the top toolbar, click the  button.
2. In the workspace, click the relationship shapes as many times on different points as the number of docks you need to add. By each click, you add one dock on the corresponding point. In this example, add three docks: two on the relationship shape between *Launch_Job* and *Step1* and one on the relationship shape between *Step1* and *Step2*.



An added dock is visible only when you put the pointer on it.

3. Click each of the added docks, hold it and move it where you need to drop it.

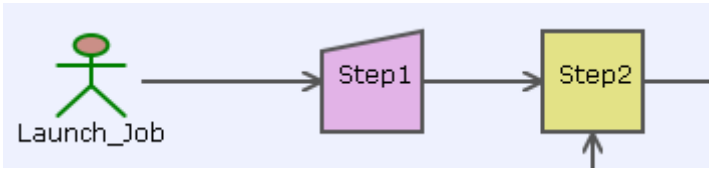
Then these given relationship shapes are bent according to your needs. The following figure presents an example of the bent relationship shapes.



To delete these docks, proceed as follows:

1. In the top toolbar, click the button.
2. In the workspace, click each of the three docks. By each click, you delete one dock.

Then these given relationship shapes are changed back.



You are able to click and move any point on a given relationship shape to add a dock on this point.

How to group or ungroup the selected shapes

Using the top toolbar, you are able to group some shapes in a given model business and thus move them as a whole. Whenever need be, you can also ungroup the grouped shapes.

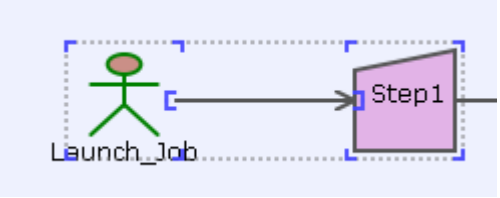
The table below presents the buttons you can use to perform these operations.

Buttons	Functions
	Click this button to group given shapes.
	Click this button to ungroup the grouped shapes.

These buttons are not activated until you select the shapes to be grouped or ungrouped.

Using these buttons, to group, for example, shapes in the given business model presented in the previous section, proceed as follows:

1. In the workspace, select the shapes to be grouped. In this example, select *Launch_Job* and *Step1*.



2. In the top toolbar, click the button. These two shapes are grouped.

Then you can move them together by moving either *Launch_Job* or *Step1*.

You are not able to move the shape group by moving the relationship shape inside as doing so will add automatically a dock to the relationship shape you are trying to move.

To ungroup the grouped shapes, proceed as follows:

1. In the workspace, select one of the shapes in a group. In this example, select either *Launch_Job* or *Step1*. At this moment, the button is activated.
2. Click this button. These shapes are ungrouped.

How to bring a shape to front or back of the other overlapped shapes

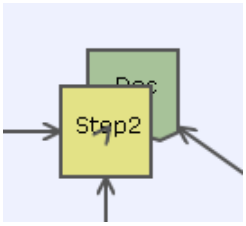
Using this top toolbar, you can bring a shape to front or back once it is overlapped with other shapes.

The table below presents the buttons you can use to perform these operations.

Buttons	Functions
	Click this button to bring a given shape from back to front of the shapes overlapping with it.
	Click this button to bring a given shape from front to back of the shapes overlapping with it.

For the time being, only the buttons explained in this table are ready to be used.

For example, in the business model given in the previous sections, suppose that *Step2* and *Doc* are overlapped.



To bring either to front or back of the other, proceed as follows:

1. In the workspace, select, for example, *Doc*.
2. In the top toolbar, click the button to bring *Doc* to front.
3. Again in the top toolbar, click the button to bring *Doc* to back.

How to revoke the changes made on a given model

Using the top toolbar, you can revoke any changes you have made previously.

The table below presents the buttons you can use to perform this operation.

Buttons	Functions
	Click this button to bring the given model back to the previous look if exists.
	Click this button to bring the given model to the next look if exists.

How to cut, copy or paste shapes in the workspace

Using the top toolbar, you can cut, copy or paste one shape or shapes used in the workspace.

The table below presents the buttons you can use to perform this operation.

Buttons	Functions
	Click this button to cut the selected shape or shapes in the workspace.
	Click this button to copy the selected shape or shapes in the workspace.
	Click this button to paste the copied shape or shapes to the workspace.

To perform the cut, copy or paste operation on the shape or shapes of interest used in the workspace, proceed as follows:

1. In the workspace, select the shape or shapes of interest from the given business model.
2. In the workspace, click the corresponding buttons.

How to delete shapes from the workspace

Using the top toolbar, you can delete any shape or shapes from the workspace.

The table below presents the button you can use to perform this operation.

Buttons	Functions
	Click this button to delete the selected shape or shapes from the workspace.

To delete any shape or shapes from the workspace, proceed as follows:

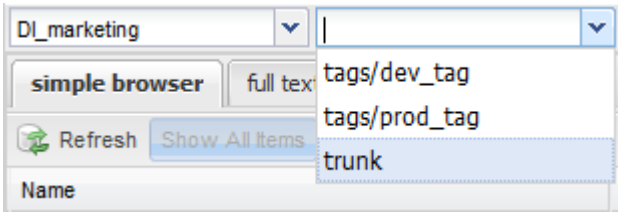
1. In the workspace, select the shape or shapes to be deleted.
2. In the top toolbar, click the  button.

The selected shape or shapes are then deleted from the workspace.

7.4. Searching repository items

From the **Repository Browser** page, you can search repository items, such as strings, context values or context parameters.

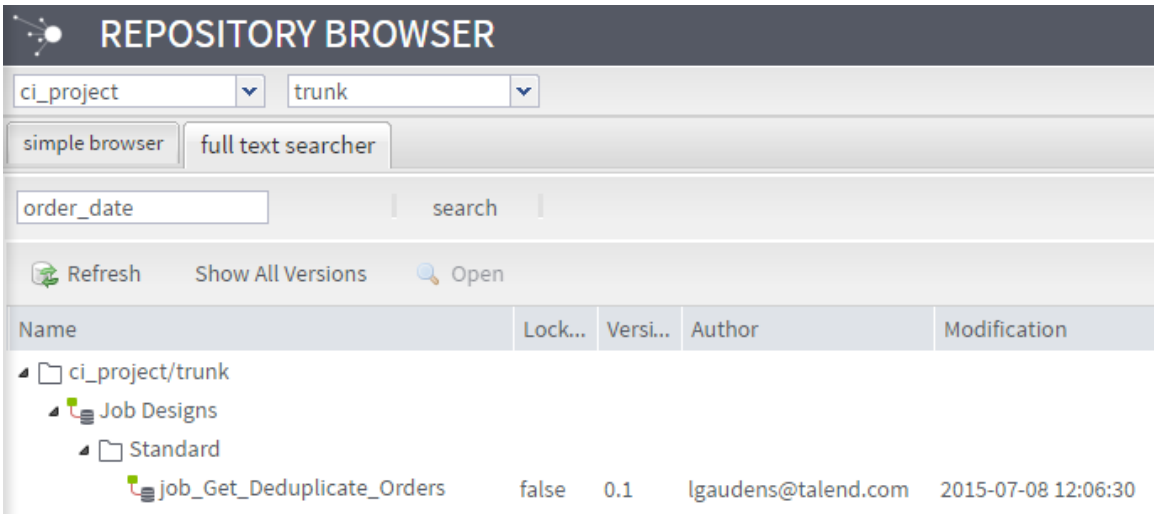
1. On the **Repository Browser** page, select the project and branch in which you want to search items.



   Some items contained in the project repository are displayed in the **simple browser** tab. To display all items, click **Show All Items** in the toolbar.

2. Switch to the **full text searcher** tab to perform your search. For example you can search strings from a schema, a context value or a context parameter.

3. Type in your query in the corresponding field and click **search**. In this example, a column (named *order_date*) from the schema of a **tHDFSOutput** component used in a Job of the repository (*job_Get_Deduplicate_Orders*) is searched.



A tree view shows the items corresponding to your query.

Chapter 8. Monitoring task execution and accessing logs

Talend Administration Center gives access to the **Monitoring** node which provides detailed monitoring capabilities that can be used to:

- consolidate log information collected,
- understand the underlying component and job interaction,
- provide task execution information in a timely manner,
- prevent faults that could be unexpectedly generated,
- support the system management decisions.

For a real-life use case of these features, see *Theory into practice: Executing and monitoring a data integration Job* .

Access to the different **Monitoring** pages depends on your license. For more information, refer to *What modules and features are available depending on your license* .

8.1. Prerequisites

To access the **Monitoring** pages, you need to have the relevant rights defined by the Administrator during your user account creation in *Talend Administration Center*.

If the **Monitoring** node does not show in the **Menu** tree view of *Talend Administration Center*, contact your Administrator.

Only the Jobs including the relevant log components can gather the information data that will then be aggregated and shown on the Monitoring console. For detailed information regarding the log components to be used in your Jobs developed in *Talend Studio*, see the *Talend Components Reference Guide*.

8.2. Accessing the Monitoring node

On *Talend Administration Center*'s home page and from the **Menu** tree view, expand **Monitoring** and click:

- **Activity Monitoring Console** to access the collected log information as well as the list of database connections to log tables.

  For more information, see *Monitoring Jobs with Talend Activity Monitoring Console*.

- **CommandLine** to access list of all the commands executed in the CommandLine.

  For more information, see *Displaying the commands executed in the CommandLine*.

- **Execution history** and **Timeline** to access the list of all triggered tasks and a graphical summary of task executions.

  For more information, see *Monitoring task executions in the Monitoring node*.

8.3. Monitoring Jobs with Talend Activity Monitoring Console

From *Talend Administration Center*, you can also monitor your Jobs and your projects with *Talend Activity Monitoring Console*.

Talend Activity Monitoring Console provides detailed monitoring capabilities that can be used to consolidate the collected log information, understand the underlying component and Job interaction, prevent faults that could be unexpectedly generated and support system management decisions. For more information, see the *Talend Activity Monitoring Console User Guide*.

Access to the **Activity Monitoring Console** page depends on your license. For more information, refer to *What modules and features are available depending on your license* .

Prerequisites:

- the *Talend Activity Monitoring Console* Web application is deployed in the Tomcat server and the application URL is set up in the **Configuration** page of *Talend Administration Center*. For more information, see the *Talend Installation Guide*.

- the database where you save the logs is added to the connections list on top of the page of the **Activity Monitoring Console** page of *Talend Administration Center*.

8.3.1. Managing connections to log tables

Only users that have the Operation Manager role and rights can create connections. Other users, depending on their roles, can have either read-only access or no access to this page. For further information on access rights, see User roles/rights in the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the right authorization by the Administrator.

To be able to view the log information relative to the monitored Jobs, you need to connect to the relevant tables that hold the data caught by the **tStatCatcher** and **tLogCatcher** components (or the relevant log options in your Job).

From the **Activity Monitoring Console** page, you can add, edit or remove a connection to the log tables.

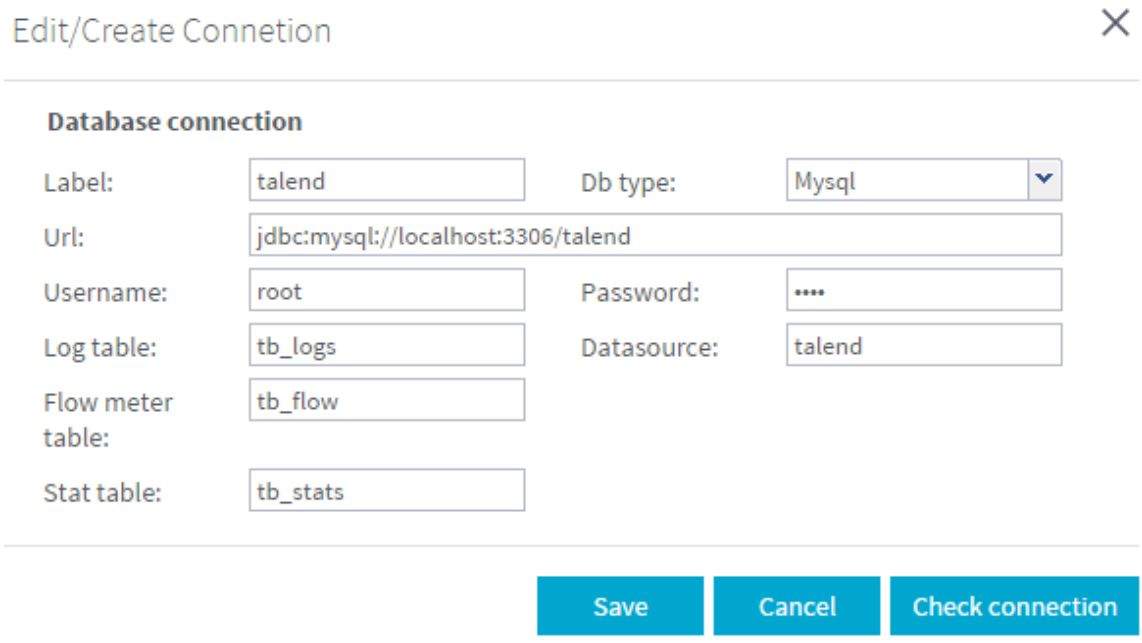
8.3.1.1. Adding a new database connection

Prerequisite:

To establish a connection to a database in the **Monitoring** node, you must first put the corresponding *.jar* file in the Tomcat *lib* folder, otherwise your database connection can not be initialized. For more information about the databases compatible with *Talend Activity Monitoring Console*, see the *Talend Installation Guide*.

To add a new database connection to a log table:

1. From the toolbar on the **Activity Monitoring Console** page, click the **[+]** button to open the **[Edit/Create Connection]** configuration window.



2. Enter the relevant connection information:

Field	Description
Label	Name of the connection entry in the connection list.
DB type	The database type to which you want to connect
URL	URL address the server hosting the log database, including the host, port and the name of the log database to connect to.
Datasource	If required, set the data source for the selected database

Field	Description
Username	Login name to the database
Password	Password to the database
Log table	Name of the table gathering the information caught through the **tLogCatcher** component in the Job.
Flow meter table	Name of the table gathering the information caught through the **tFlowMeterCatcher** component in the Job.
Stat table	Name of the table gathering the information caught through the **tStatCatcher** component in the Job.

3. Click **Check connection** to test the database connection, then click **Save** to add the database connection or click **Cancel** to close the window without saving any changes.

To access the *Talend Activity Monitoring Console* Web application, the same connection you have configured in the Studio preferences (**Preferences**>**AMC**>**Datasource Type**) should be added in this window.

8.3.1.2. Editing/Deleting a database connection

How to edit the details of a database connection

1. On the **Connections** field of the **Activity Monitoring Console** page, select the database connection you want to modify and click the  icon. Its details display in the **[Edit/Create Connection]** configuration window.
2. Make the relevant changes to the database connection details where necessary.
3. Check the connection and click **Save** to validate the changes.

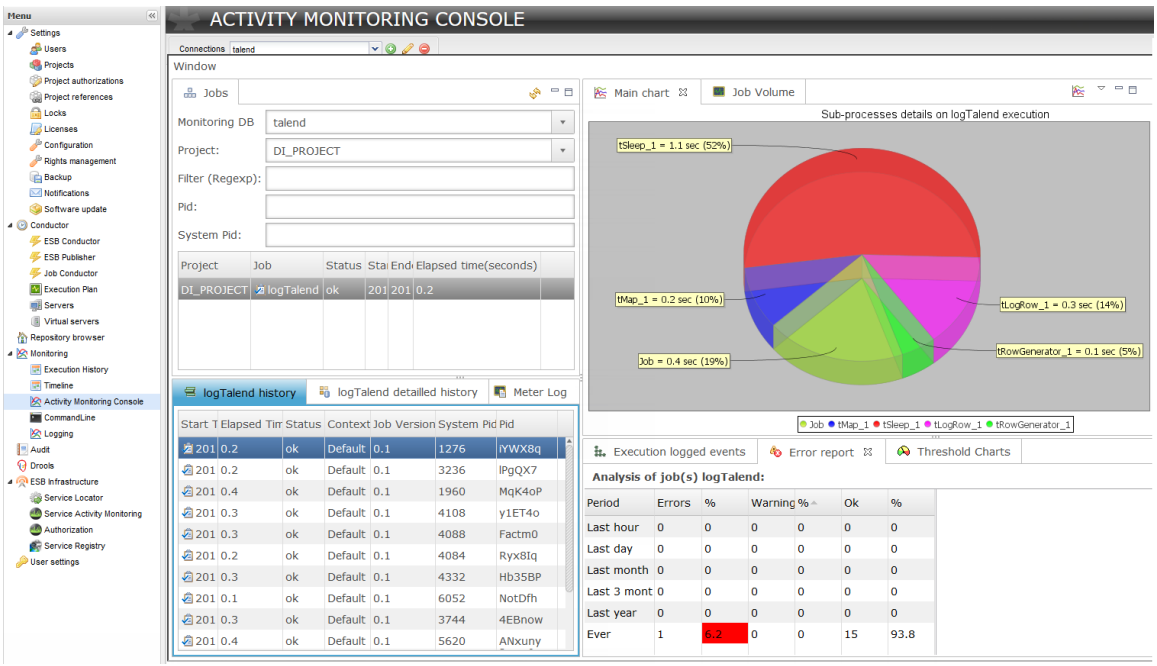
How to delete a database connection

- On the **Connections** field of the **Activity Monitoring Console** page, select the database connection you want to delete and click the  icon. The connection is removed from the connection list.

You cannot delete a connection that is being used by another user.

8.3.2. Displaying the collected activity monitoring information

1. In the **Menu** tree view, click **Activity Monitoring Console** to display the corresponding page.



2. On the **Activity Monitoring Console** page, select the active connection of the database where you save the log tables.

   Once the connection to the applicable database table is set up, you can view the various Jobs being monitored.

   This log database will be connected to your active session on the Monitoring pages and any future session on the Monitoring pages will be directly connected to this database. You can load a different database when needed.

For more information about the various monitoring views, see the section about the Graphical User Interface in the *Talend Activity Monitoring Console User Guide*.

8.4. Displaying the commands executed in the CommandLine

Only users that have the Operation manager and Designer role and rights can have a read only access to this page. Other users do not have access to this page at all. For further information on access rights, see User roles/rights in the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the appropriate authorization by the Administrator.

Talend Administration Center provides you with a direct access to an exhaustive list of all the commands executed in the CommandLine and their respective description.

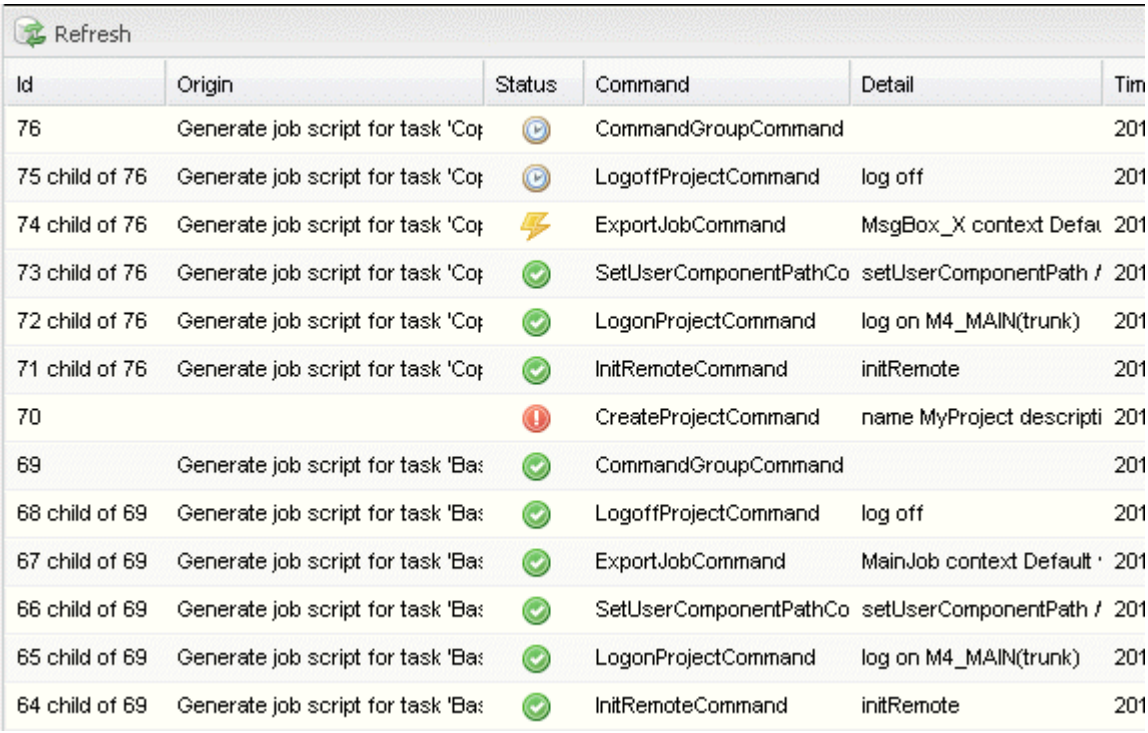
This list includes all the commands sent to the CommandLine via *Talend Administration Center* and also the commands that are directly entered in the CommandLine or any other program.

Note that the access to the **CommandLine** page depends on your license. For more information, refer to *What modules and features are available depending on your license* .

To access the executed commands on the CommandLine, complete the following:

1. In the **Menu** tree view, expand **Monitoring** and then click **CommandLine**.

   A list of all the commands executed in the CommandLine appears.



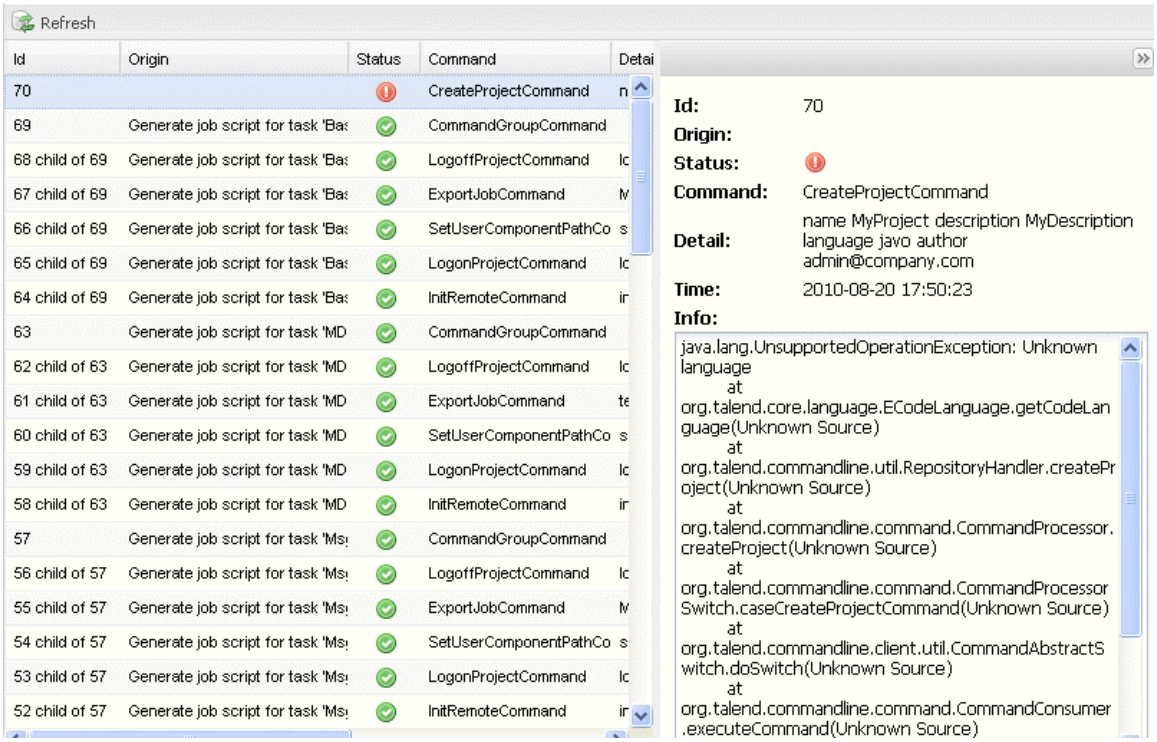
The command list provides the following information:

Column label	Description
Id	The executed command ID that also includes the parent-child relation.
Origin	The process that initiated the command. This column can be empty sometimes. For further information about the CommandLine usage, see *CommandLine features*.
Status	Command execution status: : a command that is being executed; : a command that has been successfully executed; : a command that has fallen in error and could not be executed; : a command that is still waiting to be executed.
Command	Command name
Detail	All possible details of the command execution
Time	Date and time of the command execution
Info	Details of the command execution that failed in error

2. Click any command in the command list to display all execution information in the right hand panel.

If you select a command that failed in error, all traces of the failure will display under **Info** in the right hand panel.

The figure below illustrates an example.



For further information about the CommandLine usage, see *CommandLine features*.

8.5. Displaying log events

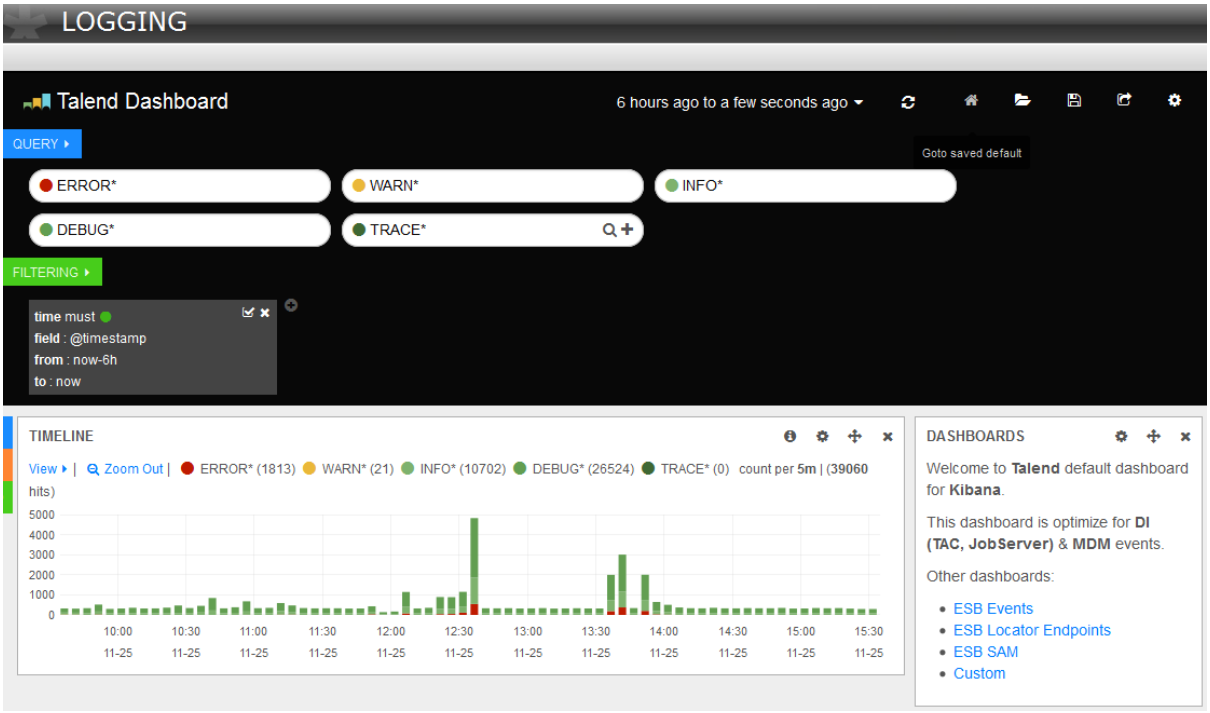
From *Talend Administration Center*, you can access an extended event logging module. This **Logging** page allows you to collect and classify time-stamped logs related to Data Integration, ESB or MDM events and make them easy to explore.

Access to the **Logging** page depends on your license. For more information, refer to *What modules and features are available depending on your license* .

Prerequisites:

- the Kibana Web application is deployed in the Tomcat server and the application URL is set up in the **Monitoring** node of the **Configuration** page of *Talend Administration Center*. For more information, see *Setting up the link to the Monitoring modules* and the *Talend Installation Guide*. As Kibana is combined with Elasticsearch, you can visit its website to get more information on this application.

- the **Technical log file path** field is correctly set up in the **Logging** node of the **Configuration** page of *Talend Administration Center*. For more information, see *Setting up the Logging parameters*.



Displaying the time-stamped log events

- In the **Menu** tree view, click **Logging** to display the corresponding page.

  The default dashboard of the logging module displays graphically the events and classify them according to the log threshold that you have defined in the **Configuration** page.

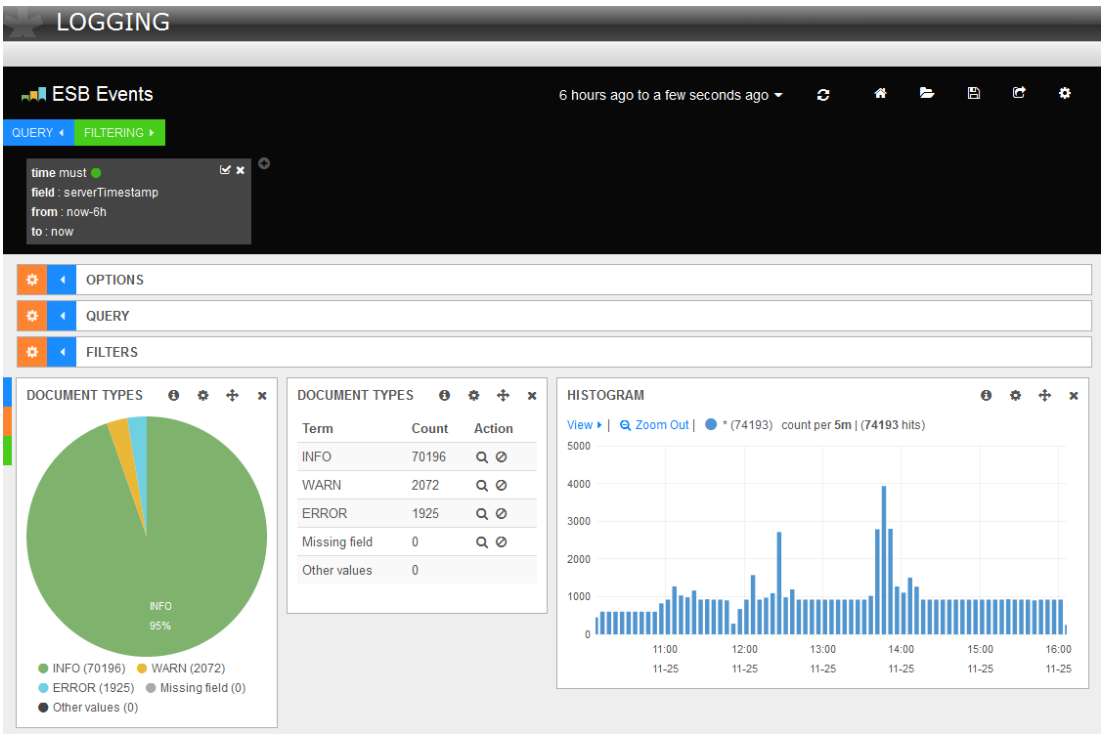
  In the **Available dashboards** part of the **Introduction** panel, you can switch to other pre-configured dashboards by clicking the corresponding link. To get back to the default dashboard, click the **Go to saved default** icon at the top right hand corner of the page. The available dashboards are:

  - the default dashboard: this dashboard gathers the logs related to Data Integration events, that is to say *Talend Administration Center* web application activity, servers, and so on, and to MDM events, that is to say the logs related to matching and logs collected from the MDM server.

    By default, these MDM logs are activated if you installed Talend Log Server via *Talend Installer*, but if you installed it manually you need to uncomment MDM-related appenders in the *<INSTALLDIR>/conf/log4j.xml* file. For more information, see the *Talend Installation Guide*.

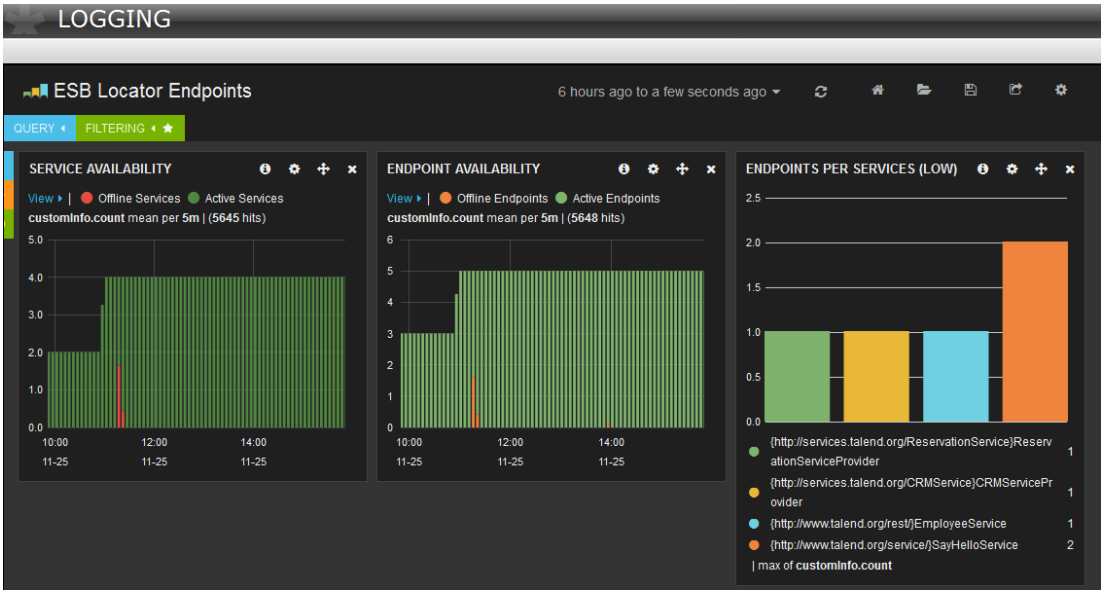
  - the ESB Dashboards. There are three dashboards available for ESB:

    - **ESB Events**



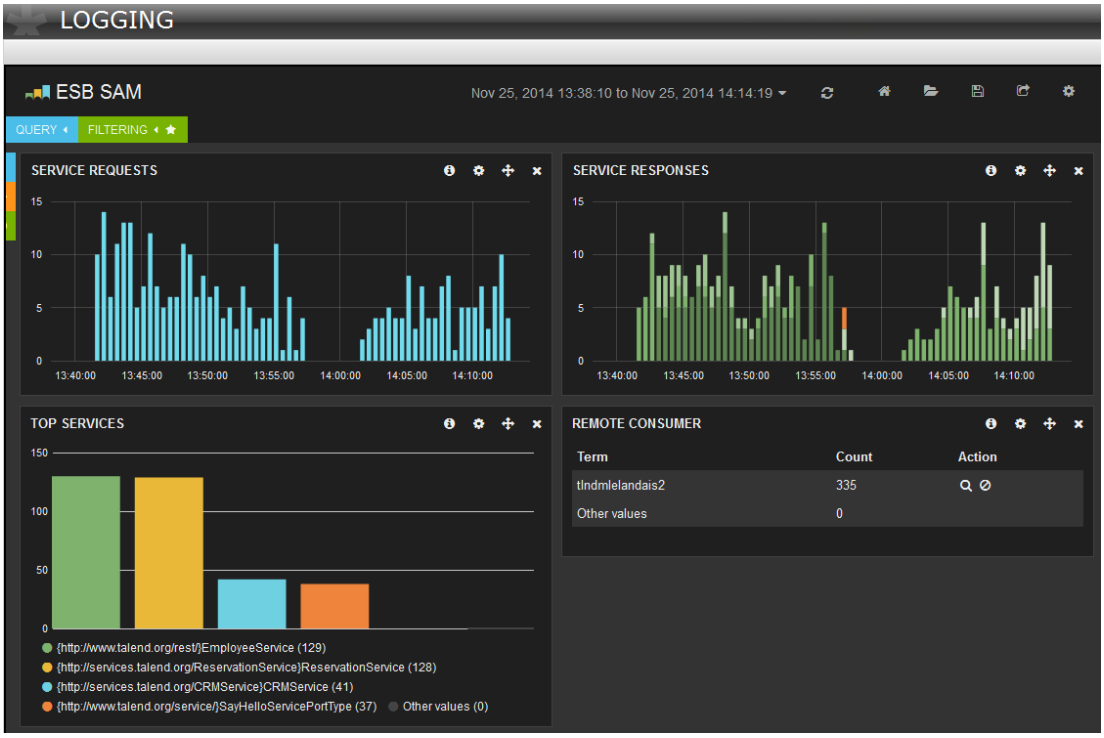
This dashboard gathers the logs related to ESB events, that is to say all logs from the Talend Runtime container (Jobs, Routes, and so on) and the OSGi events generated by the Talend Runtime (information about bundles). For more information, see the *Talend ESB Infrastructure Services Configuration Guide*.

- **ESB Locator Endpoints**



This dashboard gathers the logs related to the Locator endpoint and service availability. For more information, see the *Talend ESB Infrastructure Services Configuration Guide*.

- **ESB SAM**



This dashboard gathers the logs related to the Service Activity Monitoring. For more information, see the *Talend ESB Infrastructure Services Configuration Guide*.

Note that you can adapt the dashboard to your needs by adding/removing filters (**Filters** panel), display specific events by playing with dates (**Time Picker** panel) and zooming on specific events (**Timeline** panel), you can also change the log severity at any time in the **Logging** node of the **Configuration** page. When you change this level, the data displayed in the **Logging** page is reloaded accordingly and you can navigate easily between the logged events.

8.6. Monitoring task executions in the Monitoring node

Only users that have the Operation manager and Designer role and rights can have read only access to this page. Other users do not have access to this page at all. For further information on access rights, see User roles/rights in the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the appropriate authorization by the Administrator.

Monitoring of task executions in *Talend Administration Center* is a powerful functionality that automatically tracks task completion. It tracks in real-time the status of all triggered tasks or those waiting to be triggered. This way, monitoring can support rapid troubleshooting of issues.

The **Execution History** and **Timeline** pages provide you with timely updated execution information by tracking and monitoring task executions until their completion.

From these pages, you can also directly access the **Error Recovery Management** module and view statistic information about the execution status of a selected Job. For more information, see *Accessing the execution monitoring grid and examining collected data*.

The results are graphically presented in the **Timeline** page. For more information, see *Accessing the Timeline and examining illustrated data*.

Implementing this facility in *Talend Administration Center* allows you to keep track of your tasks and goals by going much further than the usual execution management goes.

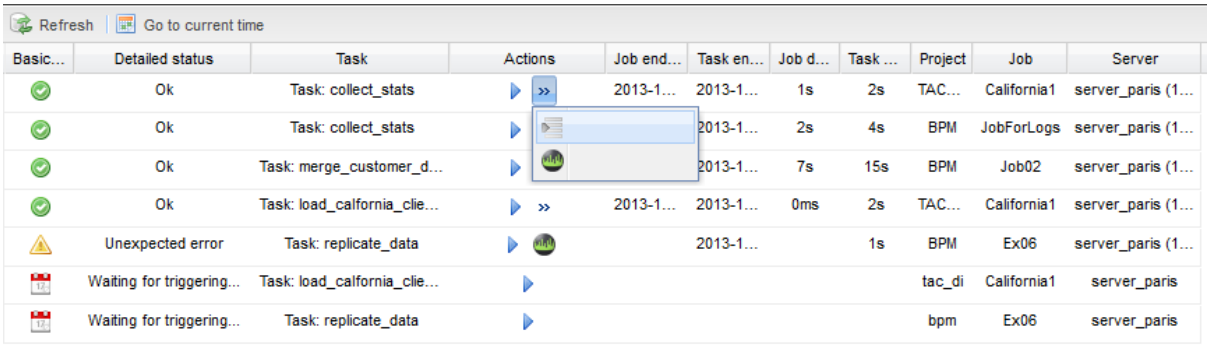
Access to the **Execution History** and **Timeline** pages depends on your license. For more information, refer to *What modules and features are available depending on your license* .

8.6.1. Accessing the execution monitoring grid and examining collected data

Only users that have the Operation manager and Designer role and rights can have read only access to this page. Other users do not have access to this page at all. For further information on access rights, see User roles/rights in the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the appropriate authorization by the Administrator.

- In the **Menu** tree view, click **Execution History** to open a tabular list that displays all scheduled tasks, whether triggered or not.

The following figure illustrates an example of an execution monitoring list.



The task execution monitoring list provides the following information:

Column	Description
Basic status	Task execution basic status: misfired task, task that failed to start at the scheduled time. task that is still running. task that is completed successfully. task that encountered errors and is not completed. task that was stopped (killed) by a user for some reason. task whose execution status is still unknown. task that is still waiting to be executed.
Detailed status	Detailed information about the status of the current task.
Exit code	Job exit code of the task. If the code equals *0*, the task has been successfully executed, if other than *0* it means that an error occurred during the execution.

Column	Description
Task	The name of the task.
Actions	Actions you can do:  executes the task in its current status.  opens the task recovery module to recover the corresponding execution. For more information, see *Accessing the Error Recovery Management page*.  shows the statistic view of the corresponding execution. For more information on the execution statistics view, see *Accessing the Error Recovery Management page*.
Expected triggering date	The date and time expected for triggering the task.
Task start date	The date and time the task started executing.
Job start date	The date and time the Job started executing.
Job end date	The date and time the Job ended executing.
Task end date	The date and time the task ended executing.
Job duration	Job run duration time.
Task duration	Task run duration time.
Project	Name of the project containing the Job to be executed.
Job	Name of the Job to be executed.
Job version	Version of the Job as defined in *Talend Studio*.
Context	Name of the context as defined for this Job in *Talend Studio*.
Virtual server	Name of the virtual server, if any.
Server	Name of the server on which the task was last executed.
Triggered by	The user name of the person who triggered the task manually or the type of the trigger used to execute the task.
Trigger	The name of the trigger used to schedule task execution.
Trigger type	The type of the trigger used to schedule task execution. This type may be: **Simple trigger**, **CronUITrigger**, or **File trigger**.
Last job generation date	The date and time of the last generation of the Job.

You can show/hide as many of the given columns as you need in the execution monitoring list. For more information, see *Customizing the display of the execution monitoring list*.

The task execution monitoring grid provides, for the time being, a static display of task execution history. To refresh the display, click the icon.

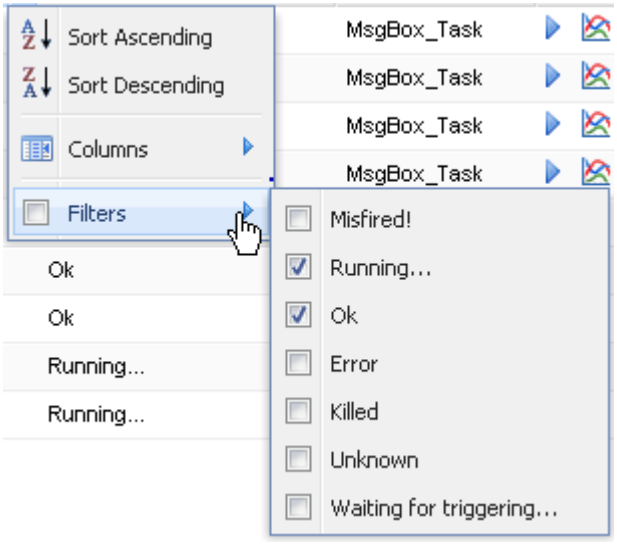
8.6.2. Limiting the number of tasks in the execution monitoring list

On the execution history list of the **Execution History** page, you can limit the number of the tasks that are displayed by setting criteria for each column. For example, you can set criteria to display the tasks of a specific execution status, Job start date, task duration.

You can set filters in two different ways: selecting check boxes in a drop down list, or typing in a text in the filter box.

If you need to list only the tasks that are still being executed and those executed correctly, do the following:

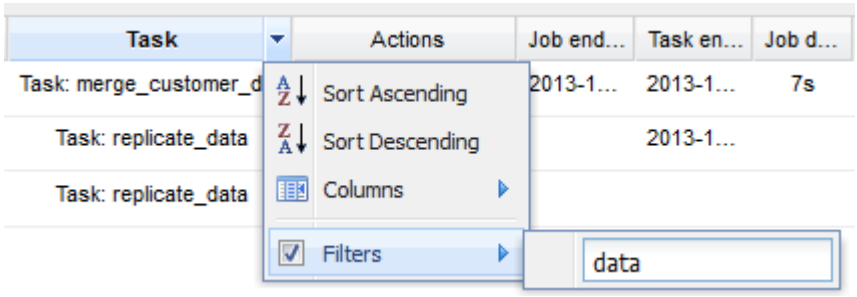
1. On the **Execution History** page, put the pointer on a **Basic status** column and click the drop-down arrow to display the filter-option list.
2. Put the pointer on **Filters** and from the drop-down list select the **Running...** and the **OK** check boxes.



A progress indicator shows the loading process of the data of interest and then the task execution list is displayed depending on the filters you have set.

To list only the execution instances of one specific task using the filter box, do the following:

1. On the **Execution History** page, put the pointer on a **Task** column and click the drop-down arrow to display the filter-option list.
2. Put the pointer on **Filters** and in the filter box, type in the name of the task whose execution instances you need to display.



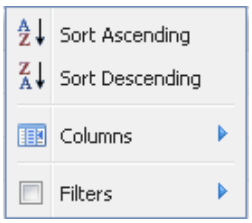
A progress indicator shows the loading process of the data of interest and in the end, the history list displays the data collected depending on the filters you have set.

You must clear every check box selected in the list and/or every entered filter text in the filter box if you do not want to apply the filter to the execution list view.

8.6.3. Customizing the display of the execution monitoring list

You can customize the view of the task execution monitoring list to restrict the number of the tasks to be displayed according to different criteria. You can also show/hide one or more columns in the execution monitoring list.

1. On the **Execution History** page, click the drop-down arrow next to any of the column names to show the list options.



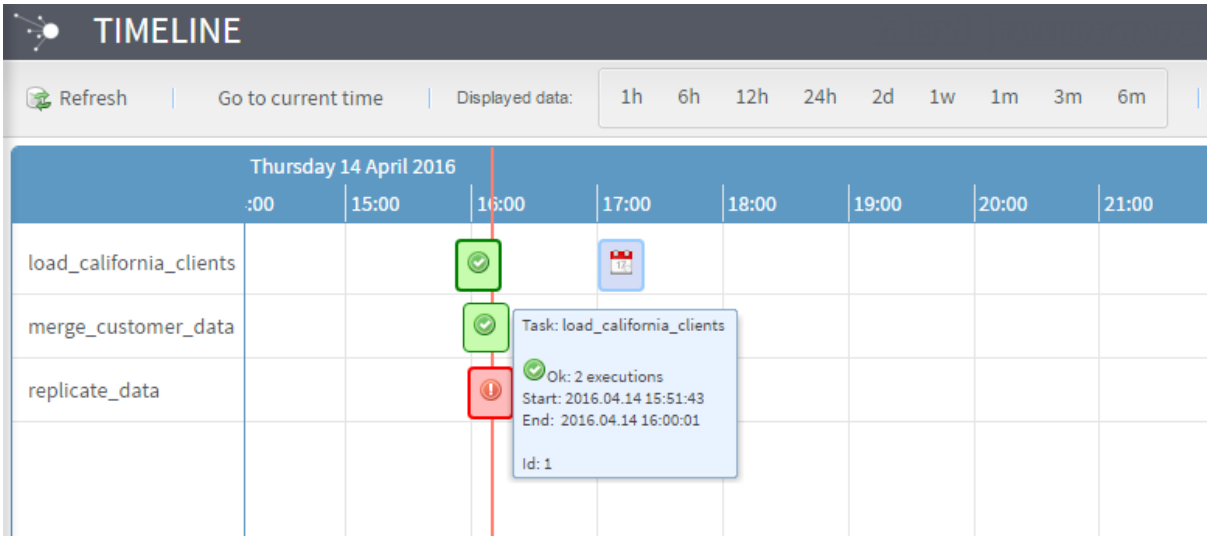
2. In the drop-down list, select:

Item	To...
Sort Ascending	Arrange the list in an ascending order.
Sort Descending	Arrange the list in an descending order.
Columns	Display a drop-down list where you can select/clear the check boxes next to the column name(s) you need to show/hide.
Filters	Filter the execution history information to display tasks according to criteria relative to each column. For more information, see *Limiting the number of tasks in the execution monitoring list*.

8.6.4. Accessing the Timeline and examining illustrated data

The **Timeline** page allows you to access the chronology of task executions and provides you with information updated in real time.

In the **Menu** tree view, expand **Monitoring** and click **Timeline** to open the graphical view of the execution history of your tasks.



The **Timeline** page offers you the possibility to display only the tasks launched or the tasks scheduled to be launched during a defined time range. To do this, do the following:

- In the **Displayed data** list, select the time interval corresponding to the task executions you want to monitor, considering that **h** corresponds to hours, **d** to days and **w** to weeks. Note that these preferences are stored in your Web browser session.

  To put the time line at the current time, click **Go to current time** in the toolbar.

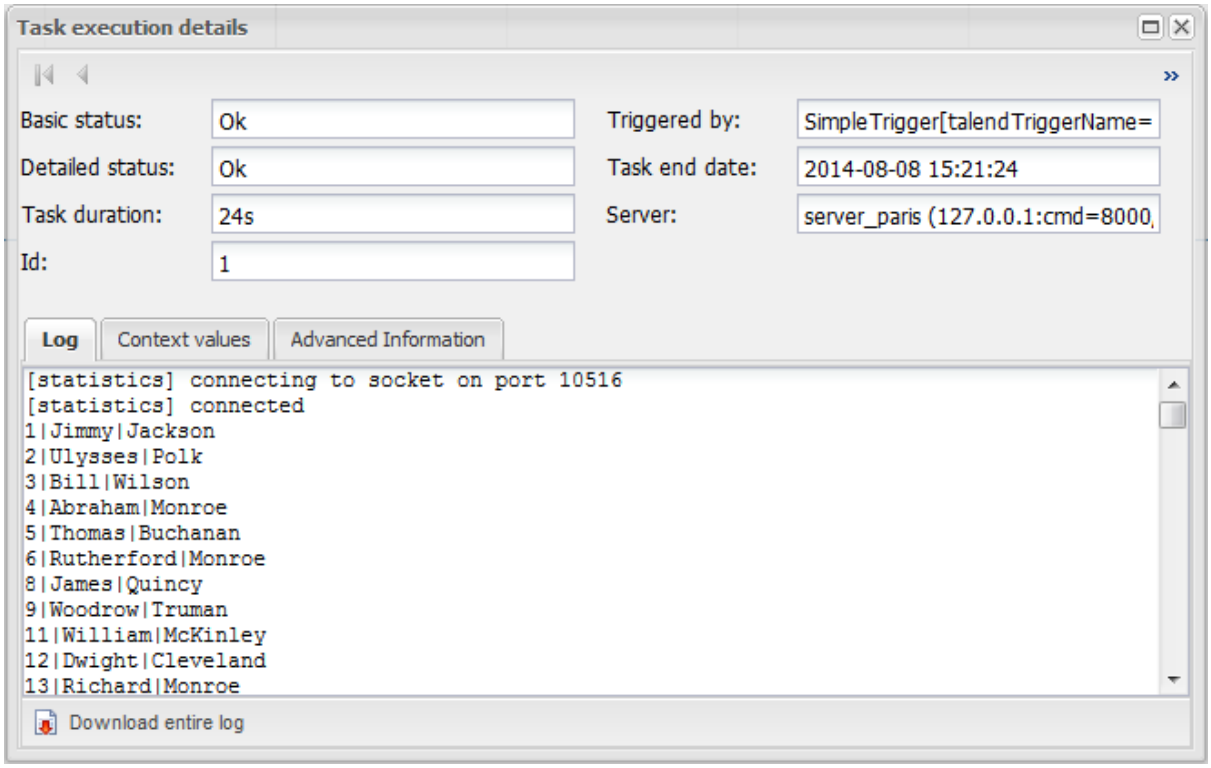
To filter the executions according to their status, click the corresponding icons in the toolbar and refresh the page. To filter the executions according to the name of the task, enter the name of the task you want to monitor in the **Task(s)** field of the toolbar and refresh the page to take the changes into account.

In the graphic, the red line represents the "present" (the real time). On the left of this red line are displayed the task instances already launched and on the right are displayed the task instances that will be triggered.

Executions that are very close to each other might be represented by a single icon with a bold frame. Move your pointer over the icon to display their information.

By moving your pointer on a task row in the graphic, you display the icons corresponding to the different execution status instances of that task along with tooltips providing some information about the task and the related Job.

If you click an icon on a task row, a pop-up window opens and display detailed information about the selected execution, in which you can visualize the logs, the context values and the advanced information of the task, as well as navigate between the different task executions and download the detailed logs.



Chapter 9. Collecting the Job execution statistics

Talend Administration Center offers the possibility to display and collect all Job execution statistics.

For a real-life use case of this feature, see *Theory into practice: Executing and monitoring a data integration Job* .

Access to this module depends on your license. For more information, refer to *What modules and features are available depending on your license* .

9.1. What are real time statistics

Talend Administration Center provides the **Real time statistics** module which allows you to view the task execution statistics directly in the **Administration Center**.

The **Real-time Statistics** feature tracks in real-time the execution status and performance of processes from *Talend Administration Center* during the execution of the Job. This feature takes up the **Statistics** feature available from *Talend Studio*. For more information about this feature in the Studio, see *Talend Studio User Guide*.

The real-time statistics information consists of the execution time of each task and its corresponding Job, the number of rows processed in each data flow and the time taken to process them, and the number of rows processed per second. This can help you follow the progress of the Jobs of interest during their execution and spot immediately any bottlenecks in the data processing flows.

9.2. Accessing real time statistics

When a Job is executed from *Talend Administration Center*, you can display and collect its execution statistics.

Note that if you are using one of the subscription-based **Talend** solutions with Big Data, this feature is also applicable on the Map/Reduce Jobs you have designed in the Studio.

9.2.1. Prerequisites

Certain conditions need to be met before being able to use this facility in *Talend Administration Center*. You have to:

- create a task in *Talend Administration Center* to execute the previously designed Job by enabling the **Statistic** option.

  For more information, see *Adding a Normal execution task*.

or,

- enable the Statistic option for a task already existing in *Talend Administration Center*.

  For more information, see the section below.

9.2.1.1. How to activate Real Time Statistics

Before accessing the **Real Time Statistics** facility of your tasks, you need to activate the option. To do so, do the following:

1. On the **Job conductor** page, display the **Execution task** panel if this is hidden by clicking  on the right hand side of the page.
2. Click **Edition** to display the **Execution task** options, if these are hidden.
3. From the **Statistic** list, select **enabled**.

   Next to enabled, a short text may appear if the Job needs to be regenerated.

If a regeneration is required, this will also be indicated on the tabular task list where the **Status** reads **Ready to generate**.

4. Click **Save** to validate the changes, or click **Cancel** to cancel it.

> *If you click on any of the tasks in the list before finalizing the creation or modification of the current task, a dialog box pops up prompting you to save the parameters in the configuration panel before switching to another task. Click Cancel to return to the configuration panel and save the parameters.*

Now that the **Real time statistics** feature has been activated in *Talend Administration Center*, you can access it to track in real-time the execution status and performance of your processes.

For more information, see *Accessing the Error Recovery Management page* and *Recovering job execution*.

9.2.2. Accessing the Real time statistics page

Talend Administration Center provides you with a **Real time statistics** page where you can display all job execution statistics.

You can access this page through other different pages in *Talend Administration Center*, namely **Job Conductor**, **Task execution monitoring** and **Error recovery management**.

To access **Real time statistics** from the **Job Conductor** page, do the following:

1. In the **Menu** tree view, click **Job Conductor** to display the list of scheduled tasks for deploying and executing Jobs on remote servers.
2. In the list, select the task you want to display the statistics of. The Real time statistics option of this task must be activated. For more information, see *How to activate Real Time Statistics*.
3. On the tool bar, click **Show statistic view** to display the **Real time statistics** page.

To access **Real time statistics** from the **Task execution monitoring** page, do the following:

1. In the **Menu** tree view, expand **Monitoring** and **Task execution monitoring**, and click **Execution History** to open a tabular list that displays all scheduled tasks, whether triggered or not.
2. In the list, select the task about which you want to display the statistics. The Real time statistics option of this task must be activated. For more information, see *How to activate Real Time Statistics*.
3. In the **Actions** column, click that corresponds to the Job about which you want to display the statistics.

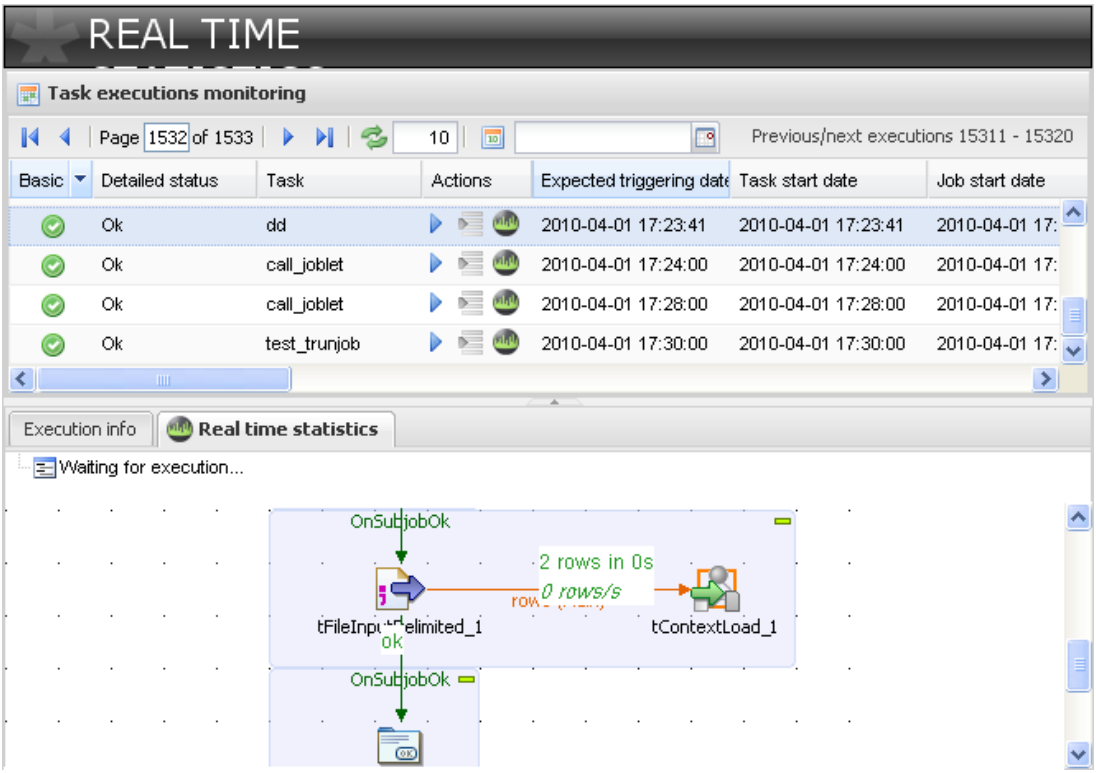
   The **Real time statistics** page displays.

To access Real time statistics from the **Error Recovery Management** page, complete the following:

1. You can access the **Error Recovery Management** page from the **Job conductor**, **Monitoring** and **Task execution monitoring** pages. For more information, see *Accessing the Error Recovery Management page*.
2. In the list of tasks, select the task of interest. The Real time statistics option of this task must be activated. For more information, see *How to activate Real Time Statistics*.
3. In the **Actions** column, click that corresponds to the Job of interest.

   The **Real time statistics** page opens.

The following figure illustrates an example of the **Real time statistics** page.



Ensure that the execution of the Job about which you want to view the statistic information has the statistic mode enabled. For more information on this mode, see Adding a Normal execution task and How to activate Real Time Statistics.

The **Real time statistics** page is divided into three parts: at the top of the page, the **Task execution monitoring** tabular list tracking triggered and executed tasks, and at the bottom, **Execution Info** and **Real time statistics** views.

Click the button docked on the top of the **Execution info** or **Real time statistics** views to display it on full size.

The **Task execution monitoring** list is used the same way as the one available from the **Monitoring** node. For more information, see *Accessing the execution monitoring grid and examining collected data*.

For more information about **Execution Info** and **Real time statistics** views, see the following two sections.

9.2.3. Accessing the Execution info view

To access the **Execution info** view of a specific task, do the following:

1. Select the task on the **Task execution monitoring** tabular list.
2. On the lower part of **Real time statistics** page, click the **Execution info** view.

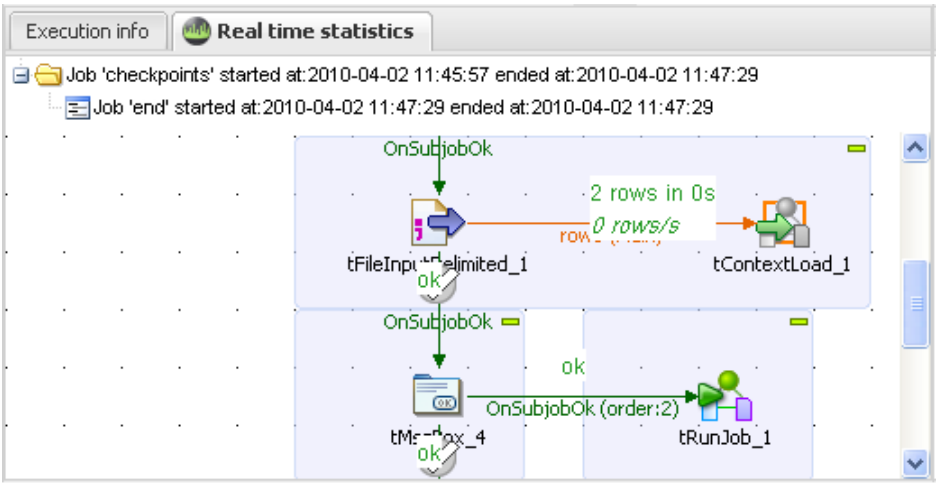
The **Execution Info** tab is used the same way as the one available from the **Error recovery management** page. For more information on this tab, see *How to access the Execution info view*.

9.2.4. Accessing the Real time statistics view

To access the **Real time statistics** view of a specific task, complete the following:

1. Select the task on the **Task execution monitoring** tabular list.
2. On the lower part of **Real time statistics** page, click the **Real time statistics** view.

The following figure presents an example of the **Real time statistics** tab.



Here you can see the statistical information of the selected job execution, along with its graphical view.

The graphical Job view presents a capture of what the selected Job looks like at the end of the execution.

If this Job contains child Jobs, a tree view appears above the Job capture showing you all its child Jobs, along with their execution information. To display the parent job execution or the execution of one of its child, simply click the relevant node.

The same information are presented in real time in the **[Real time statistics]** window during the job execution, when the Job is manually executed from *Talend Administration Center*. For more information, see the following section.

9.2.5. Displaying real time statistics during remote execution

From *Talend Administration Center*, you can monitor in real time the execution status and performance of your processes. This allows you to identify any bottleneck during the data processing and gives you a real-time visibility on the progress of your Jobs.

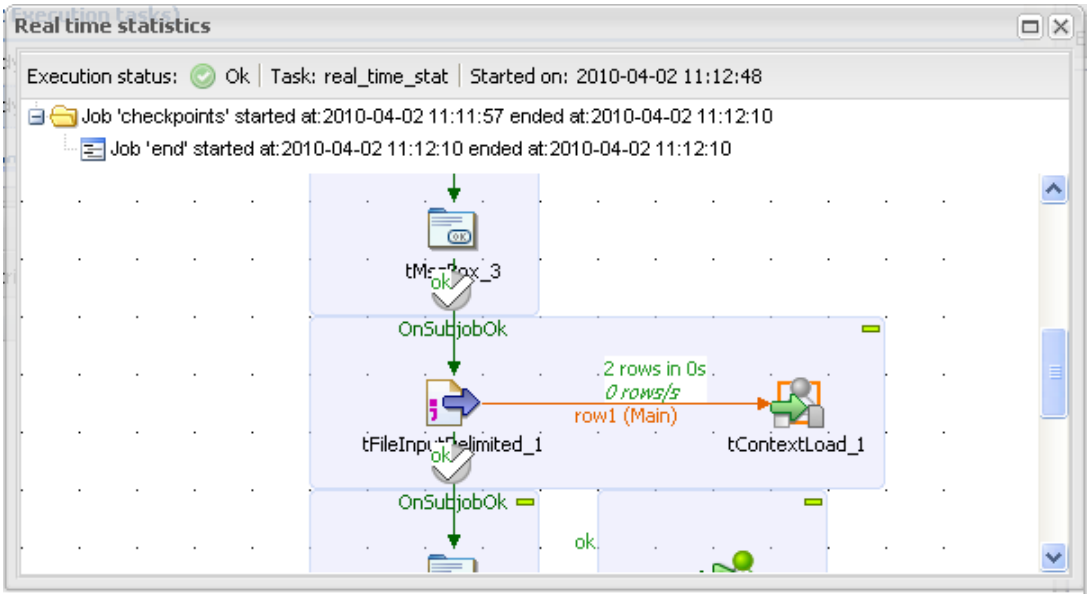
To display the **[Real time statistics]** window during remote execution, do the following:

1. In the **Menu** tree view, click **Job Conductor** to display the list of scheduled tasks for deploying and executing Jobs on remote servers.
2. Ensure the task you want to execute and display the real time statistics related has the **Statistics** option enabled. For more information about the activation of the statistics from *Talend Administration Center*, see *How to activate Real Time Statistics*.
3. Select it in the list of tasks and check its **Status**. It can be **Ready to generate**, **Ready to deploy** or **Ready to run**.
4. Depending on its status, click the appropriate button on the tool bar: **Generate**, **Deploy** or **Run**.

   For further information about how to generate, deploy and run a Job on *Talend Administration Center*, see *Sequence of task execution*.

Once the Job begins to run, the **[Real time statistics]** window pops up.

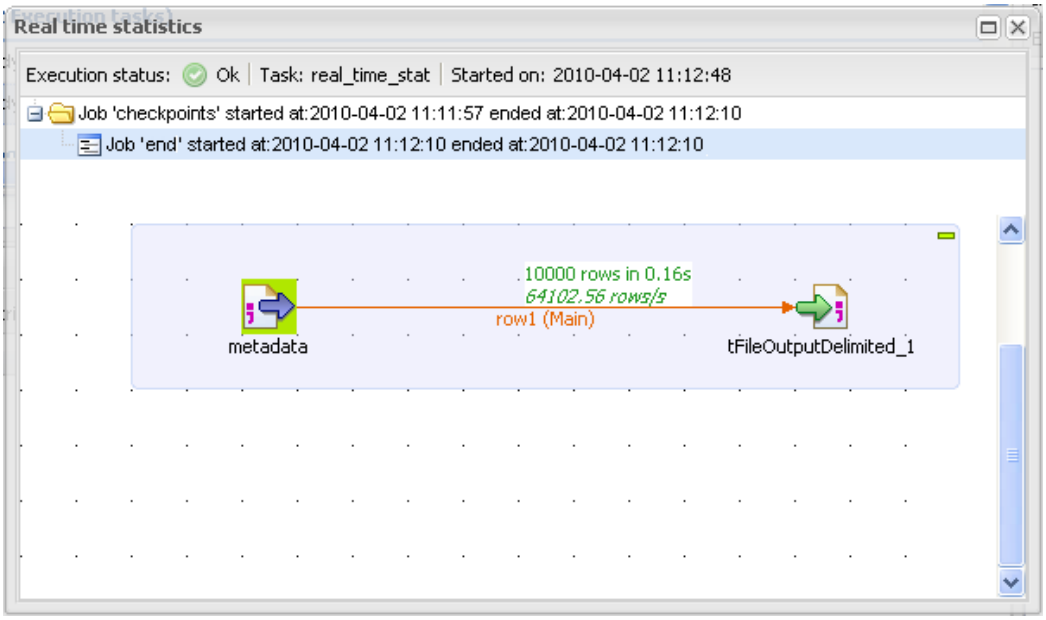
The following figure is an example of the **[Real time statistics]** window.



Here, you can see the statistical information in real time as the *checkpoints* Job runs.

If the Job executed contains child Jobs, a tree view appears above the graphical view of the Job showing you all its child Jobs, along with their execution information. Here, the *checkpoint* job has one child Job named *end*. To display the parent job execution or the execution of one of its childs, simply click the corresponding node.

In this example, you can click the child Job node, *end*, to view this child Job only.



Chapter 10. Recovering the execution of a Job

Talend Administration Center offers the possibility to recover a Job execution process at a point beyond its beginning.

Access to this feature depends on your license. For more information, refer to *What modules and features are available depending on your license* .

10.1. What are recovery checkpoints

Talend Administration Center offers the concept of "recovery checkpoints" as an execution restore facility for Jobs executed with errors. Checkpoints are taken in anticipation of the potential need to restart a job execution beyond its starting point.

Job execution processes can be time-consuming, as are backup and restore operations. If checkpointing is possible, checkpoints are initiated at specified intervals (trigger connections) in terms of bulks of the data flow.

The purpose of checkpointing is to minimize the amount of time and effort wasted if you need to restart the process of job execution when this process is interrupted by a failure. With checkpointing, the process can be restarted from the latest checkpoint previous to the failure rather than from the beginning of the job execution process.

10.2. Recovering job execution

When job execution is interrupted by a failure, you can use *Talend Administration Center* to restart execution from the latest checkpoint previous to the failure rather than from the beginning of the execution process.

10.2.1. Prerequisites

Certain conditions needs to be met before being able to use this facility in *Talend Administration Center*.

- When designing a Job in *Talend Studio*, you should initiate as "checkpoints" one or several **OnSubjobOk** trigger connections. For more information about how to define checkpoints, see *Talend Studio User Guide* .
- You have to create a task in *Talend Administration Center* to execute the previously designed Job.

  For more information, see *Adding a Normal execution task*.

Later, if there is a failure during this job execution, you can access the **Error recovery Management** page in *Talend Administration Center* and recover job execution at a selected checkpoint.

For more information, see *Accessing the Error Recovery Management page* and *Recovering job execution*.

10.2.2. Accessing the Error Recovery Management page

Talend Administration Center provides you with an **Error Recovery Management** page where you can recover all job executions ended in failure.

You can access this page through other different pages in *Talend Administration Center*, namely **Job Conductor**, **Monitoring** and **Task execution monitoring**.

Accessing Error recovery Management from the Job Conductor page

1. In the **Menu** tree view, expand **Job Conductor** and click **Job Conductor** to display the list of scheduled tasks for deploying and executing Jobs on remote servers.

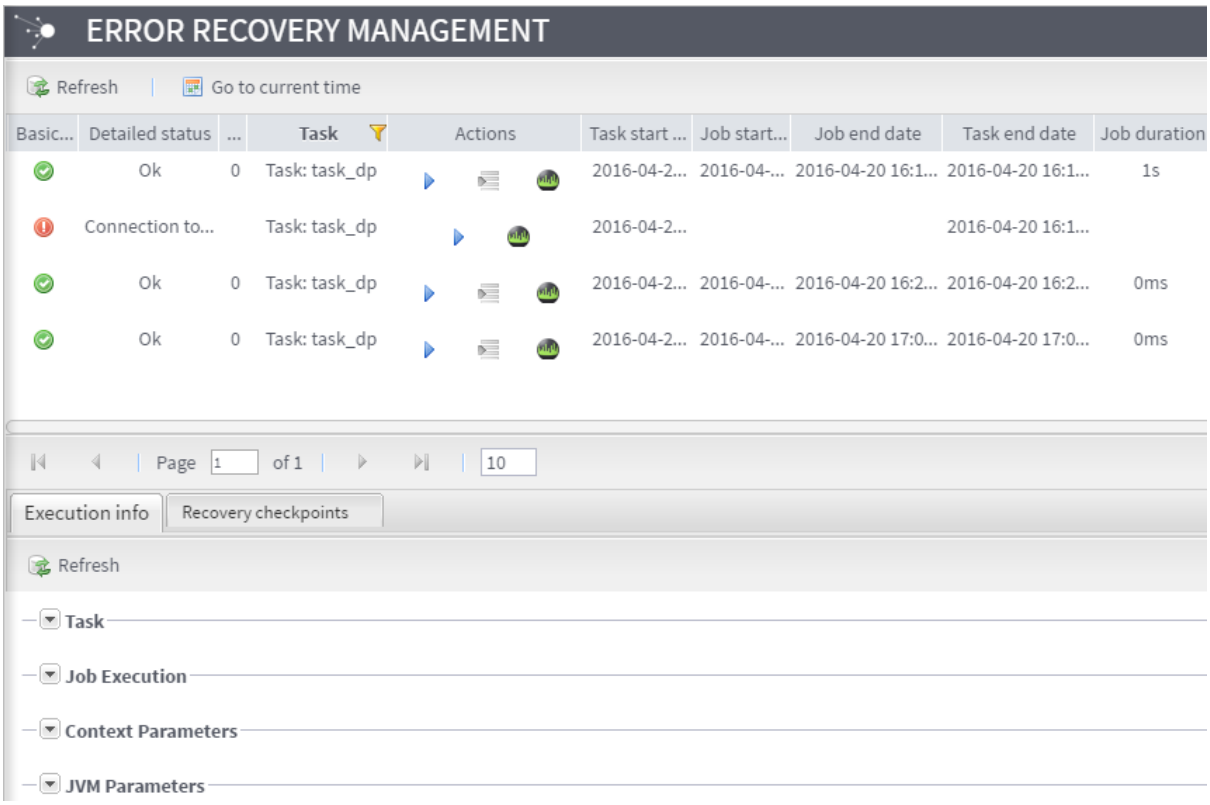
2. On the list, select the Job of which you want to recover the execution.
3. On the toolbar, click **Recover last execution** to display the **Error Recovery Management** page.

Accessing Error Recovery Management from the Task execution monitoring page

1. In the **Menu** tree view, expand **Monitoring** and **Task execution monitoring** menu items and click **Execution History** to open a tabular list that displays all scheduled tasks, whether triggered or not.
2. In the **Actions** column, click that corresponds to the Job you want to recover.

   The **Error Recovery Management** page opens.

The following figure illustrates an example of the **Error Recovery Management** page.



This page presents two horizontal parts: on the upper part, the **Task execution monitoring** list and, on the lower part: **Execution Info** and **Recovery checkpoints** tabs. See the following sections for detail description of the views associated with these tabs.

The **Task execution monitoring** list remains on the upper half unless you expand either of the two views using the button.

For more information about the **Task execution monitoring** list, see *Accessing the execution monitoring grid and examining collected data*. For more information on how to change the display and filter the **Task execution monitoring** list, see *Limiting the number of tasks in the execution monitoring list* and *Customizing the display of the execution monitoring list*.

10.2.2.1. How to access the Execution info view

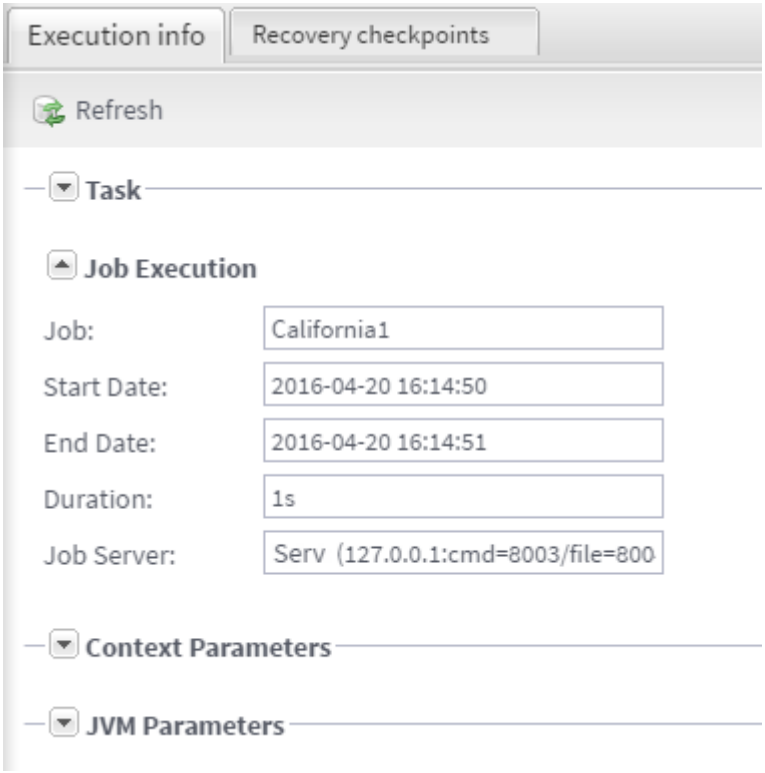
From the **Error Recovery Management** page, you can access a view that displays the execution information of any of the executions listed in the page.

To access the **Execution info** view, complete the following:

1. From the **Error Recovery Management** page, select the Job for which you want to display the execution information.
2. In the lower part of the page, click the **Execution info** tab.

   A read-only view of the execution information of the monitored Job displays.

   The following figure shows an example of the **Execution Info** view.



   The **Execution info** view shows the execution details at the task level and at the Job level.

   The **Context Parameters** area in the **Execution info** view shows only the context variables used in the father Job, if any. All context parameters used in the child Jobs linked to the father Job will not show in this view, however, it is possible to show them in the **Recovery checkpoints** view. For more information, see *How to display context information of a father or child Job*.

3. By clicking the ▲ or ▼ button, you can respectively expand or collapse some informative fields related to the selected task, execution of the associated Job, JVM parameters, or context parameters.
4. Click the ▲ button to display the **Execution info** view in full size on the web page.

   The **Execution info** provides, for the time being, a static display of task execution history. To refresh the display, click the **Refresh** button.

10.2.2.2. How to access the Recovery checkpoints view

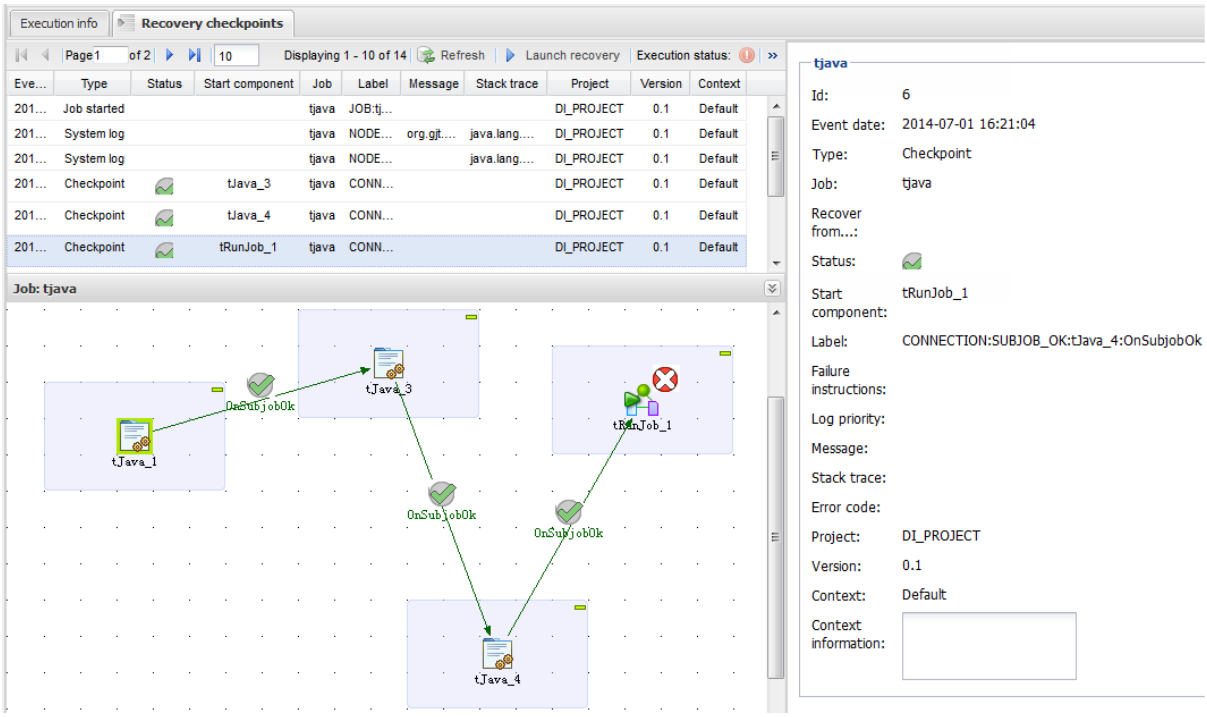
To access the **Recovery checkpoints** view, do the following:

1. From the **Error Recovery Management** page, select the Job for which you want to display the recovery checkpoints.
2. In the lower part of the page, click the **Recovery checkpoints** tab.

The recovery checkpoints of the monitored Job are listed, along with job execution logs if any.

If the checkpoint list does not appear, click the **Refresh** button of the **Recovery checkpoint** view.

The following figure illustrates an example of the **Recovery checkpoints** view.



You can click the button to the right of the view to open the information panel.

This view provides the following:

- at the top, a list of the checkpoints initiated on the trigger connections that are set when designing the Job in *Talend Studio*. For more information on this list, see *How to access the checkpoint list*.
- in the **Job** panel below the checkpoint list, a capture of the monitored Job including a icon on every trigger connection initiated as a checkpoint when designing the Job in *Talend Studio*,
- in the information panel to the right, the detail of any event (check point, user defined log, the start or end of the Job) that you select in the job capture or in the checkpoint list. For more information on the information panel, see *How to display the detail of a specific recovery event*. For more information on the checkpoint list, see *How to access the checkpoint list*.

How to access the checkpoint list

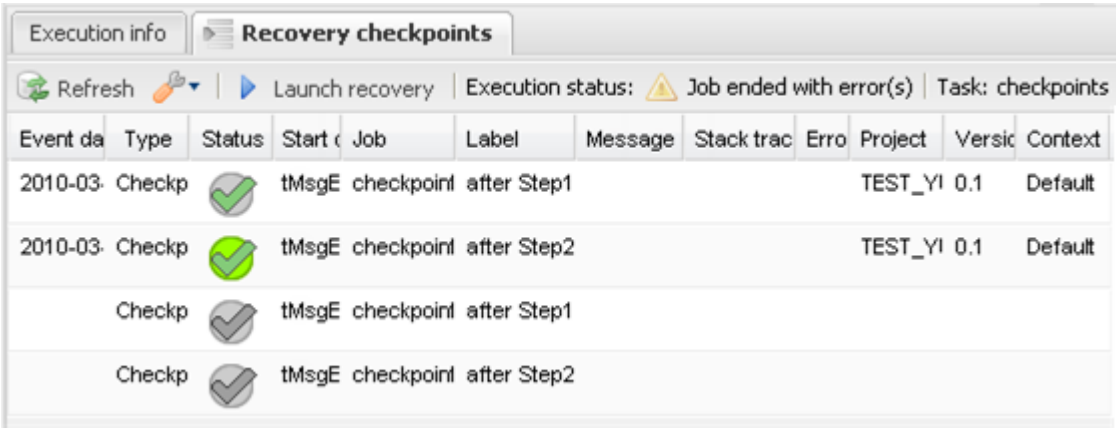
To access the **Recovery checkpoints** list, complete the following:

1. From the **Error Recovery Management** page, select the Job for which you want to display the recovery checkpoints in the **Task execution monitoring** list.
2. In the lower part of the page, click the **Recovery checkpoints** tab.

   The recovery checkpoints of the monitored Job are listed, along with job execution logs if any.

If the checkpoint list does not display, click the **Refresh** button of the **Recovery checkpoint** view.

3. Click the button to display the **Recovery checkpoint** tab in full size on the web page.



The events recorded by default in this list are of two types: either **Checkpoint** or **System log**. But you can list other types of events if you click on the toolbar and select **Show other logs** from the contextual menu.

The **Recovery checkpoints** list provides the following information:

Column	Description
Event date	The date and time of an event taking place during the execution of the monitored Job.
Type	Type of the recorded events: either **Checkpoint** or **System log** (**tWarn** messages). If you want to list logs other than the above two types, click on the toolbar and select the **Show other logs** check box in the contextual menu.
Status	Execution status of the event: : fatal error. : invalidated checkpoint. : validated checkpoint that is set as the start for the recovery operation.
Start component	Name of the component at which job execution will be recovered.
Job	Name of the executed Job.
Label	Name of the checkpoint you entered in the **Label** field in *Talend Studio*. For more information, see *Talend Studio User Guide*.
Failure instructions	The information you typed in the corresponding field in *Talend Studio*. For more information, see *Talend Studio User Guide*.
Log priority	Status of the priority of the log: : Job that has fallen in fatal error. : Job that has fallen in error and not completed.
Message	The message corresponding to the log priority icon.
Stack trace	Detailed diagnostic message.
Error code	The error code defined in the **Basic settings** of the **tDie** component in *Talend Studio*.
Project	Name of the project containing the selected Job.
Version	Version of the Job as defined in your *Talend Studio*.

Column	Description
Context	Name of the context as defined for this Job in your studio.
Virtual server	Name of the virtual server, if any

How to display the detail of a specific recovery event

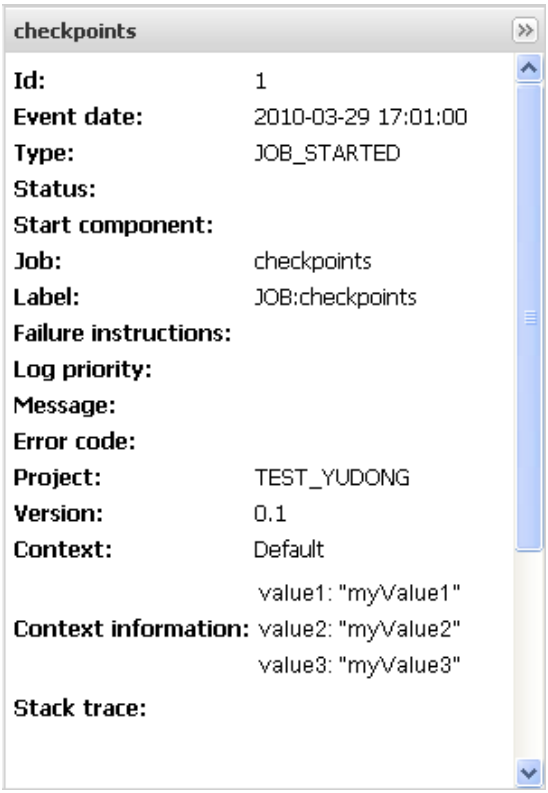
The event information panel associated with the **Recovery checkpoints** view provides detailed information of each recovery event listed in the recovery checkpoint list. These events include checkpoints, user defined log, job start or end.

The events recorded by default in the **Recovery checkpoints** list are of two types: either **Checkpoint** or **System log**. But you can list other types of events if you click on the toolbar and select **Show other logs** from the contextual menu.

To display the information related to any recovery event, complete one of the following:

1. From the **Recovery checkpoints** list, click the recovery event you want to display its detail, or
2. Click the warning icon or the checkpoint icon from the job capture in the **Recovery checkpoints** view.

The following figure presents an example of the event information panel.



The **Context Parameters** area shows the context variables used in the father Job or any of the child Jobs linked to it. For more information, see the following section.

How to display context information of a father or child Job

Talend Administration Center enables you to display the context parameters used in the father Job or any of the child Jobs linked to it.

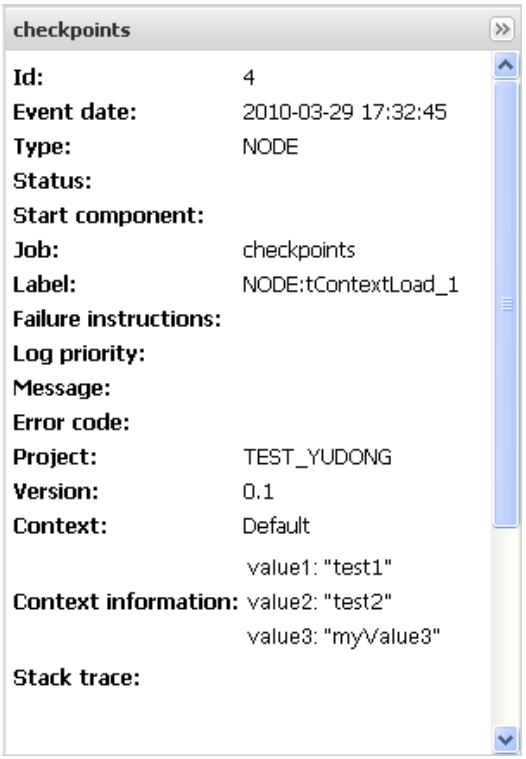
To display the context parameters of a Job, complete the following:

1. On the toolbar of the **Recovery checkpoints** list, click  and select the **Show lines with context information** check box from the contextual menu.

2. From the **Recovery checkpoints** list, click the *Job started* recovery event corresponding to the father Job or any of the child Jobs linked to it. This will display the execution detail of the selected Job including the context variables used in it.

As shown in the capture in *How to display the detail of a specific recovery event*, when the Job starts, it loads the existing context variables, three in this example *myValue1*, *myValue2* and *myValue3*. So if you select the *Job started* event type in the checkpoint list, the variables display in the **Context information** area in the information panel.

Later, if you use the **tContextLoad** component to load a group of new context variables, *test1* and *test2* that will replace the first two context variables in the Job, and then select the *Job started* event in the list, the **Context information** field will show the new loaded context variables as follows:



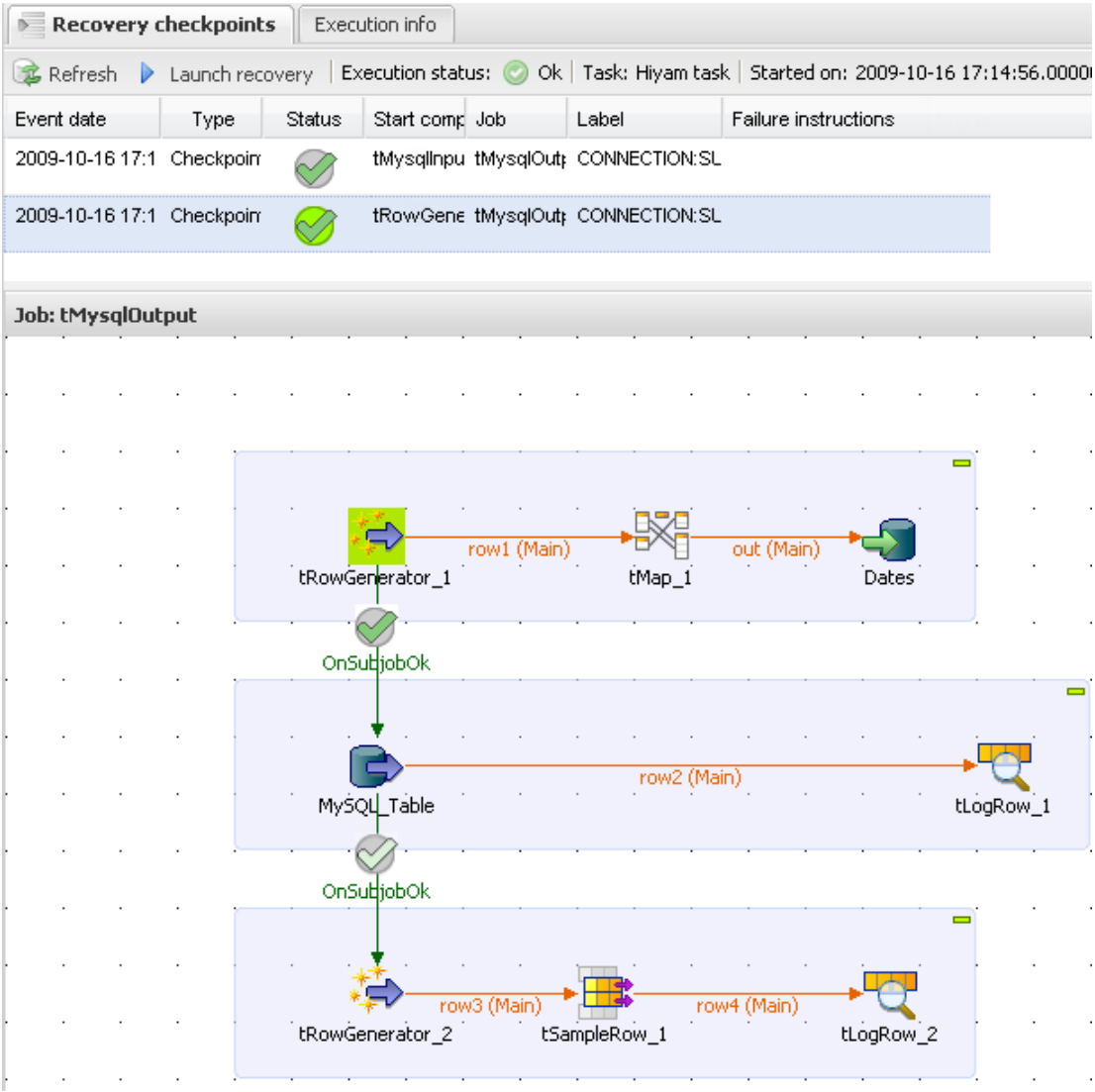
10.2.3. Recovering job execution

Once you access the **Recovery checkpoints** view for the monitored Job which execution task has fallen in error and was not completed, do the following to recover job execution:

1. In the **Recover from...** column, click the option button next to the checkpoint you want to recover job execution from. Usually, you want to recover execution from a checkpoint earlier to the failure.

   The selected check point starts to blink on and off on the graphical design of the monitored job in the second half of the **Recovery checkpoints** view.

    *In the Recover from ... list, you can only select check points initiated on OnSubjobOk connections.*



2. On the toolbar of the **Recovery checkpoints** view, click **Launch recovery**.

   A confirmation message appears to say that Job execution process is recovered.

Chapter 11. Monitoring the Service endpoints

The **Service Locator** is a service that provides consumers with a mechanism to discover service endpoints at runtime. The **Service Locator** consists of two parts: The endpoint repository and the ServiceLocator feature divided between service provider and service consumer.

The provider side Locator Feature registers and deregisters service endpoints in the endpoint repository when the provider becomes available or unavailable. The consumer side Locator Feature transparently retrieves service endpoint addresses from the endpoint repository when a service call to a provider is to be made.

Talend Administration Center gives access to the **Service Locator** in the **ESB Infrastructure** module which helps you monitor service endpoint status as recorded in the endpoint repository.

Note that the access to the **Service Locator** page depends on your license. For more information, refer to *What modules and features are available depending on your license* .

Using **Service Locator** in *Talend Administration Center*, you will be able to:

- monitor up and down times for a service endpoint,
- monitor live services
- remove unavailable services

11.1. Prerequisites

To access the **Service Locator** component of **ESB Infrastructure** module, you need to:

- have a licence that includes this module and also have the relevant rights defined by the Administrator during your user account creation in *Talend Administration Center*,
- have previously entered the URL to the Apache Zookeeper server(s) and the credentials to access the Service Locator in the **Configuration** page. For more information, see Setting up the ESB Service Locator and Service Activity Monitoring parameters,
- have properly set up the endpoint repository and the ServiceLocator feature. For more information regarding how to set up the Service Locator module, please refer to *Talend ESB Infrastructure Services Configuration Guide*.

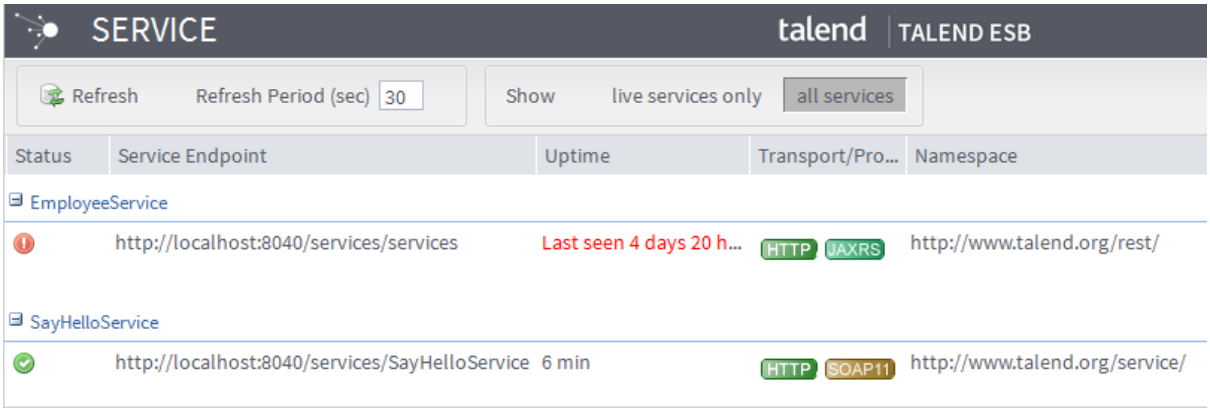
If your license allows the **ESB Infrastructure** module but it does not show in the **Menu** tree view of *Talend Administration Center*, contact your Administrator.

11.2. Accessing Service Locator

On *Talend Administration Center*'s home page and from the **Menu** tree view:

1. Expand the **ESB Infrastructure** node
2. Click **Service Locator** to access the list of service endpoints.

The below figure illustrates an example of a list of service endpoints.



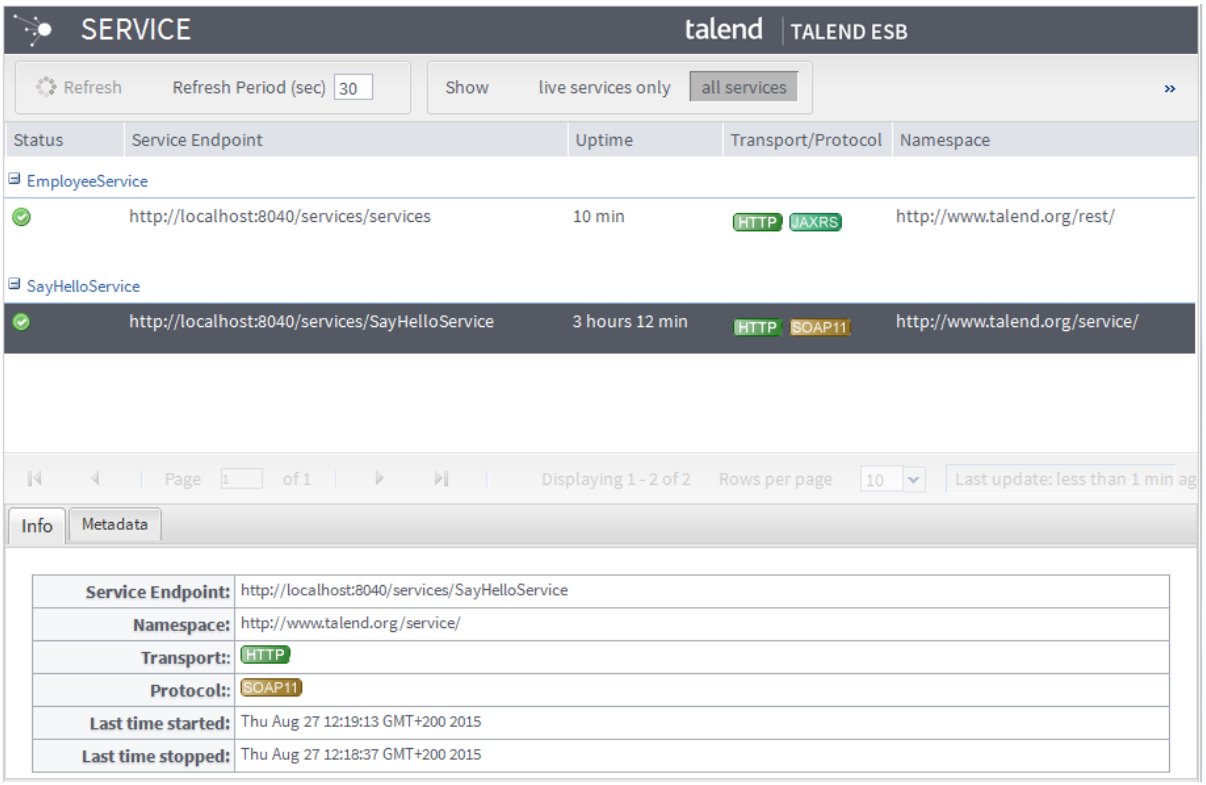
For a list of options available on this page, see the table below.

Name	Action
Refresh	Refresh manually the page.
Refresh Period (sec)	Enter the time period (in seconds) before the page gets refreshed.
Show	**live services only**: Click this button to display only live services. **all services**: Click this button to display all services that are present in the endpoint repository.
Filter	Filter services in the list thanks to a wizard. For more information, see *Filtering services*.

11.3. Monitoring the Service events

Only users that have the Operation manager and Designer role and rights can have a read only access to this page. Other users don't have access to this page at all. For further information on access rights, see User roles/rights in the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the right authorization by the Administrator.

In the **Menu** tree view, click **Service Locator** to open the service list.



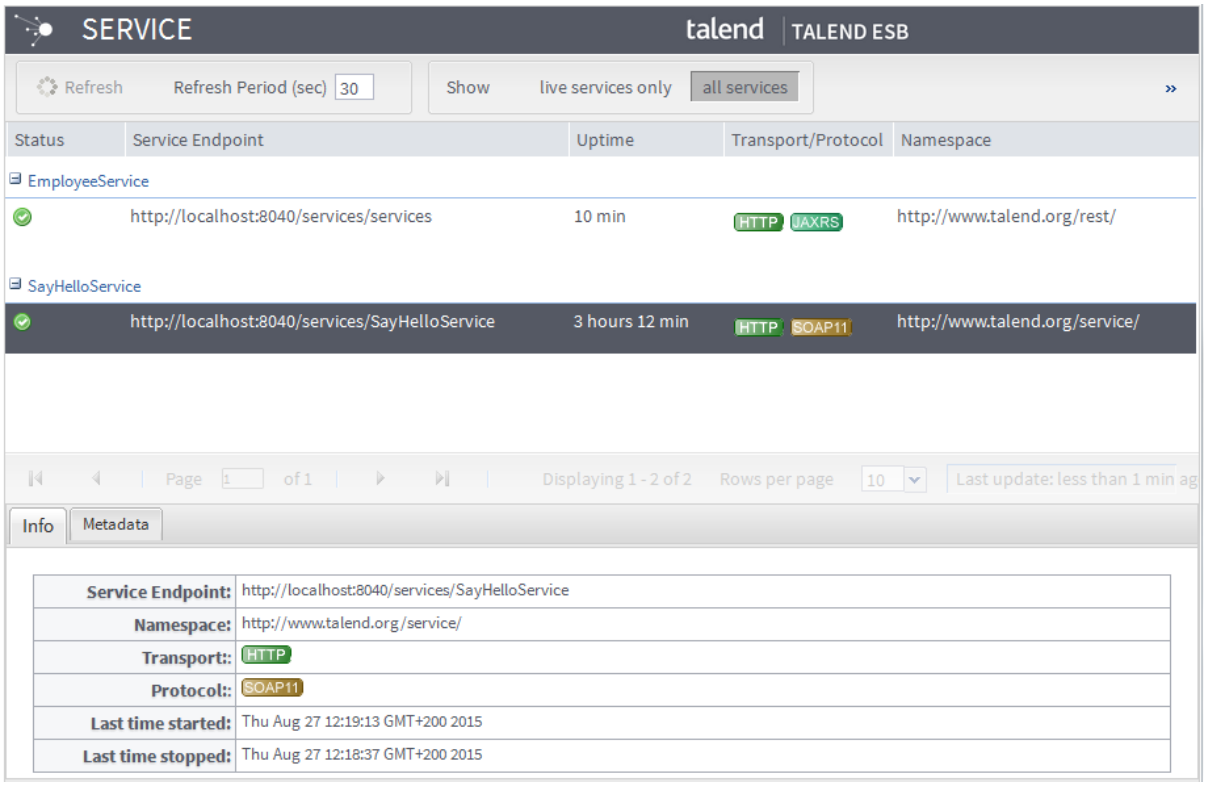
The **Service Locator** list provides information regarding the services, including:

Label	Description
Status	Status of the service endpoint.
Service Endpoint	IP address of the web service
Uptime	Time since service is started
Transport/Protocol	Type of transport & protocol used for service messaging: HTTP and SOAP
Namespace	Namespace for the related service

You can access detailed information for a particular service by clicking on it.

11.3.1. Service details

On the **Service Locator** list, select a service to display its details.



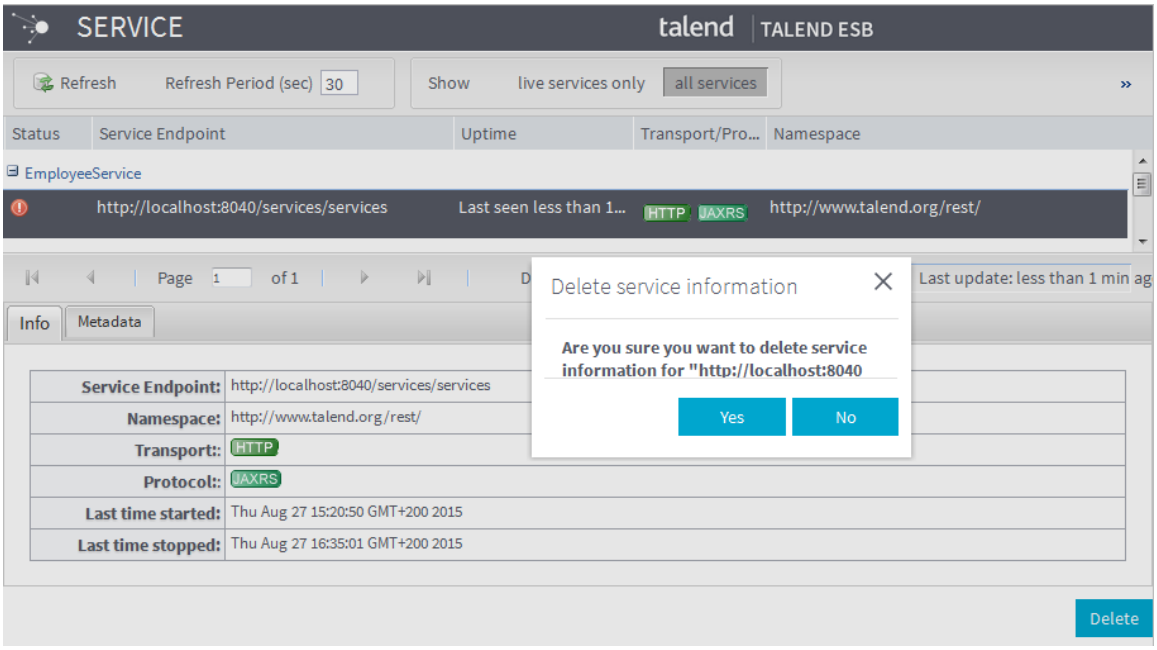
The **Details** panel provides information of the selected service including:

Label	Description
Service Endpoint	IP address of the web service
Namespace	Namespace of the web service
Transport	Type of transport used: HTTP
Protocol	Type of protocol used for messaging: SOAP
Last time started	Time at which the service last started
Last time stopped	Time at which the service last stopped

11.3.2. Deleting a service

From the Service Locator list, you can remove unavailable or unreachable web service. To do so:

1. In the list of services, select the service to delete and click the **Delete** button at the bottom right hand corner of the page.



2. Click **yes** when prompted.

11.3.3. Customizing the display of the Services list

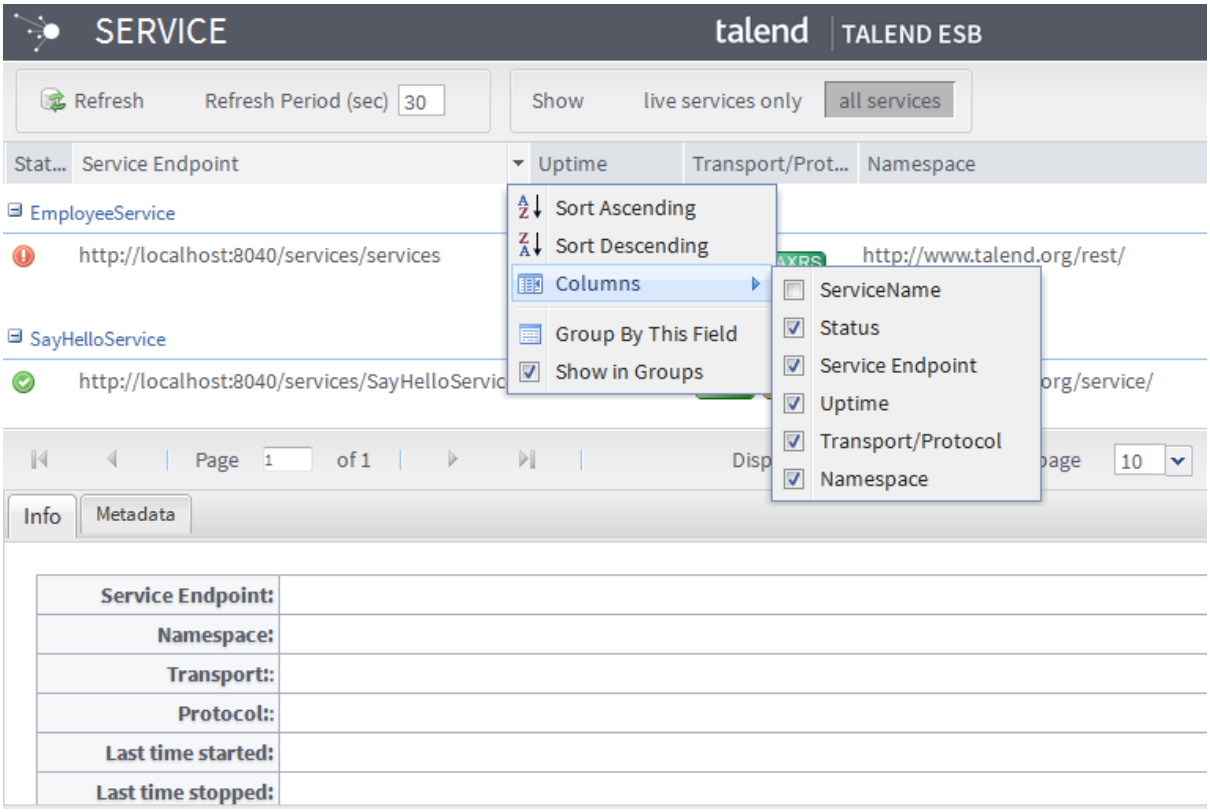
You can customize the service list view to restrict the number of displayed services according to different criteria. You can also show/hide one or more columns in the project list.

1. On the **Service Locator** list, put the pointer on a column name and click the drop-down arrow.

2. In the drop-down list, select:

Item	Description
Sort Ascending	Arranges the list in an ascending order
Sort Descending	Arranges the list in an descending order
Columns	Displays a drop-down list where you can select/clear the check box next to the column(s) you want to show/hide
Group by This Field	Arranges the list by the name of the selected column
Show in Groups	Clear this check box to disable the **Group By This Field** filter.

The figure below shows the list view options in the drop-down list.



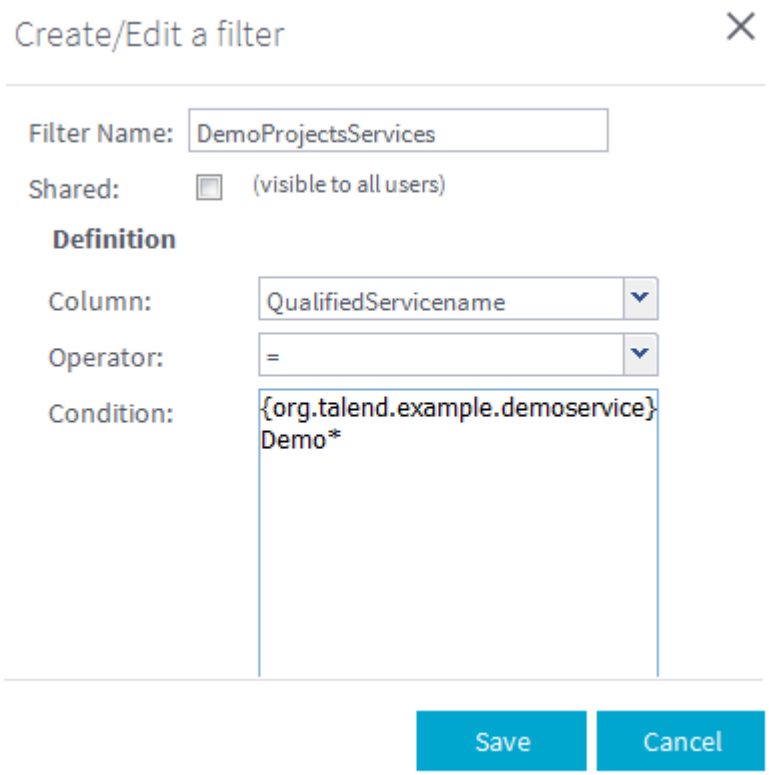
For information regarding the default information displayed, refer to *Monitoring the Service events*.

11.3.4. Filtering services

The Service Locator allows you to filter services in the list. By default, a **(none)** entry is always present to show the Service Locator without any filter applied.

To create a filter:

1. Click  next to the **Filter** drop-down list to show the **[Create/Edit a filter]** wizard.



2. Define the filter as detailed below.

Label	Description
Filter name	The name of the filter
Shared	Select this check box to share the filter with all users.
Column	The following filter columns are supported. **QualifiedServicename**: Select this column to filter the services using the namespace and service name combination. For example, if the filter is defined with the query condition `[QualifiedServiceName] = '{org.talend.example.demoservice}Demo*'`, the filter will show all services with the namespace `{org.talend.examples.demoservice}` and service name starting with `Demo`. **Namespace**: Select this column to filter the services using the namespace. For example, the filter with the query condition `[Namespace] = 'org.talend.examples.*'` will show all services that the namespace starts with `org.talend.examples.`. **Servicename**: Select this column to filter the services using the service name. For example, the filter with the query condition `[ServiceName] in ('DemoService', 'CRMService', 'ReservationService')` will show all services with the service name equals to `DemoService`, `CRMService`, or `ReservationService`. **ServiceEndpoint**: Select this column to filter the services using the service endpoint. For example, the filter with the query condition `[ServiceEndpoint] = '*.talend.com'` will shows all services hosted on `talend.com`.
Operator	Select between = and **in**.
Condition	Enter the query condition as needed.

3. Click **Save** to validate the creation of the filter or click **Cancel** to cancel it.

Once created, you can select the filter from the **Filter** list to apply it and click the  button to edit it, or the  button to delete it.

The filter drop-down list shows all shared filters and all individual filters for the current user in an alphabetical order.

Chapter 12. Monitoring the Service activity

The **ESB Infrastructure** module helps you monitor all events related to requests for services and replies handled through the **Service Activity Monitoring** agent and server.

These events are service calls made with the Apache CXF Framework and the related replies which have been logged into a database. The event is also called a message exchange. Typical use cases are: collecting usage statistics and fault monitoring.

Using **Service Activity Monitoring** in *Talend Administration Center*, you will be able to:

- monitor consolidated event information,
- understand the underlying requests and replies (message exchange) that compose the event,
- monitor faults that may be unexpectedly generated,
- support the system management decisions.

Access to **Service Activity Monitoring** depends on your license. For more information, refer to *What modules and features are available depending on your license* .

12.1. Prerequisites

To access the **Service Activity Monitoring** component of **ESB Infrastructure** module, you need to:

- have a licence that includes this module and also to have the relevant rights defined by the Administrator during your user account creation in *Talend Administration Center*,
- have entered the URL to the Service Activity Monitoring server in the **Configuration** page. For more information, see Setting up the ESB Service Locator and Service Activity Monitoring parameters,
- have properly set up the Agent and Monitoring Server, in order for the Service Activity Monitoring module to be fed with event information. For more information regarding how to set up the Service Activity Monitoring server and agent, please refer to the *Talend ESB Infrastructure Services Configuration Guide*.

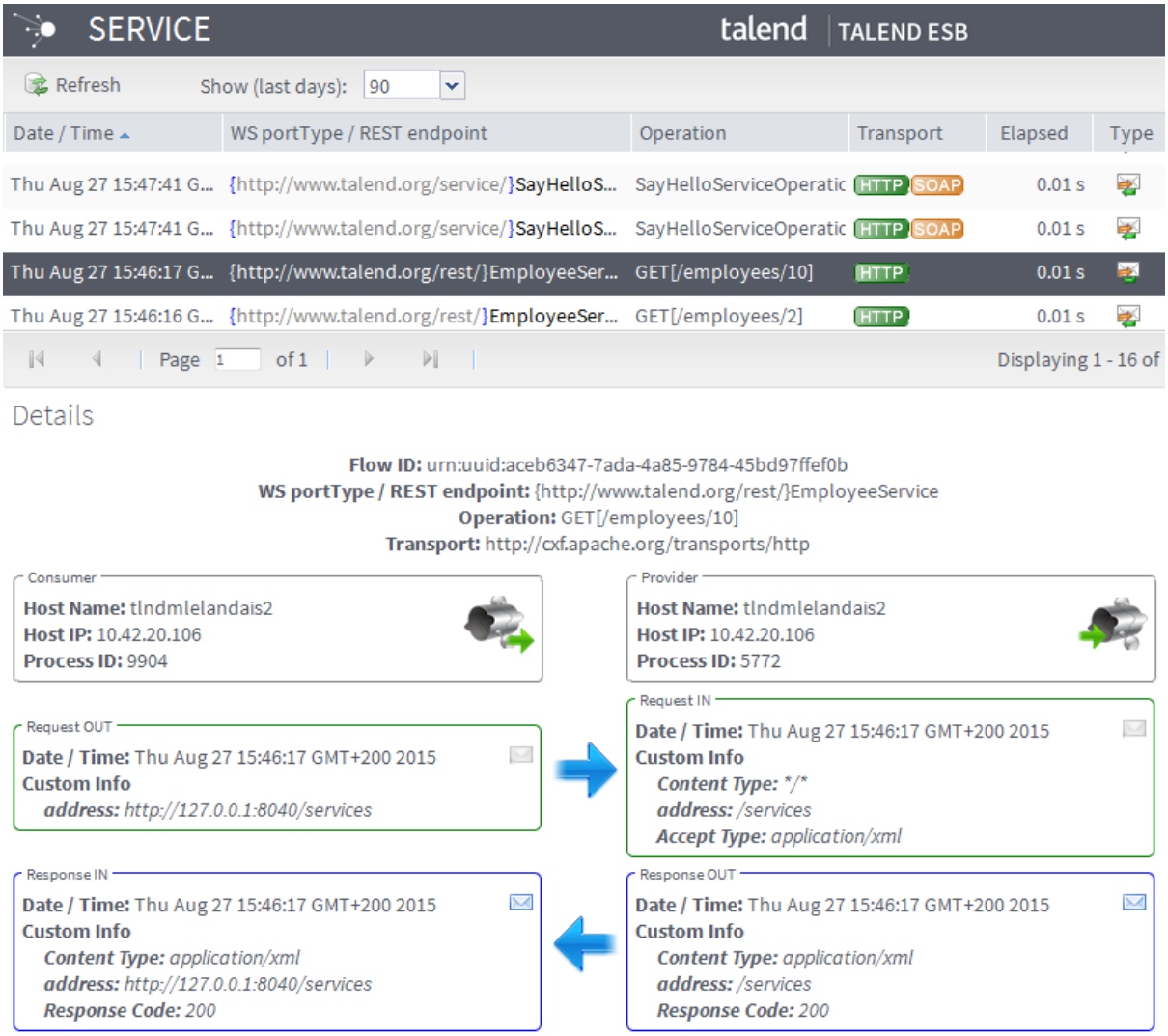
If your license allows the **ESB Infrastructure** module but it does not show in the **Menu** tree view of *Talend Administration Center*, contact your Administrator.

12.2. Accessing Service Activity Monitoring

On *Talend Administration Center*'s home page and from the **Menu** tree view:

1. Expand the **ESB Infrastructure** node
2. Click **Service Activity Monitoring** to access the list of logged message exchanges.

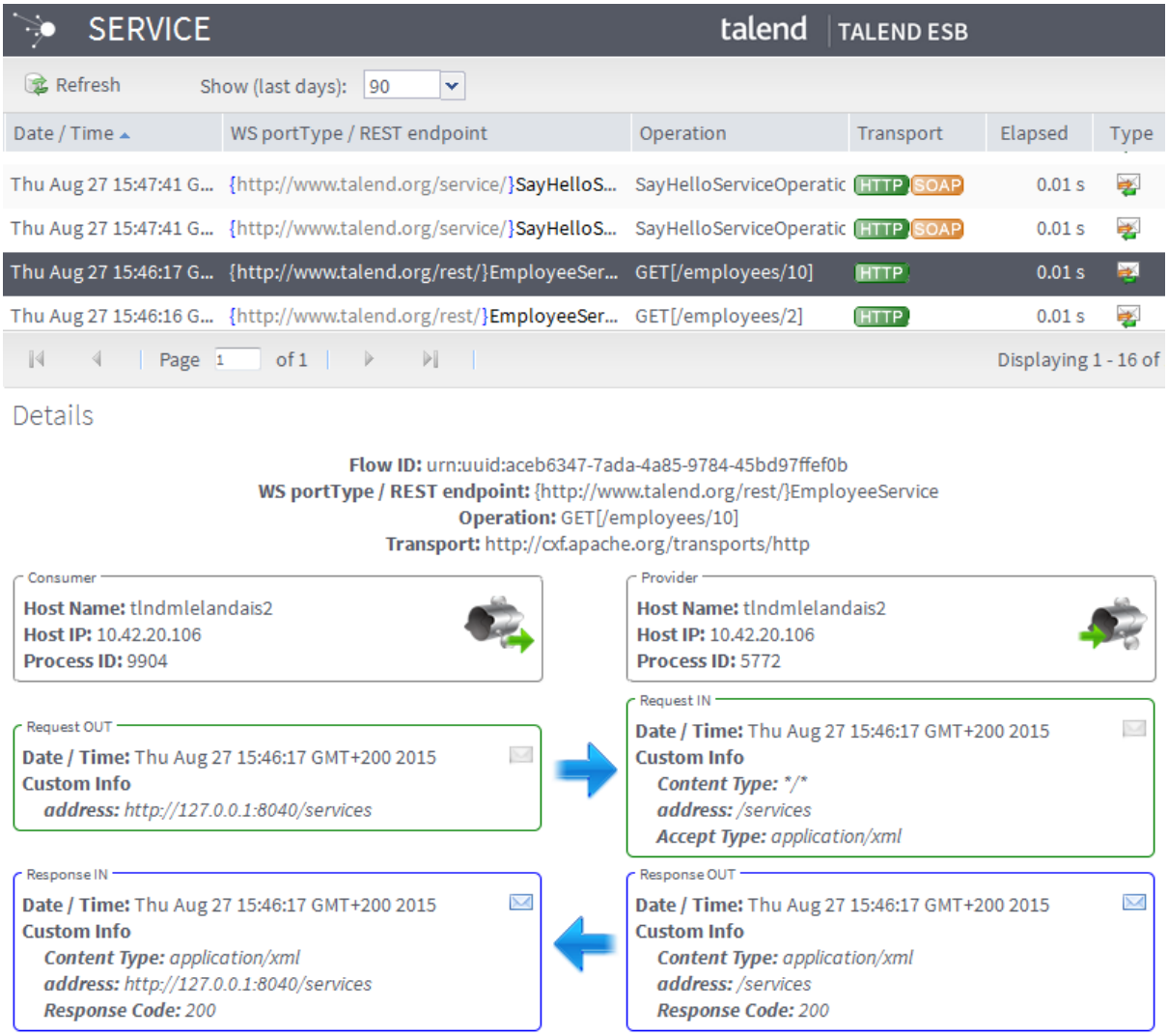
The below figure illustrates an example of a list of monitored Service events.



12.3. Monitoring the Service events

Only users that have the Operation manager and Designer role and rights can have a read only access to this page. Other users don't have access to this page at all. For further information on access rights, see User roles/rights in the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the right authorization by the Administrator.

In the **Menu** tree view, click **Service Activity Monitoring** to open the Service list.



The **Service Activity Monitoring** list provides aggregated information where all events related to the same message exchange are grouped together.

For example: One single request-response call could translate into 4 events in **Service Activity Monitoring** , two from the consumer side (Request-OUT and Response-IN) and two from the provider side (Request-IN and Response-OUT).

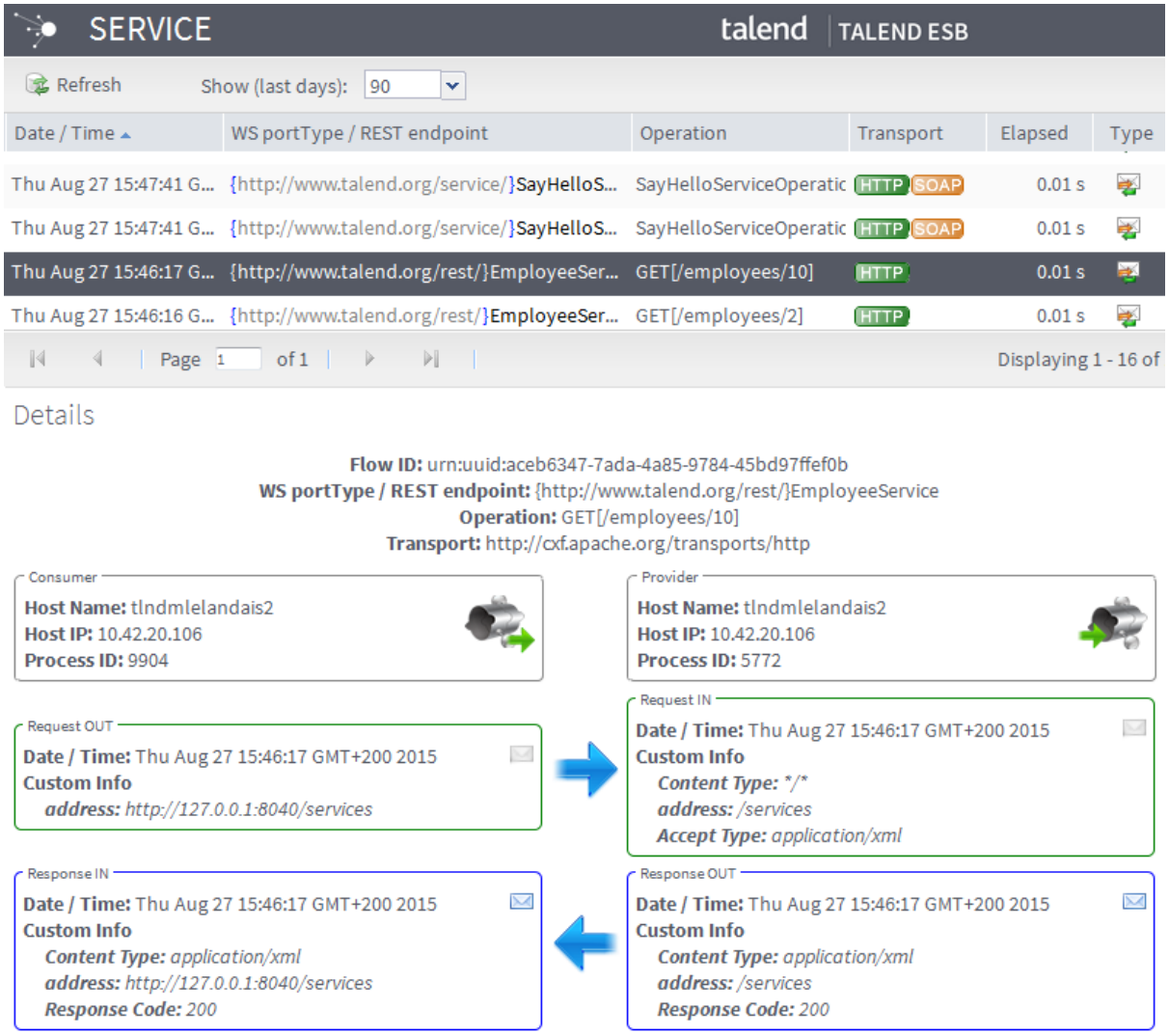
The Service Activity Monitoring table displays an aggregated view where each row groups up to four events. Information provided includes:

Label	Description
Date/Time	Date and timestamp of the event being monitored
WS portType / REST endpoint	PortType name including binding address for SOAP services, or the endpoint name including the URI location for REST services
Operation	Requested web service operation for SOAP services, or the HTTP method (GET|POST|PUT|DELETE) and the relative address for REST services
Transport	Type of transport used for messages: HTTP/SOAP (1.1/1.2)
Elapsed	Elapsed time since the service request was issued
Type	Shows the message exchange type of the operation: request-response or oneway.

You can access the event or message exchange details by clicking on it.

12.3.1. Service Activity details

On the **Service Activity Monitoring** list, select an event to display its details.



In case no response is sent back, a fault message is generated

The header information includes:

Label	Description
Flow ID	Generated UUID for the message header that is being used to track the service call including request and reply messages.
WS portType / REST endpoint	PortType name including binding address for SOAP services, or the endpoint name including the URI location for REST services
Operation	Requested web service operation for SOAP services, or the HTTP method (GET|POST|PUT|DELETE) and the relative address for REST services
Transport	Type of transport used for messages: HTTP/SOAP (1.1/1.2)

The rest of the message exchange details is divided between service consumer and provider.

12.3.1.1. Consumer details

The consumer information includes:

Label	Description
Host Name	Name of the service consumer machine
Host IP	IP address of the service consumer machine
Process ID	Local process ID

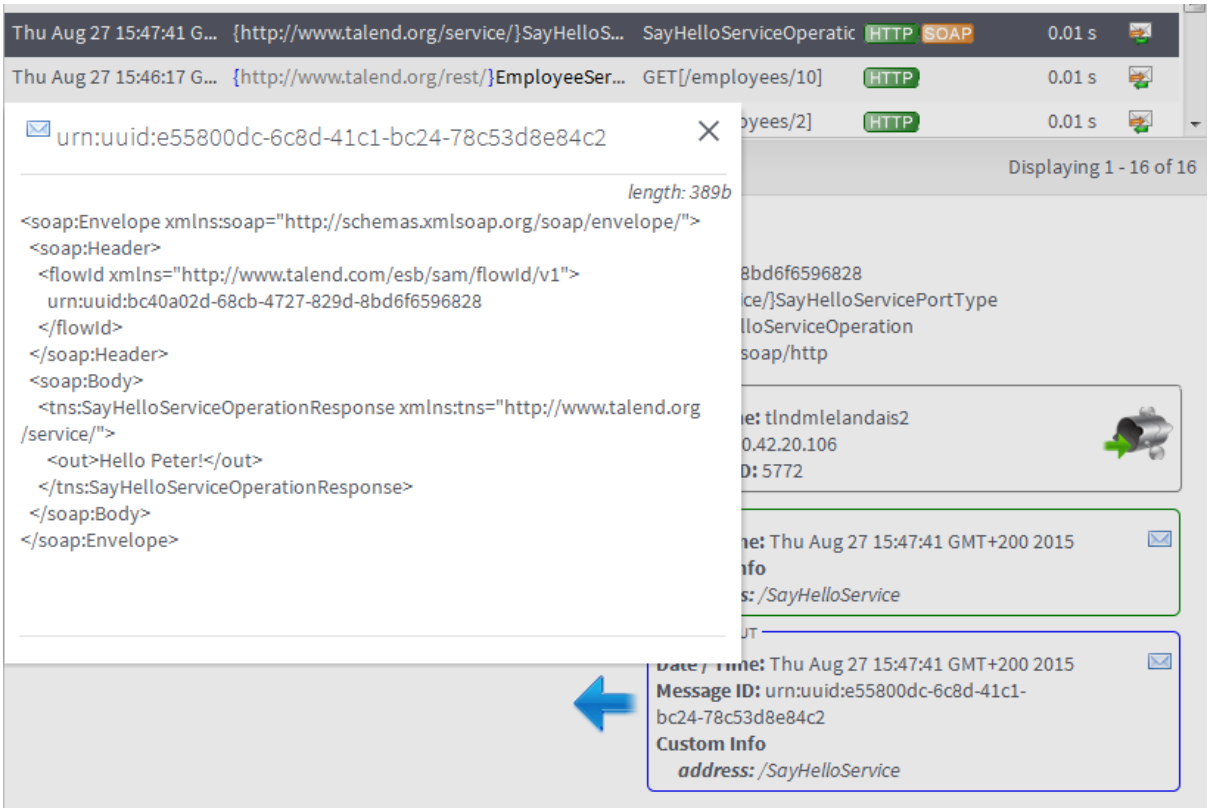
The Request OUT information includes:

Label	Description
Date/Time	Timestamp the request has been sent out by the consumer application
Message ID	UUID for the request OUT message
Principal	User name or credential where applicable. If no principal used, *null* displays.
Custom Info	Provides custom information regarding the message being handled, including consumer application name and address, and any other custom information configured/provided by the consumer. Can be used as arbitrary key for tracking purpose, such as a specific value pair associated to one particular event.

The Response/Fault IN information includes:

Label	Description
Date/Time	Timestamp the response or fault has been received by the consumer application
Message ID	UUID for the response IN message
Principal	User name or credential where applicable. If no principal used, *null* displays.
Custom Info	Provides information regarding the message being handled, including consumer application name and address, and any other custom information configured/provided by the consumer. Can be used as arbitrary key for tracking purpose, such as a specific value pair associated to one particular event.

At any time you can click the envelope docked at the top-right corner of the message metadata to open the corresponding SOAP message:



12.3.1.2. Provider details

The provider information includes:

Label	Description
Host Name	Name of the service provider machine
Host IP	IP address of the service provider machine
Process ID	Local process ID

The Request IN information includes:

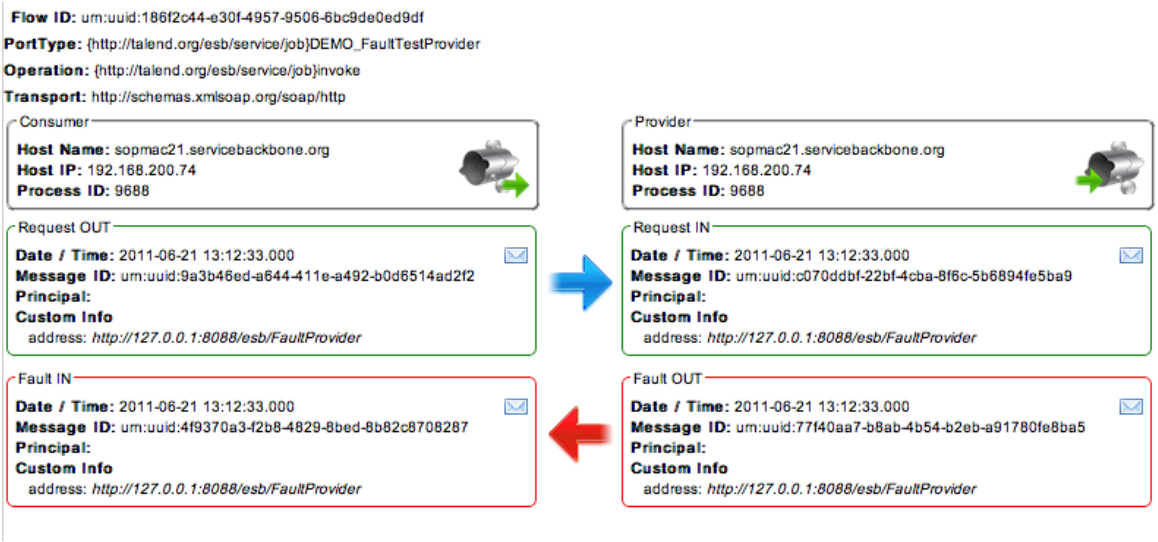
Label	Description
Date/Time	Timestamp the request has been received by the provider application
Message ID	UUID for the request IN message
Principal	User name or credential where applicable. If no principal used, *null* displays.
Custom Info	Provides information regarding the message being handled, including provider application name and address, and any other custom information configured/provided by the provider. Can be used as arbitrary key for tracking purpose, such as a specific value pair associated to one particular event.

The Response/Fault OUT information includes:

Label	Description
Date/Time	Timestamp the response or fault has been sent by the provider application
Message ID	UUID for the response OUT message
Principal	User name or credential where applicable. If no principal used, *null* displays.
Custom Info	Provides information regarding the message being handled, including provider application name and address, and any other custom information configured/provided by the provider. Can be used as arbitrary key for tracking purpose, such as a specific value pair associated to one particular event.

12.3.1.3. Fault handling

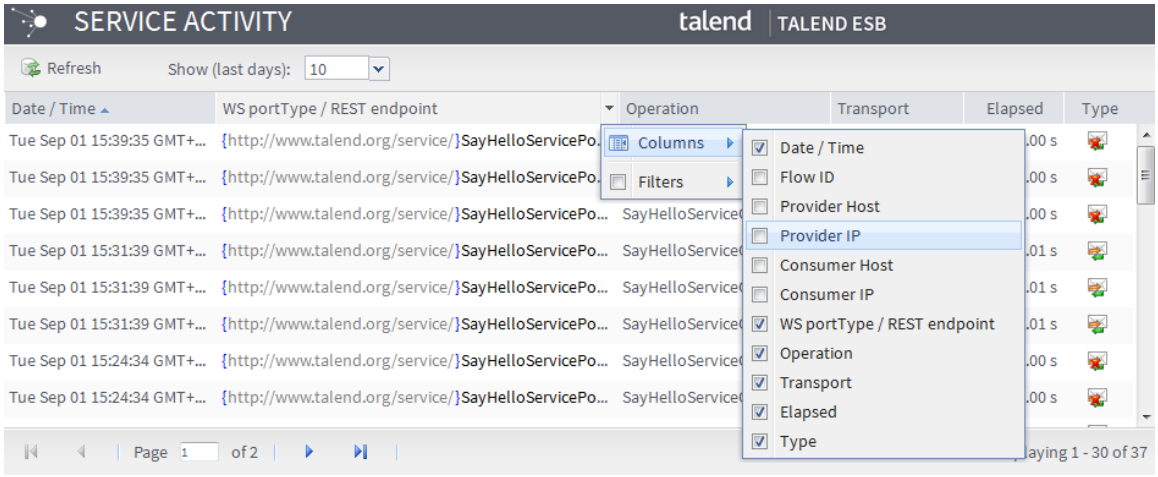
In case the service is not available or no response is sent, a fault message is generated:



12.3.2. Customizing the display of Service Activity

On the **Service Activity Monitoring** list, you can customize the list and select the columns you want to display.

1. Click the down arrow next to any column name to display the filtering options



2. Click **Columns** to display the list of available column.

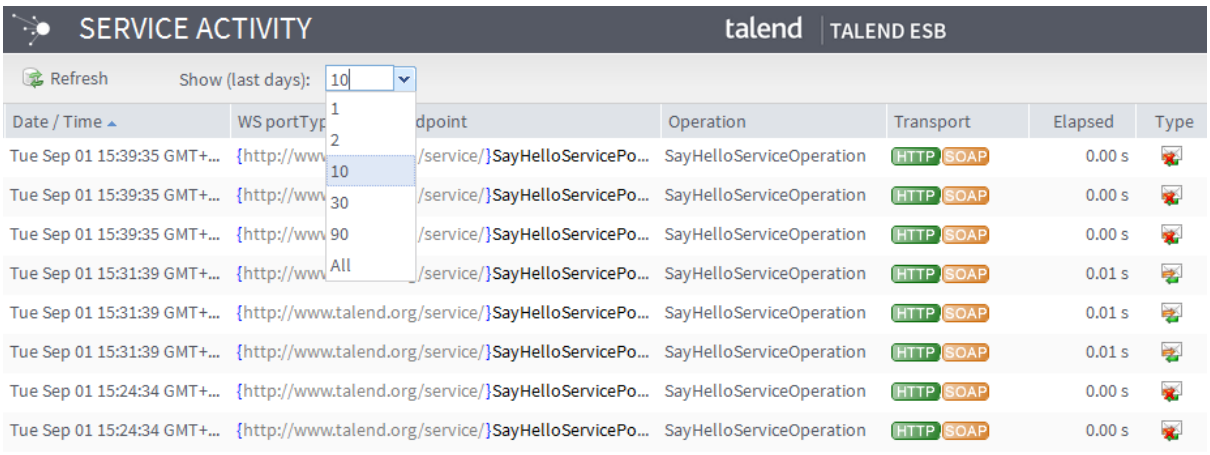
3. Select the check box next to the column name you want to display.

For information regarding the default information displayed, refer to *Monitoring the Service events*.

The **Show (last days)** filter allows you to show the events that are monitored in the specified time range.

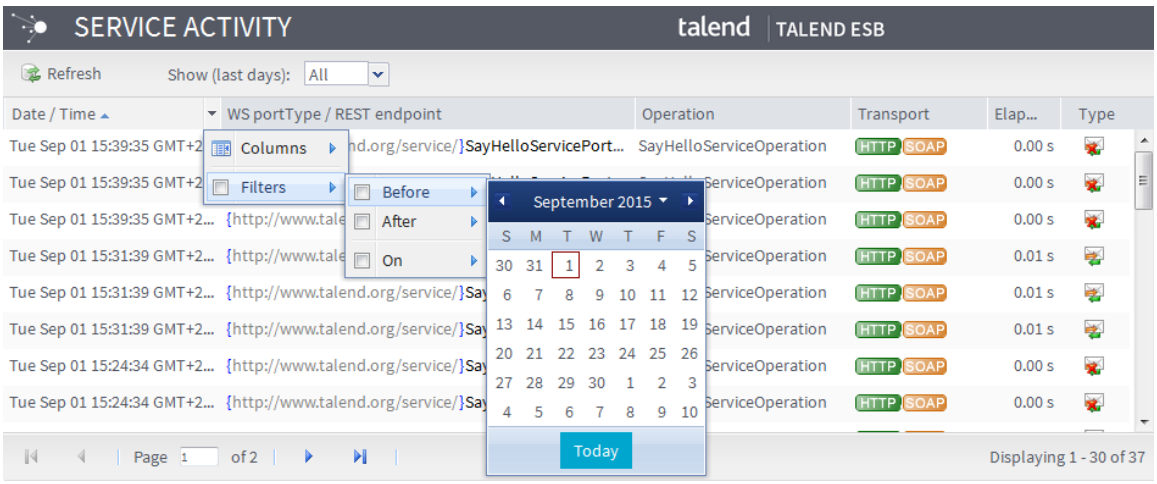
1. Click the down arrow next to the filter box.

2. Select from **1**, **2**, **10**, **30**, **90**, or **All**. Then only the events that are monitored in the selected number of days are displayed.



You can also choose to show the events that are monitored **Before**, **After**, or **On** a specific date when you select **All** in the **Show (last days)** filter:

1. Click the down arrow next to the **Date / Time** column name to display the filtering options.

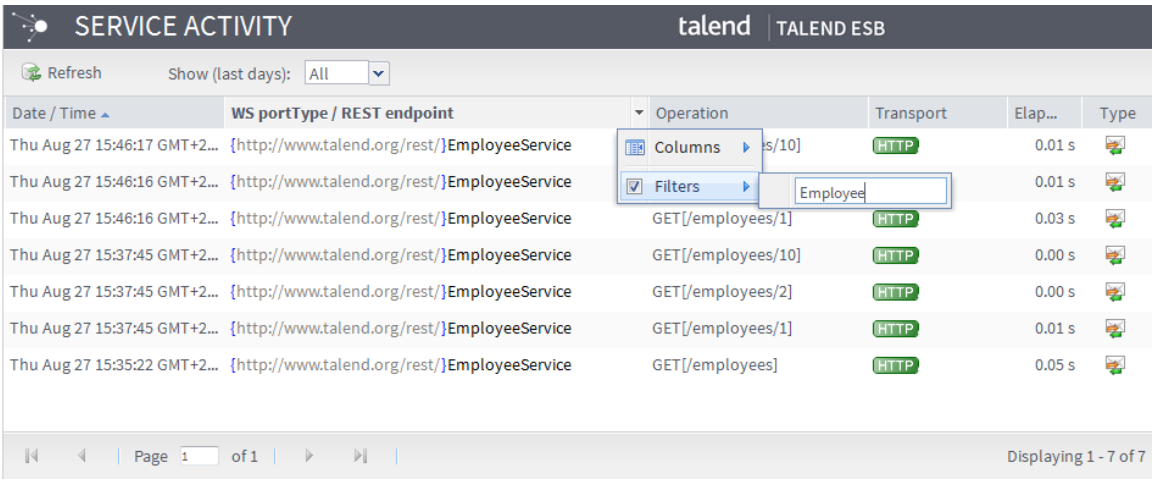


2. Click **Filters** and select the **Before**, **After**, or **On** check box. Select the date in the calender.

*This filter is only available when you select **All** in the **Show (last days)** filter.*

On the **Service Activity Monitoring** list, you can also search the event list to find a particular message exchange:

1. Click the down arrow next to any column name to display the filtering options.



2. Click **Filters** to access the input field,
3. Type in the word to filter the list on.

On the **Service Activity Monitoring** list, you can also apply a filter on the **Namespace** field.

Chapter 13. Managing ESB Resources and authorizations

The **Authorization** page helps you to authorize ESB Resources to Roles and Users defined in the Talend Identity Management Service.

To access the **Authorization** page, you need to have a licence that includes the **Authorization** component of the **ESB Infrastructure** module, and also have the relevant rights defined by the Administrator during your user account creation in *Talend Administration Center*. For more information about the modules and features ship with each license, refer to *What modules and features are available depending on your license* .

If your license allows the **ESB Infrastructure** module but it does not show in the **Menu** tree view of *Talend Administration Center*, contact your Administrator.

Using **Authorization** in *Talend Administration Center*, you will be able to:

- manage ESB Resources
- set assignments to Roles
- view Roles and Users defined in the Talend Identity Management Service

13.1. Prerequisites

In order for the Authorization page to operate, you need to have properly:

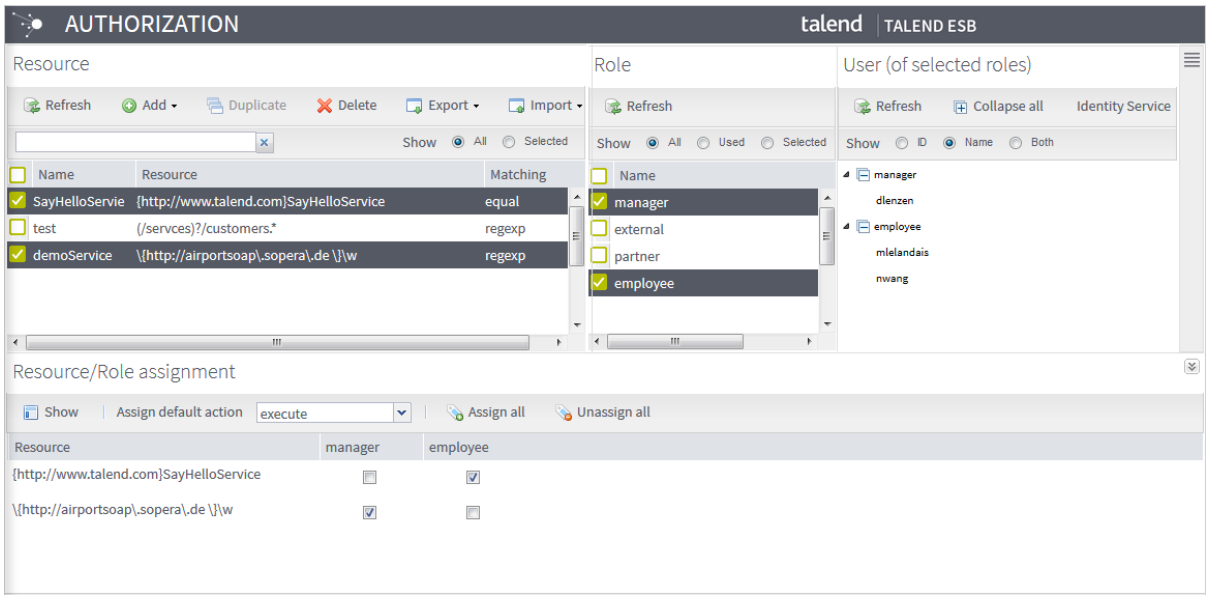
- installed Talend Identity Management Service. For more information regarding how to install Talend Identity Management Service, refer to the *Talend Installation Guide*.
- created Users and Roles in Talend Identity Management Service. For more information on how to use Talend Identity Management Service, refer to *Talend ESB Infrastructure Services Configuration Guide*.
- set up the XACML Policy registry. For how to set up the XACML Policy registry, refer to *Talend ESB Infrastructure Services Configuration Guide*.
- entered the URL and credentials to access your Identity Service, in the **Configuration** page. For more information, see Setting up the ESB Identity and Access Management.

13.2. Accessing the Authorization page

To display the **Authorization** page:

In the **Menu** tree view, expand the **ESB Infrastructure** node and click **Authorization**.

The list of Resources is displayed in the **Resource** panel. The Roles, Users and their assignment are also displayed in the **Role**, **User**, **Resource/Role assignment** panels respectively.



13.3. Authorizing the Resources

Only users that have the Operation manager role and rights can have read-write access to this page. Users that have the Designer role and rights can have a read only access. Other users don't have access to this page at all. For further information on access rights, see User roles/rights in the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the right authorization by the Administrator.

13.3.1. Managing the Resources

The Resources are listed in the Resources panel.

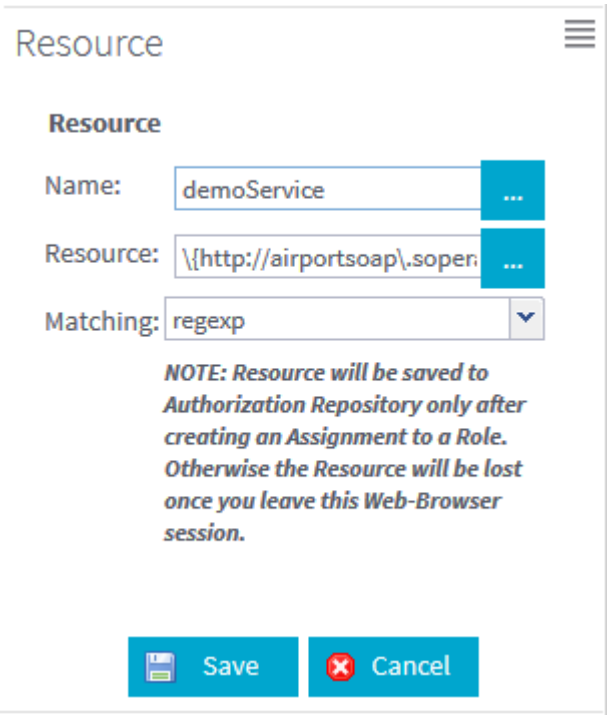
The **Resource** list provides information regarding the Resources, including:

Label	Description
Name	The name of the Resource.
Resource	The URL of the Resource, or a regular expression to be used to delimit the Resource.
Matching	Either **equal** or **regexp**.

13.3.1.1. Adding a Resource

To add an individual Resource from *Talend Administration Center*, complete the following:

1. From the toolbar on the **Resource** panel, click **Add** > **Individual Resource** to show the **Resource** configuration panel.



2. Enter the following information as necessary.

Field	Description
Name	Enter a name for the Resource. You can also click **[...]** to view or edit the name if it is too long and can not be fully shown in the field.

Resource	Enter the URL of the Resource. You can also click **[...]** to view or edit the URL if it is too long and can not be fully shown in the field.
	• For SOAP services, enter the URL in the `{targetNamespace}operationName` format.
	  • If you select **equal** in the **Matching** list, enter the full URL. For example, `{http://airportsoap.sopera.de}getAirportInformationByISOCountryCode`.
	  • If you select **regexp** in the **Matching** list, enter a regular expression to be used to delimit the Resource. For example, `\{http://airportsoap\.sopera\.de\}\w`.

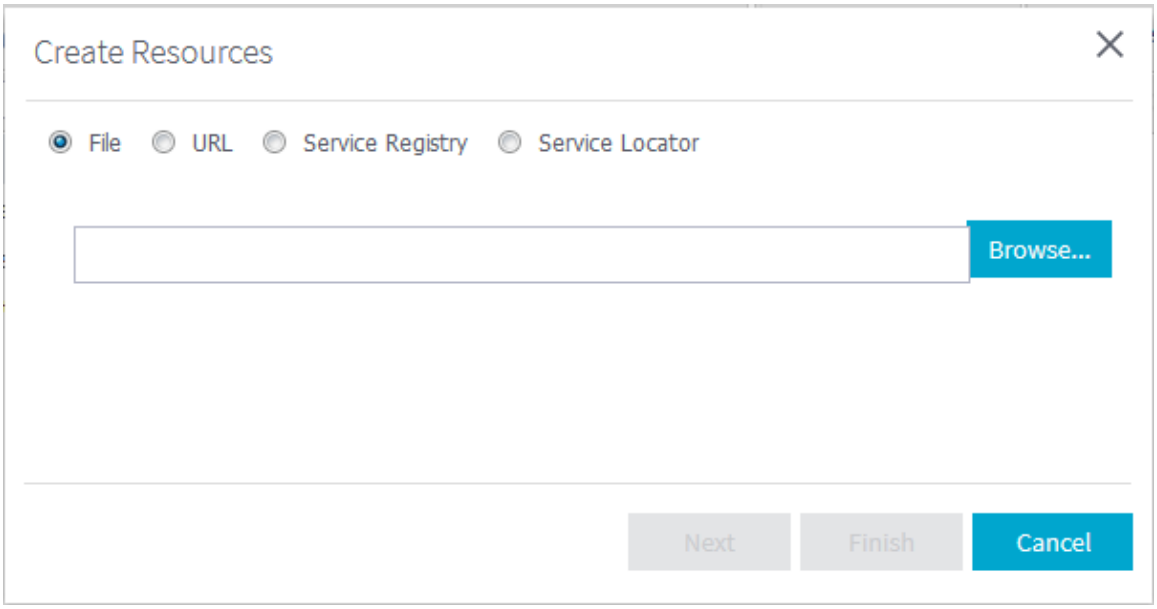
Field	Description
	• For REST services, enter the URL in the `Endpoint/URI pattern` format. It is recommended to use the **regexp** matching condition for REST services. Select **regexp** in the **Matching** list. In the **Resource** field, enter a regular expression to be used to delimit the Resource, for example, `(/services)?/numberservice/doubleit/(\d)*`.
Matching	Select from **equal** and **regexp**.

3. Click **Save** to validate the configuration or **Cancel** to cancel the creation of the Resource.

The Resource will be added to the Authorization repository only after creating an assignment to a Role. Otherwise the Resource will be lost once you leave this Web-Browser session.

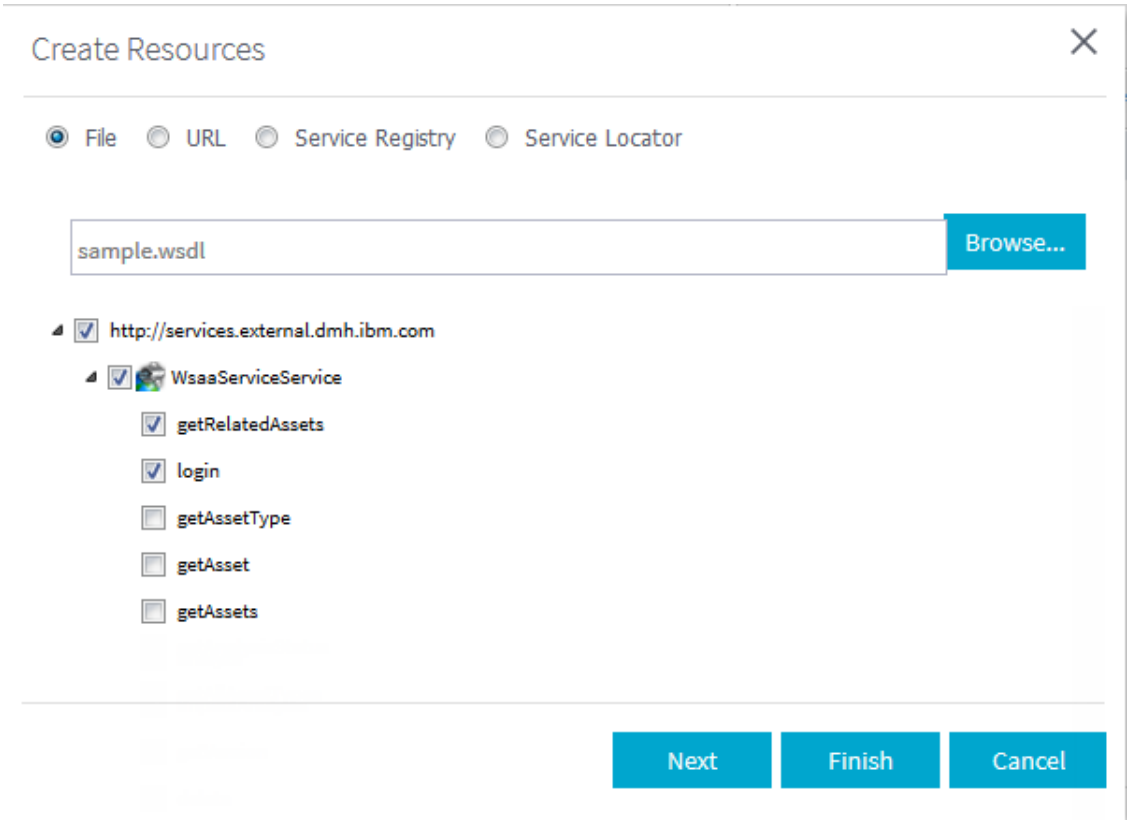
You can also add multiple SOAP Resources using the **[Create Resources]** wizard. To do so:

1. From the toolbar on the **Resource** panel, click **Add** > **SOAP Resource** to show the **[Create Resources]** wizard.

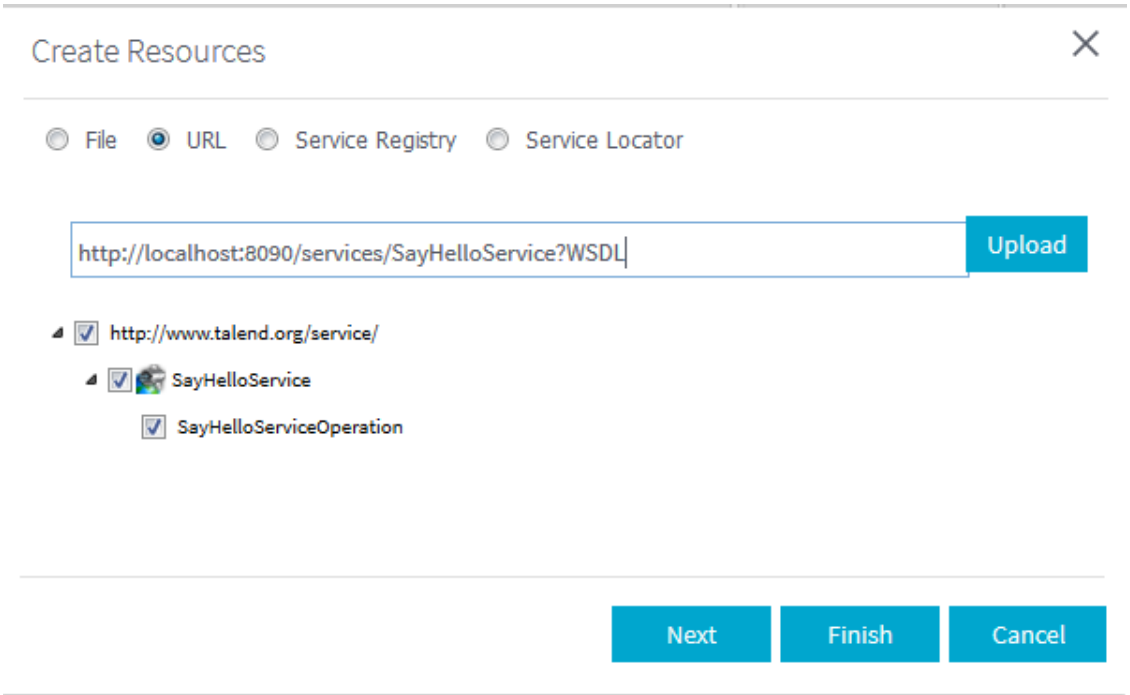


2. Select to create the Resource from a **File**, **URL**, **Service Registry**, or **Service Locator**. You can create multiple Resources from these options.

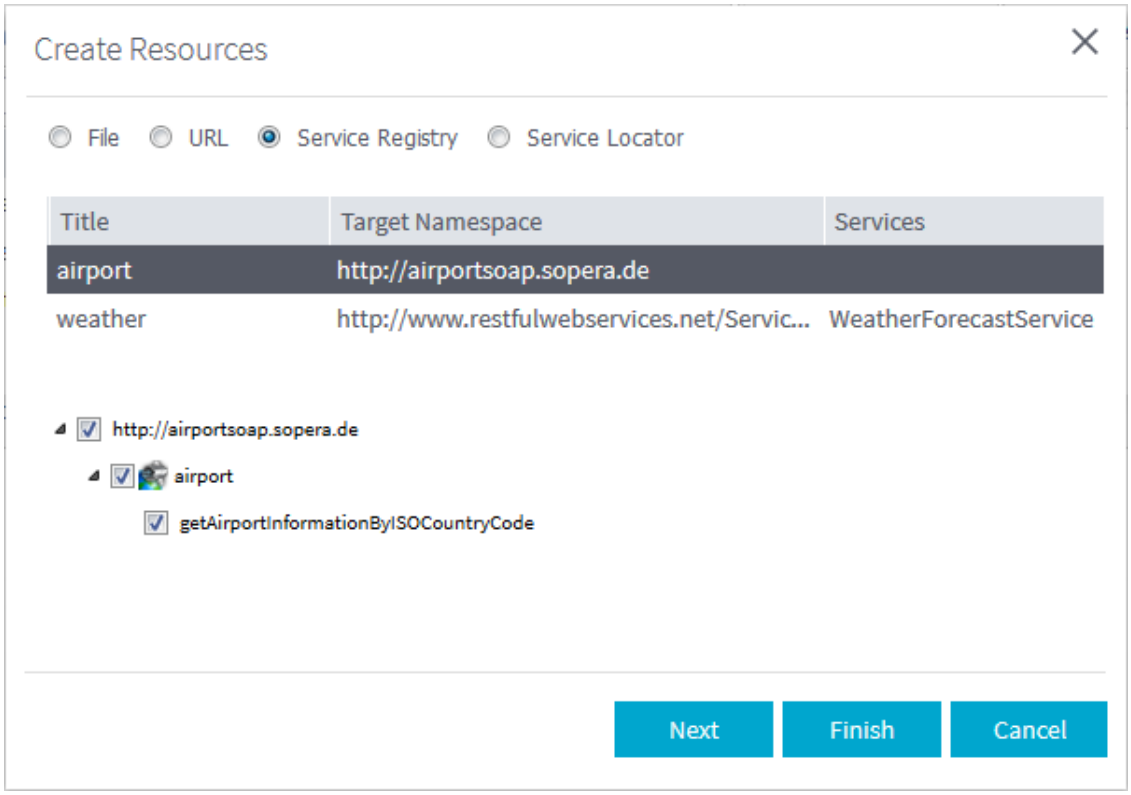
   • Select **File** to add a Resource from a WSDL file. Click **Browse** to browse to the WSDL file. Its WSDL tree structure appears in the wizard. Select one or more operations in the WSDL tree structure that you want to add.



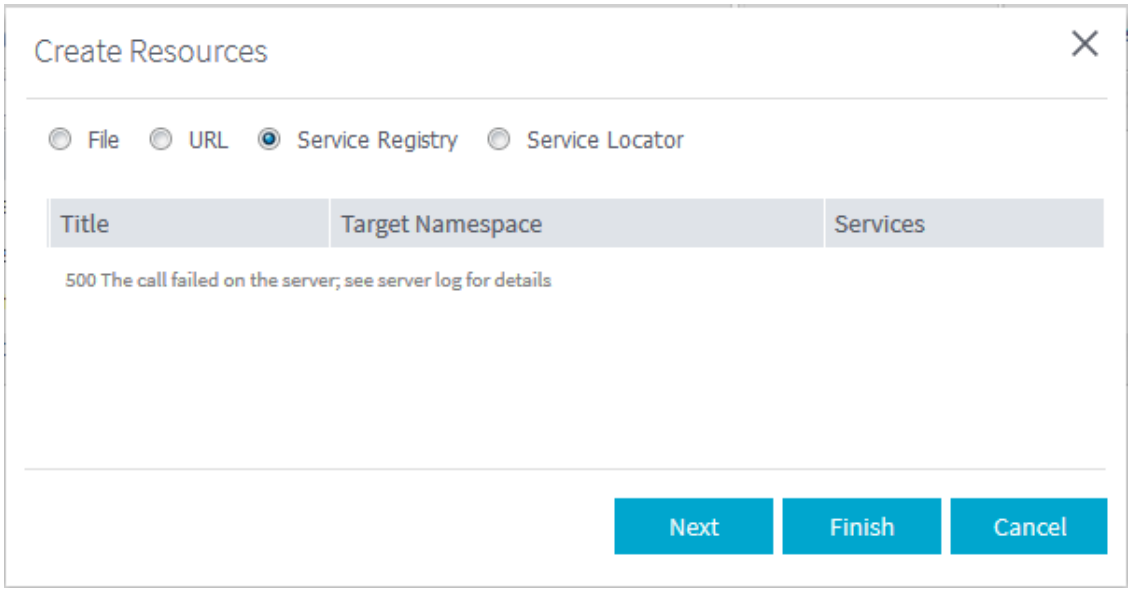
- Select **URL** to add a Resource from a URL. Enter the URL of a SOAP service and click **Upload**. The WSDL tree structure appears in the wizard. Select one or more operations in the WSDL tree structure that you want to add.



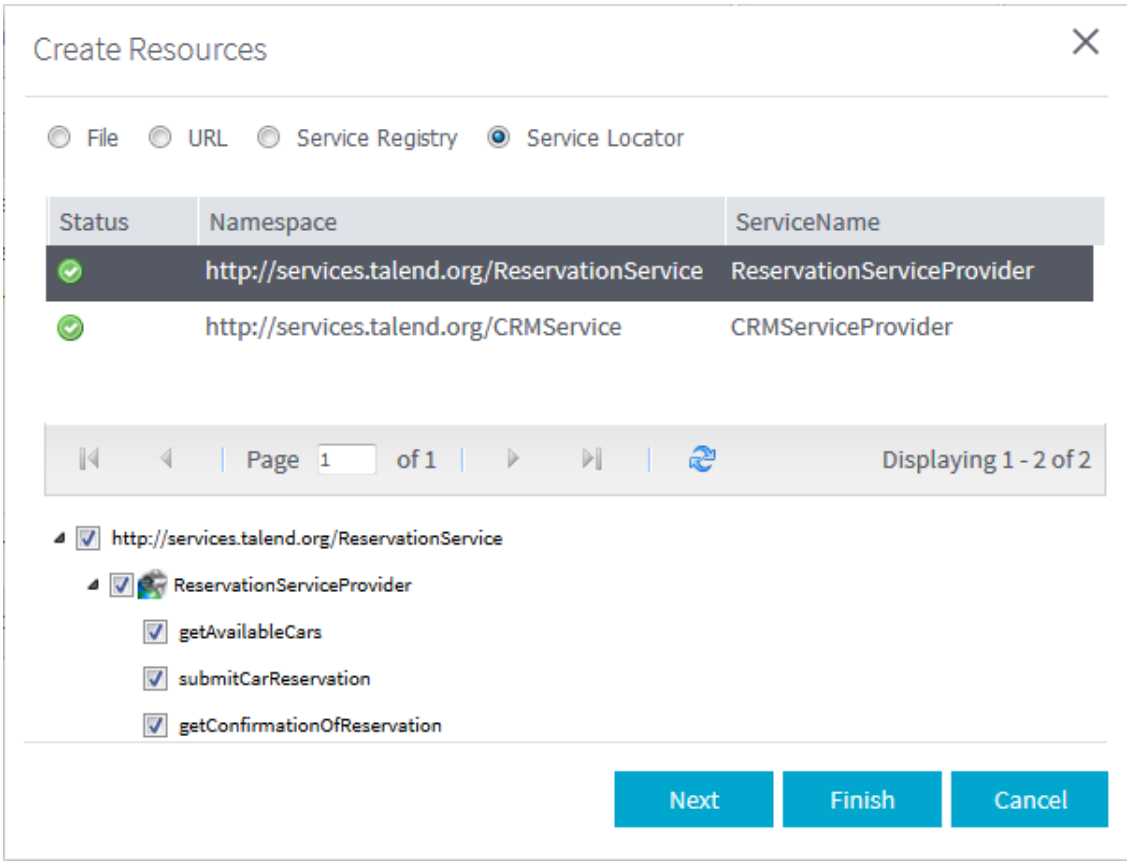
- Select **Service Registry** to add a Resource from the Service Registry. The services that are registered in the Service Registry are listed in the wizard. Select the one you want to add. Its WSDL tree structure appears in the wizard. Select one or more operations in the WSDL tree structure that you want to add.



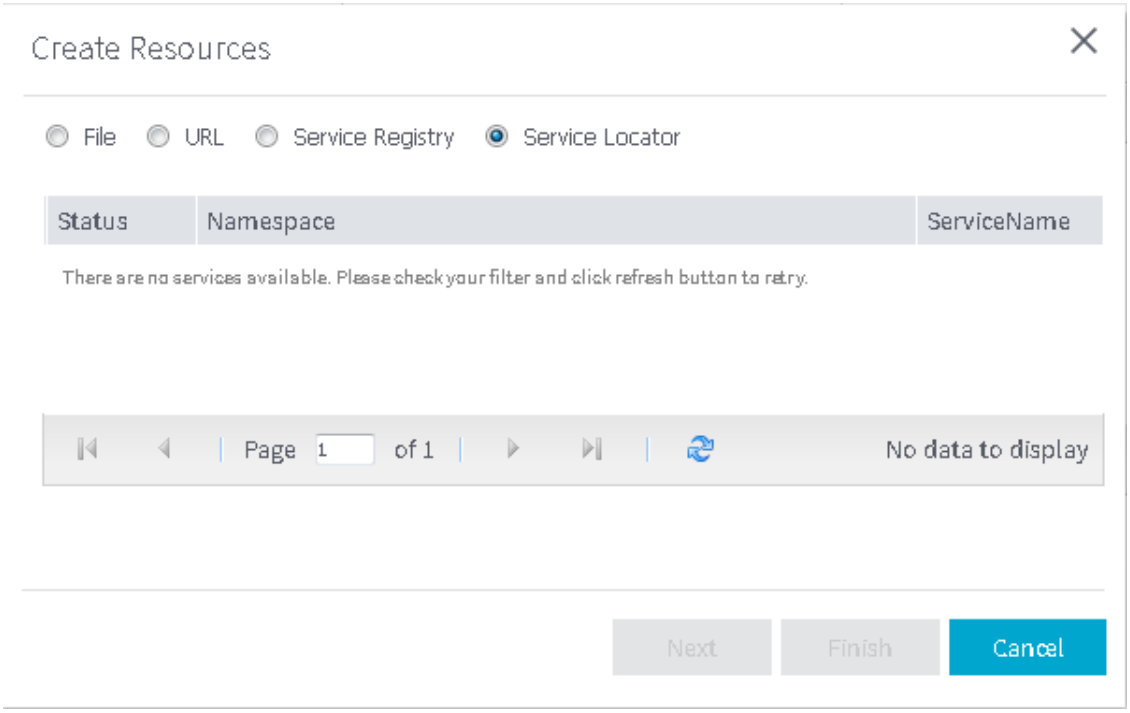
If the Service Registry is not available, you will get an error message in the wizard.



- Select **Service Locator** to add a Resource from the Service Locator. The services that are monitored in the Service Locator are listed in the wizard. Select the SOAP service you want to add. Its WSDL tree structure appears in the wizard. Select one or more operations in the WSDL tree structure that you want to add. Note that REST services and unavailable SOAP services are greyed out in the list and cannot be selected. To refresh the list, click the button.



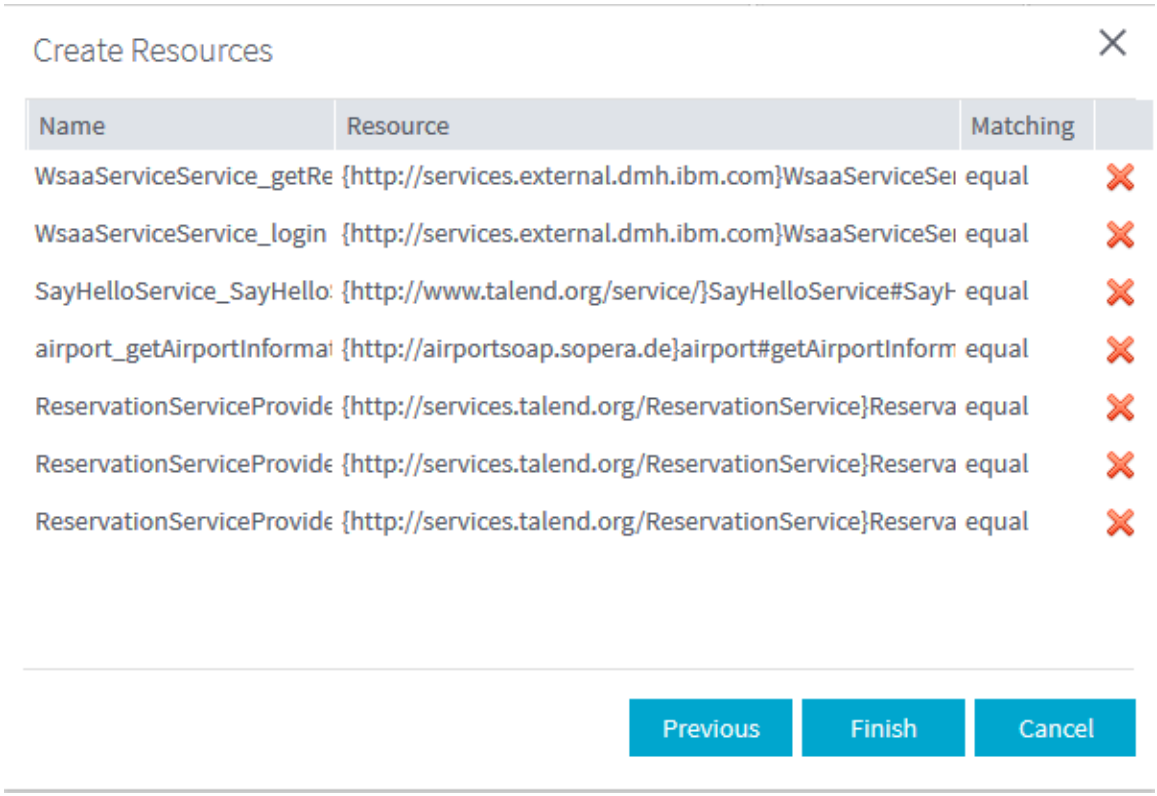
If the Service Locator is not available, you will get an error message in the wizard.



3. Once you have selected one or more services or operations, you can click **Finish** to validate the creation and close the wizard or click **Next** to go to the next step.

*The **Next** and **Finish** buttons are disabled if no operation is selected.*

4. The operations that you have selected from **File**, **URL**, **Service R**, or **SL** are listed in the wizard.



You can edit the name and the URL of the Resources.

The matching criteria is **equal** default. You can change it to **regexp** in the **Matching** list. When you do this change, a dialog box appears prompting if you would like to change the URL of the Resource to a regular expression `\{\w*\}<ServiceName>#\{\w*\}<OperationName>` to be used to delimit the Resource. Click **Yes** to accept it or **No** to ignore it.

Click the button to remove a Resource.

5. Click **Previous** to add more Resources or click **Finish** to validate the creation and close the wizard.

The Resource will be added to the Authorization repository only after creating an assignment to a Role. Otherwise the Resource will be lost once you leave this Web-Browser session.

13.3.1.2. Duplicating a Resource

To avoid creating a new Resource from scratch, you can duplicate an existing one and work around its metadata to have a new Resource in the list.

To duplicate a Resource, do the following:

1. In the list of Resources, select the Resource you want to duplicate.
2. On the toolbar, click **Duplicate**. The configuration panel to the right shows the metadata of the selected Resource.
3. Modify the metadata as needed in order to create a new Resource.
4. Click **Save** to validate the operation or **Cancel** to cancel it.

   The new Resource is listed in the **Resource** panel.

13.3.1.3. Deleting a Resource

To delete one or more Resources from the Resource list, do the following:

1. In the list of Resources, select one or more Resources you want to delete.
2. On the toolbar, click **Delete**. A confirmation dialog box opens, prompting you to confirm that you want to delete all assignments related to the Resource(s).
3. Click **OK** to remove the Resource from the Resource list.

13.3.1.4. Exporting a Resource

Talend Administration Center allows you to export the Resources in the current instance of the Administration Center to XML files. To do so:

1. In the list of Resources, select one or more Resources that you want to export.
2. On the toolbar, click **Export** > **Resources**. The Web browser will prompt you to open or save the selected Resources depending on your Web browser configuration.

   Note that the **Export** > **Resources** menu is disabled if no Resource is selected.

13.3.1.5. Importing a Resource

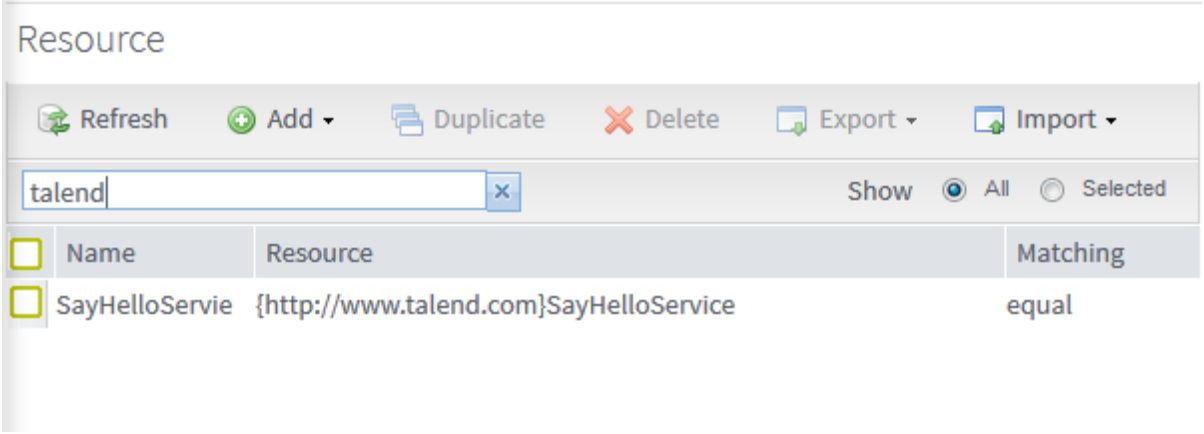
You can import Resources that you have already created with previous release of the Administration Center. To do so:

1. In the Resource panel, click **Import** > **Resources** on the toolbar.
2. The **[Select a file to upload]** wizard appears. Click **Browse** to browse to the file that you want to import the Resources from and click **Import**.

   If the file contains Resources that already exist in the **Resources** panel, you will get a message showing the duplicate Resources and that they are not imported. Click **OK** to accept it. The other Resources in the file are imported.

13.3.1.6. Searching a Resource

If you have a great number of Resources and want to filter them, you can do so by typing key words in the filters box. Only the Resources whose name or address contains the text you entered in the filter box will be displayed.



To remove the filter, clear the filter box or click the button next to it.

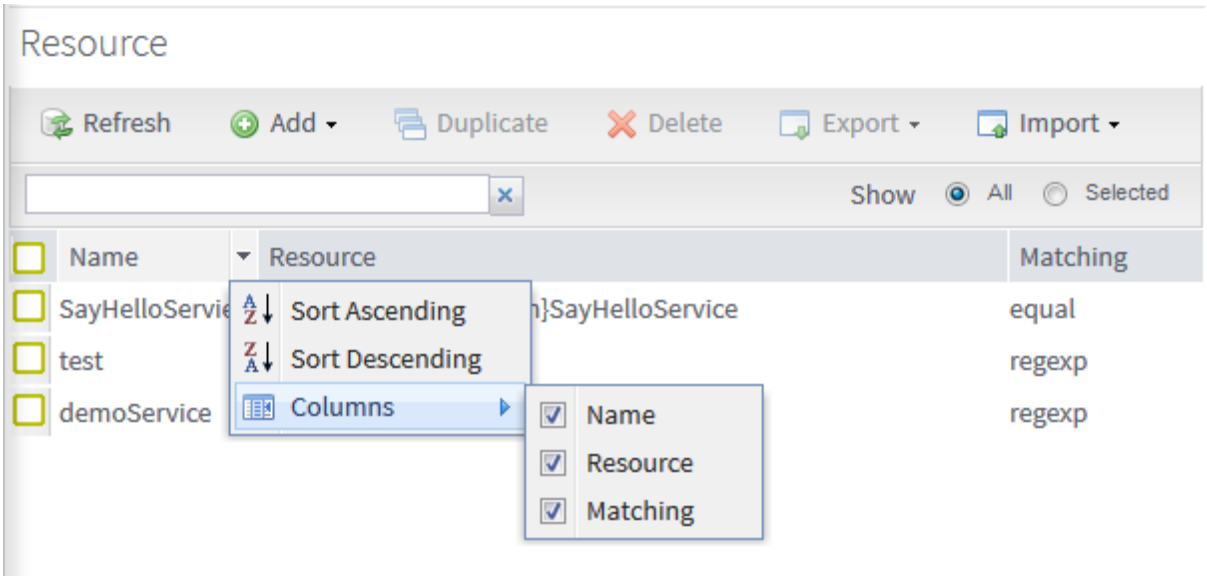
13.3.1.7. Customizing the display of the Resource list

You can customize the Resource list view to show/hide one or more columns in the Resource list and arrange the list order.

1. On the Resource list, put the pointer on a column name and click the drop-down arrow.
2. In the drop-down list, select:

Item	Description
Sort Ascending	Arranges the list in an ascending order
Sort Descending	Arranges the list in an descending order
Columns	Displays a drop-down list where you can select/clear the check box next to the column(s) you want to show/hide

The figure below shows the list view options in the drop-down list.



You can also choose to show all or the selected Resources by clicking the **All** or **Selected** radio button.

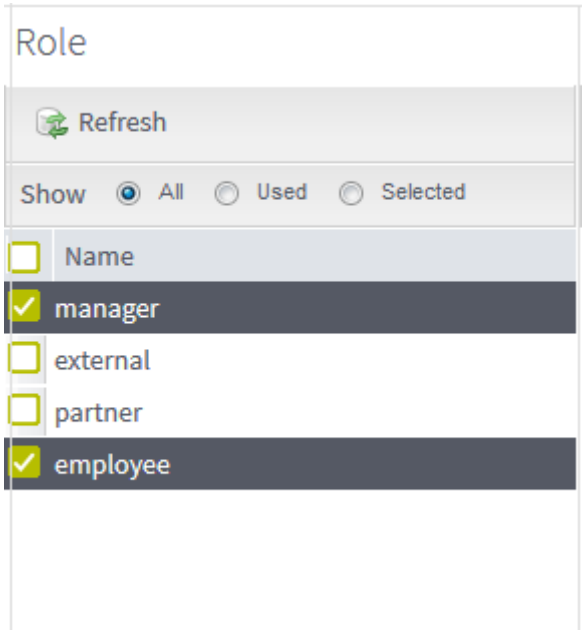
13.3.1.8. Refreshing the Resource list

To refresh the Resource list, click the **Refresh** button on the toolbar.

13.3.2. Viewing Roles and Users

The Roles and the Users stored in the Identity Management service can be viewed in the **Role** and **User** panel respectively.

For more information about how to create Roles, Users, and how to assign a Role to a User, refer to the chapter about the Talend Identity Management Service in *Talend ESB Infrastructure Services Configuration Guide*. For how to connect to the Identity Management service, see Setting up the ESB Identity and Access Management.

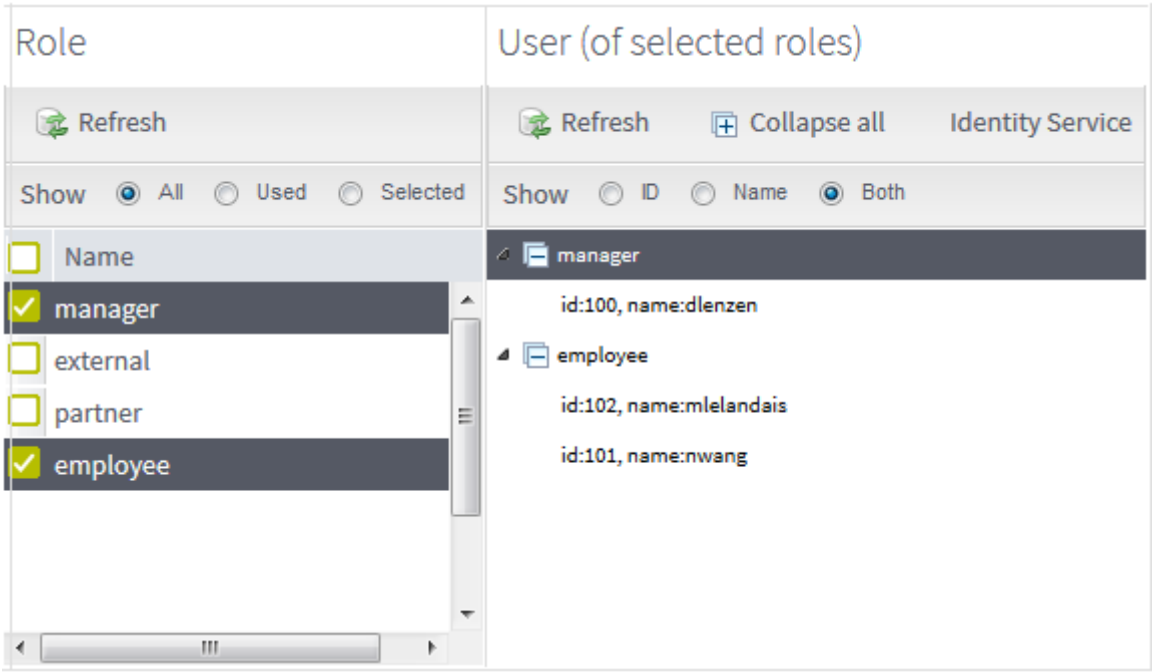


You can choose to view **All**, **Used**, or **Selected** Roles in the Role panel. By default, when you open the **Authorization** page, this view is populated with **Used** roles.

- **All**: all Roles stored in the Identity Management service
- **Used**: Roles that have been set assignments to
- **Selected**: Role that are selected

To refresh the Role list, click the **Refresh** button on the toolbar.

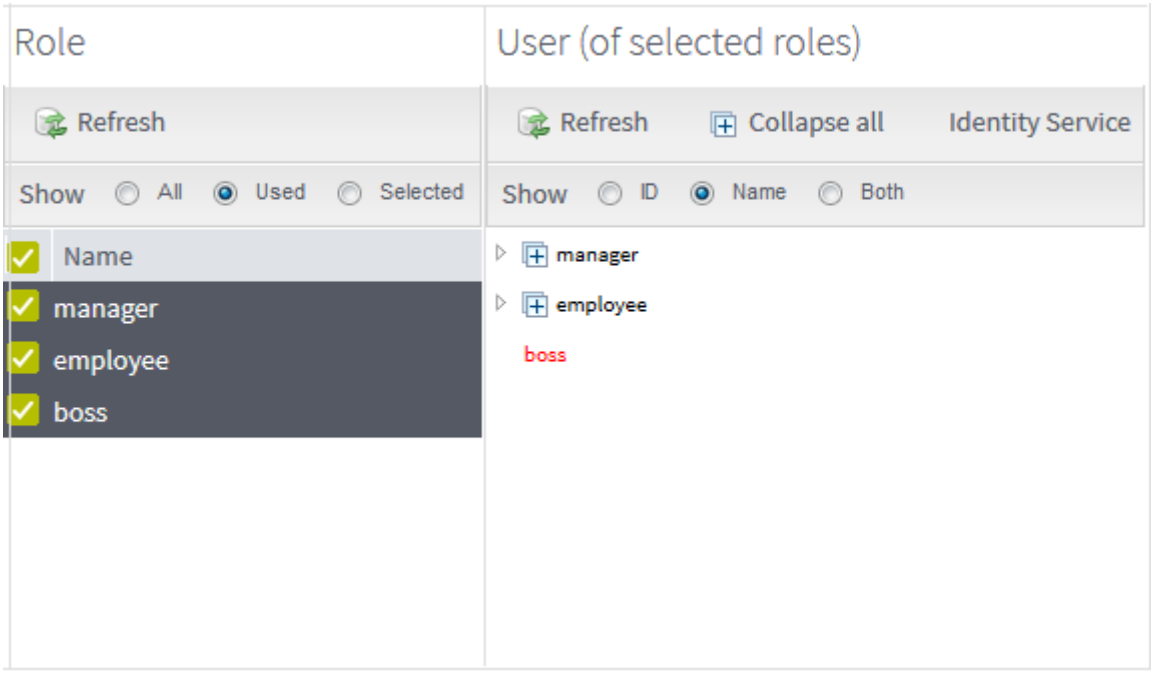
When you select one or more roles in the Role panel, the users of the selected Role(s) are shown in the **User** panel under the node of the corresponding Role. By default, the Role nodes are collapsed. Expand each node to get the list of Users for the Role. Click **Collapse all** to collapse all the nodes.



You can choose to show the **ID**, **Name**, or **Both** of them in the User panel.

To refresh the User list, click the **Refresh** button on the toolbar.

If a Role that has been set assignments to is removed in the Identity Management service, it will show in red in the User Panel.

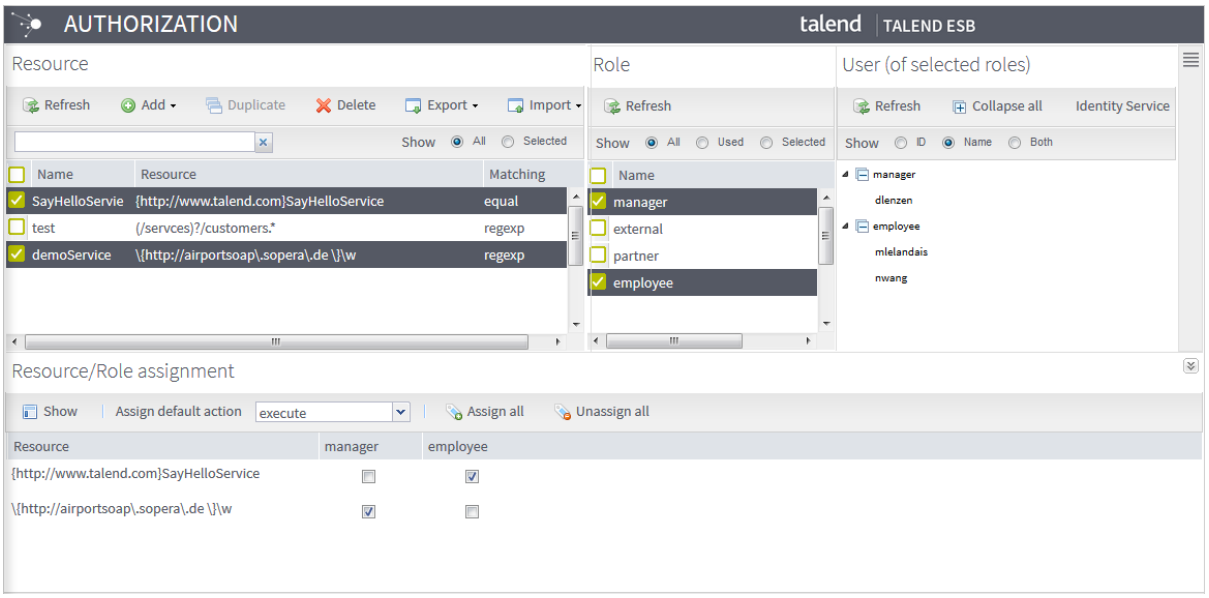


By clicking the **Identity Service** button, the *Talend Administration Center* allows you to open the Talend Identity Management Service Web Console in another window.

13.3.3. Managing assignments

The **Resource/Role assignment** area is located in the lower half of the **Authorization** page, allowing you to assign an action to selected Roles for selected Resources. You can also export the assignments created in the current instance of the Administration Center, or import assignments you already created with previous release of the Administration Center.

13.3.3.1. Setting privileges to Roles



To set privileges to Roles:

1. Select the Resources and Roles that you want to set assignments in the Resource panel and Role panel respectively.

2. Click the **Show** button to show the selected Resources and Roles in the assignment table.

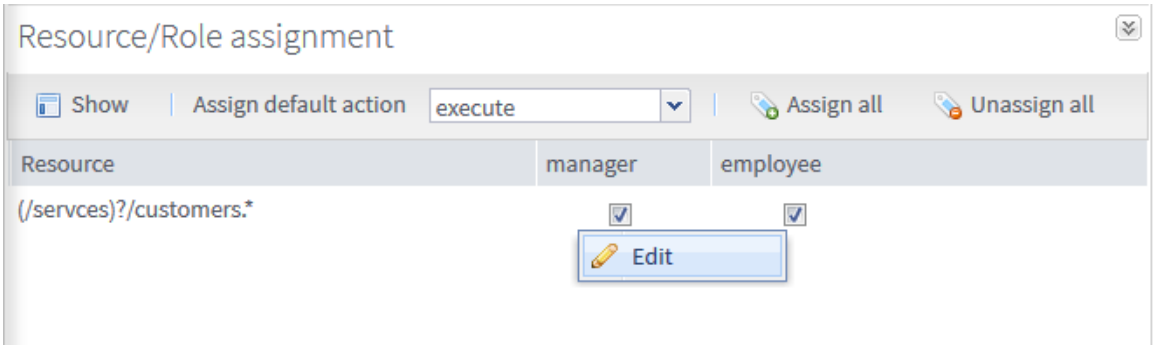
   The assignment table can show only five columns of the roles at the most.

3. Select an action from the **Assign default action** list that you want to assign to selected Roles for selected Resources. The actions include **execute** for SOAP services, and **GET**, **POST**, **PUT**, **DELETE**, **HEADER** for REST services.

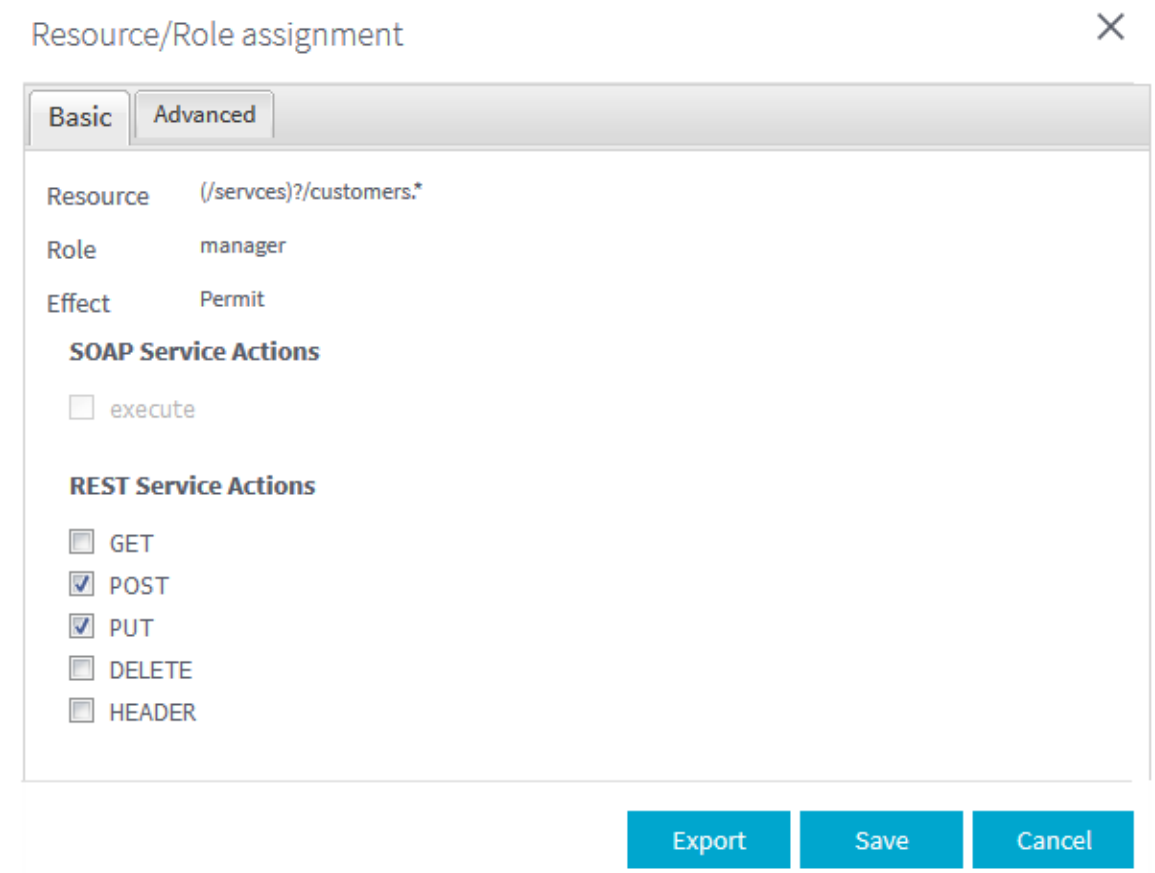
4. Select the check box as needed to set an assignment to a Role for a Resource. You can also click the **Assign all** button to set the assignments to all the Roles for all Resources in the table.

   To unset an assignment, simply clear the check box for the pair of Resource and Role, or click the **Unassign all** button to unset the assignments for all pairs.

5. Once an assignment is set, you can edit it by right-clicking the corresponding check box in the assignment table and click **Edit**.

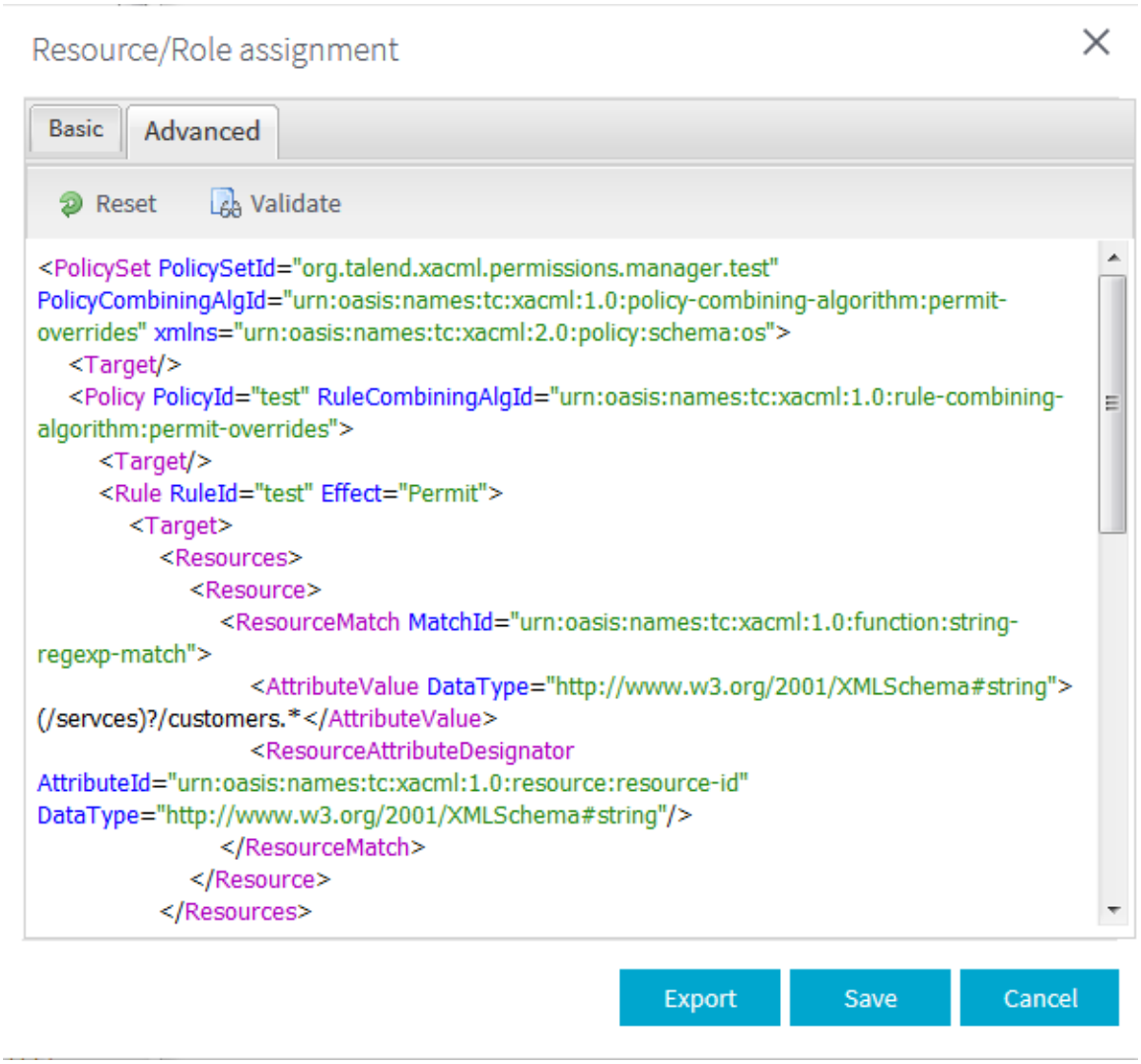
   The **[Resource/Role assignment]** dialog box appears allowing you to change permissions.



The corresponding Role and Resource is shown in the **Basic** tab of the dialog box. The actions available for SOAP and REST services are listed separately. Select or clear the check boxes as needed to change the assignment to the Role. Click **Save** to validate the change or **Cancel** to cancel it.

*You can not unset all actions to a Role in the **[Resource/Role assignment]** dialog box. There should be at least one action selected before you can save it.*

When you clear a permission check box for a pair of Resource and Role in the assignment table, you remove all actions assigned to the Role, not just the shown default action.



In the **Advanced** tab of the dialog box, the underlying XACML Permission Policy is shown. You can edit the policy by changing the effect, actions, algorithm and so on. Click the **Validate** button to validate the policy. Click **Reset** to go back to the original policy. For more information about XACML used by ESB Authorization, see *Talend ESB Infrastructure Services Configuration Guide*. Click **Save** to save your changes or **Cancel** to cancel it.

You can also export this assignment to an XML file by clicking the **Export** button. The Web browser will prompt you to open or save the assignment depending on your Web browser configuration. For more information about how to export assignments, see *Exporting assignments*.

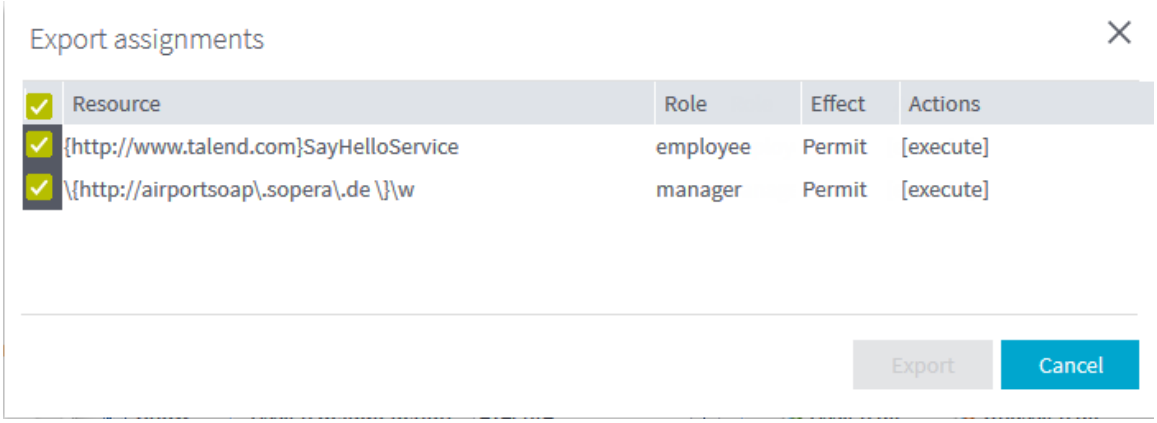
13.3.3.2. Exporting assignments

Talend Administration Center allows you to export the assignments you created in the current instance of the Administration Center to XML files. To do so:

1. Select one or more Resources and Roles, the assignments between which you want to export, and click **Export** > **Resources** in the toolbar.

   Note that the **Export** > **Resources** menu is disabled if no Resource or no Role is selected.

2. The **[Export assignments]** window appears. The assignments between all the pairs of the selected Resources and Roles are shown in the window. By default, all the assignments are selected. Clear the assignments that you do not want to export.



3. Click **Export** to export the selected assignments. The Web browser will prompt you to open or save the selected assignments depending on your Web browser configuration.

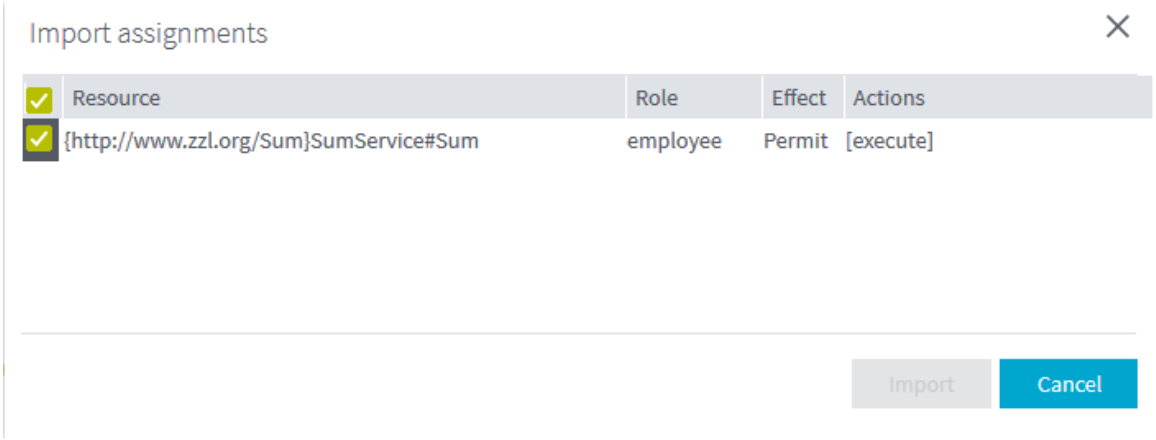
13.3.3.3. Importing assignments

You can import assignments that you have already created with previous release of the Administration Center. To do so:

1. In the **Resource** panel, click **Import** > **Assignments** in the toolbar.

2. The **[Select a file to upload]** wizard appears. Click **Browse** to browse to the file that you want to import the assignments from. Click **Import** to import the assignments in the file and close the wizard or click **Select** to go to the next step. Note that duplicates of existing assignments in this page will not be imported.

3. The assignments in the file you browse to are listed in the **[Import assignments]** wizard. Duplicates of existing assignments in this page are not listed.



Select the assignments in the list that you want to import. Click **Import** to import the selected assignments and close the wizard or **Cancel** to cancel it.

Chapter 14. Managing Services and Policies

The **Service Registry** provides a repository for storing service WSDL and WS-Policy files. It helps maintain consistency for your services and the Policy-based security and reliability requirements for them.

To access the **Service Registry** page, you need to have a licence that includes the **Service Registry** component of the **ESB Infrastructure** module, and also have the relevant rights defined by the Administrator during your user account creation in *Talend Administration Center*. For more information about the modules and features ship with each license, refer to *What modules and features are available depending on your license* .

If your license allows the **ESB Infrastructure** module but it does not show in the **Menu** tree view of *Talend Administration Center*, contact your Administrator.

Using **Service Registry** in *Talend Administration Center*, you will be able to:

- manage services
- manage policies
- manage the relations between services and policies

14.1. Prerequisites

In order for the **Service Registry** page to operate, you need to:

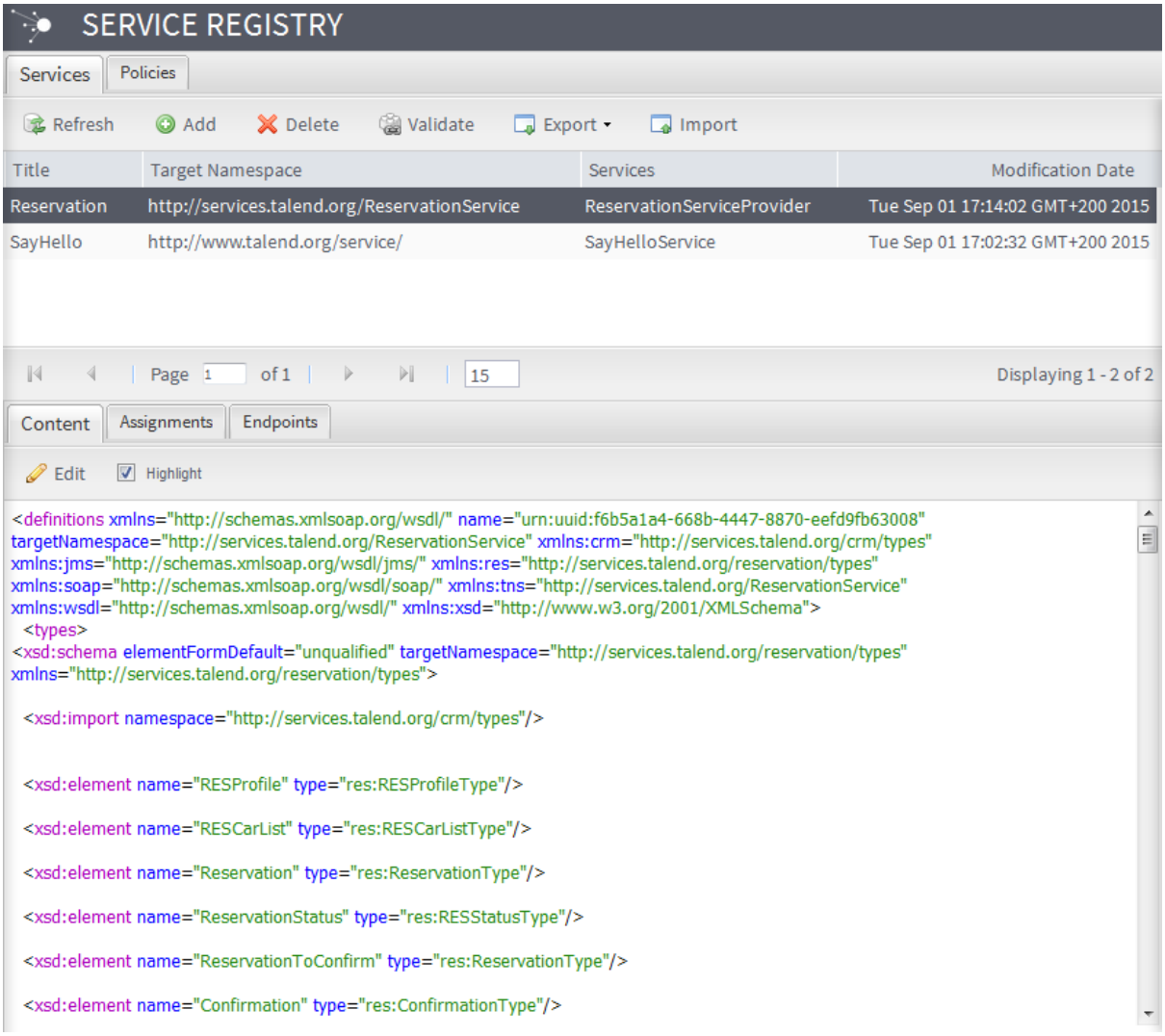
- have entered the URL and credentials to access the Service Registry interface, in the **Configuration** page. For more information, see Setting up the ESB Service Registry,
- have properly set up the registry and the Service Registry feature. For more information on how to set up the Service Registry within Talend ESB, refer to *Talend ESB Infrastructure Services Configuration Guide*.

14.2. Accessing the Service Registry page

To display the **Service Registry** page:

In the **Menu** tree view, expand the **ESB Infrastructure** node and click **Service Registry**.

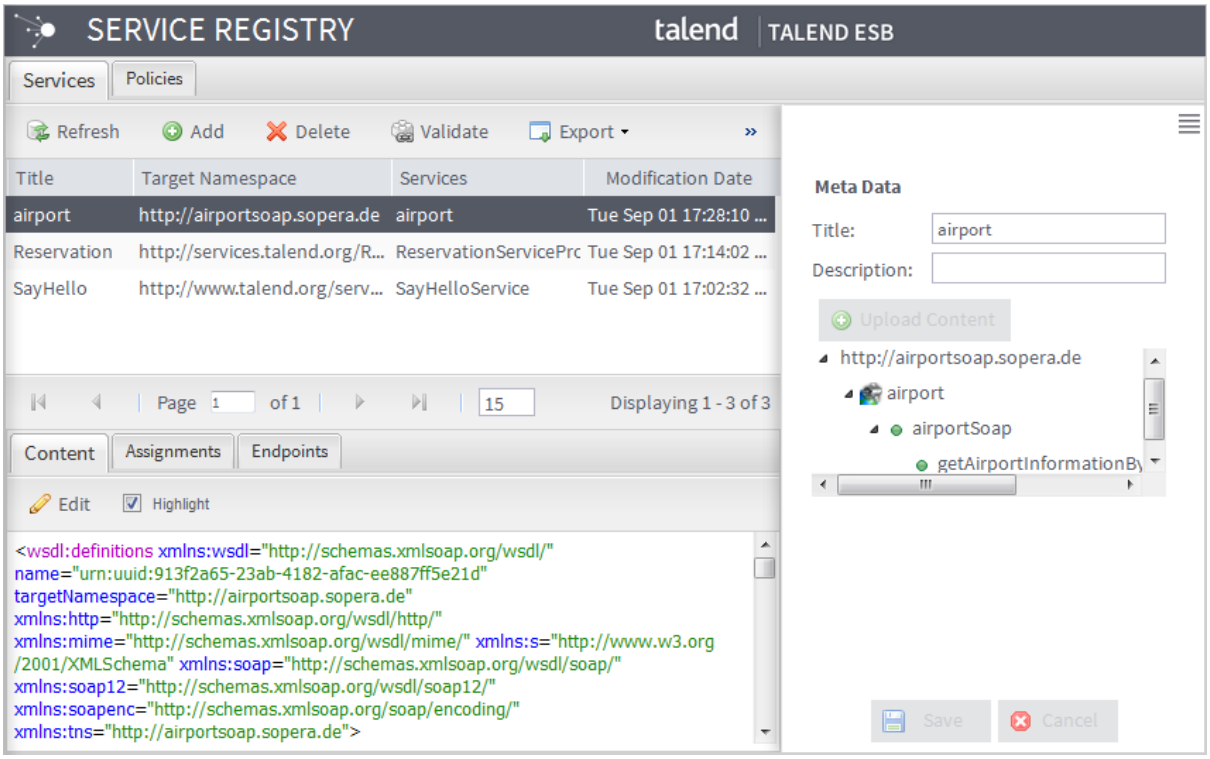
The list of services and policies is displayed in the **Services** and **Policies** tab respectively. The content and relations of the services and policies are shown on the lower half of the **Service Registry** page.



14.3. Registering the services

Only users that have the Operation manager role and rights can have read-write access to this page. Users that have the Designer role and rights can have a read only access. Other users don't have access to this page at all. For further information on access rights, see User roles/rights in the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the right authorization by the Administrator.

The below figure illustrates an example of the **Service Registry** page.



14.3.1. Managing services

The services are listed in the **Services** tab, providing information regarding the services, including:

Label	Description
Title	The name that identifies the service in the Administration Center.
Target Namespace	The namespace of the web service.
Services	The name of the service.
Modified Date	The date on which the service is modified.

Some extra columns are hidden by default but can be added in the table. For more information, see *Customizing the display of the service list*.

These extra columns provide the following information:

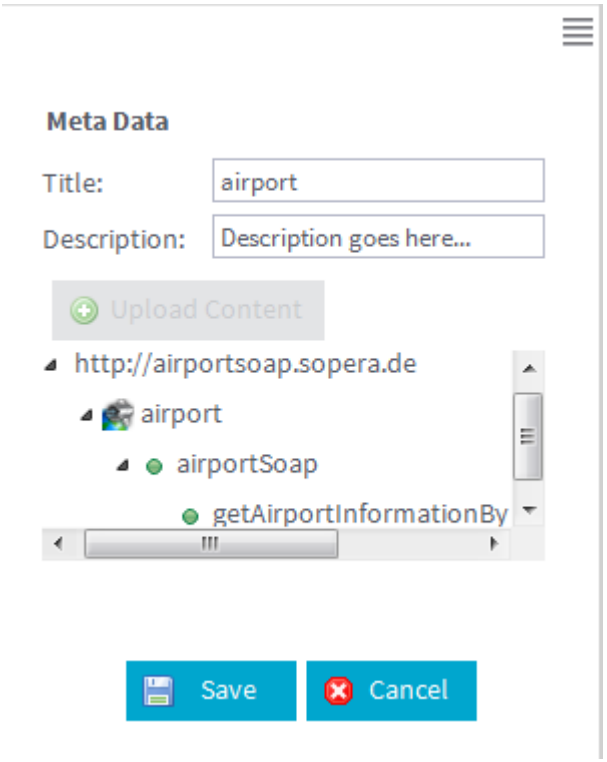
Label	Description
ID	Unique identifier of the service given by the Administration Center automatically.
Create Date	The date on which the service is created.

You can export the services listed in this tab to XML files, or import services that you already created with previous release of the Administration Center. For more information, see *Exporting and importing services and polices*.

14.3.1.1. Adding a service

To add a service from *Talend Administration Center*, complete the following:

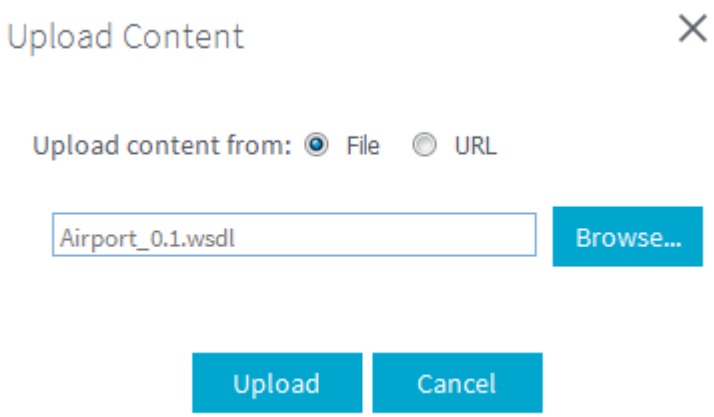
1. From the toolbar on the **Service** tab, click **Add** to show the configuration panel to the right.



2. Enter the following information as necessary.

Field	Description
Title	Type in a name that identifies the service in the Administration Center.
Description	Provide any useful information regarding the service.

3. Click the **Upload content** button upload the content of a WSDL file. The **[Upload Content]** dialog box appears, allowing you to upload the content from a **File** or a **URL**.



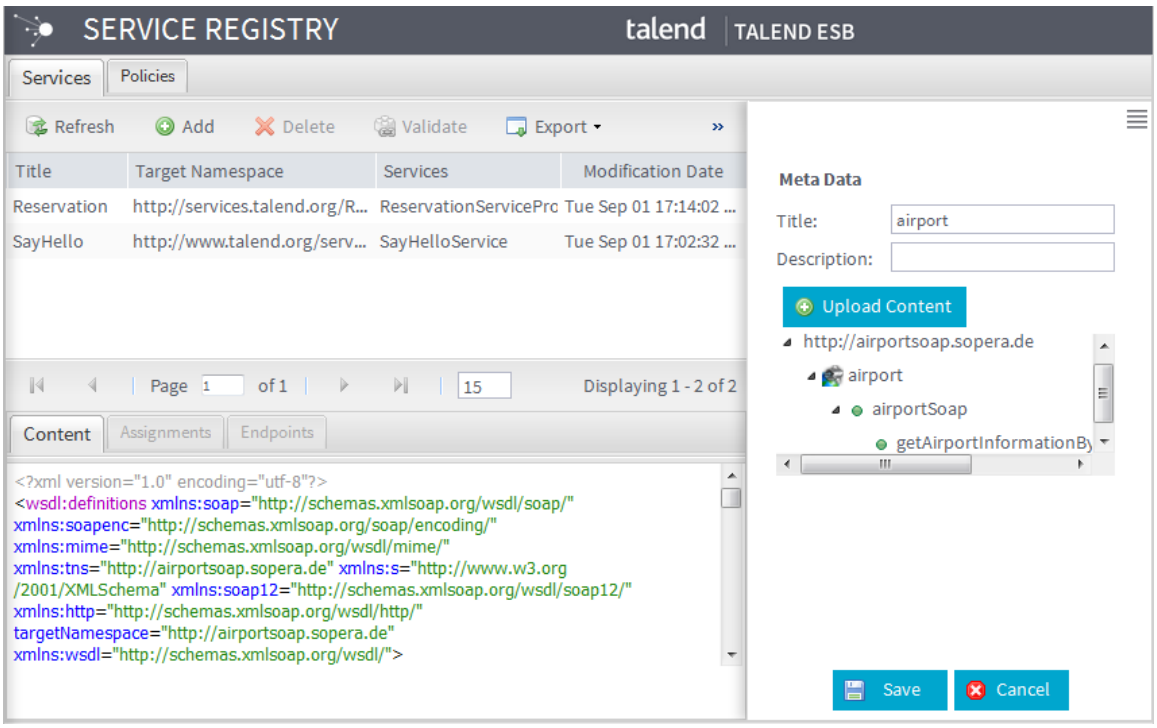
To upload the content from a file, browse to or enter the path where the file is located.

To upload the content from a URL, enter the URL in the field.

Click **Upload** to upload the content or **Cancel** to cancel it.

4. The WSDL tree structure appears in the configuration panel. The content of it is shown in the **Content** tab on the lower half of the **Service Registry** page.

   Click **Save** to validate the creation or **Cancel** to cancel it.



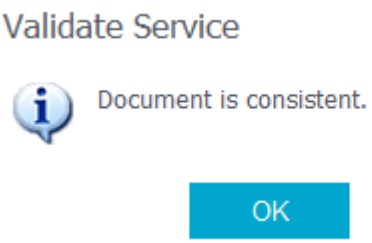
14.3.1.2. Validating a service

You can check the consistency of the service WSDL file and the policy files assigned to the service using the **Validate** button on the tool bar. For more information about how to assign a policy to a service, see *Assigning a policy to a service*.

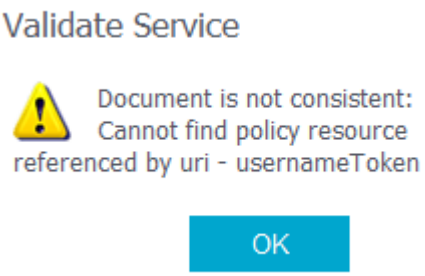
To validate a service:

1. In the list of services, select the one you want to validate.
2. On the toolbar, click **Validate**. A dialog box appears, showing if the service WSDL file and the assigned policy files are consistent, and if the assigned policies are available.

   The following screenshot shows the result of a consistent service:



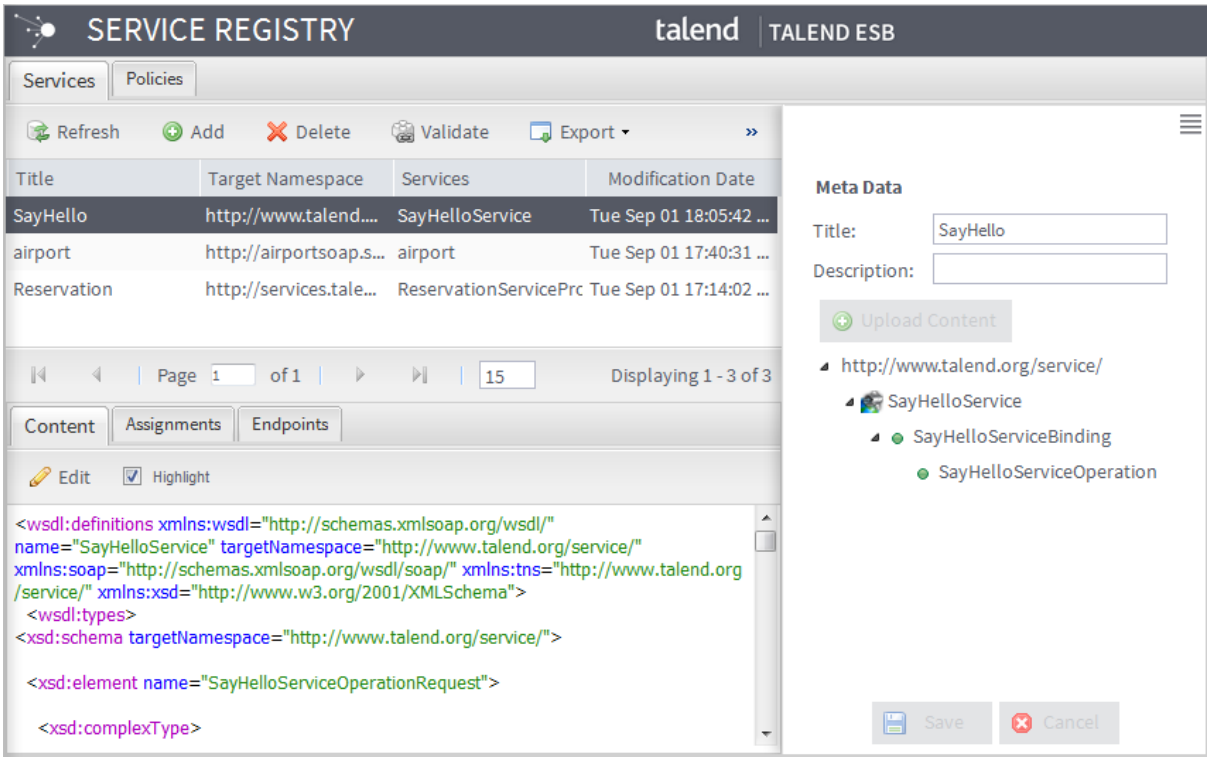
Below is an example result of an inconsistent service due to the unavailability of the assigned policy.



3. Click **OK** to close the dialog box.

14.3.1.3. Editing a service

On the lower half of the **Service Registry** page, you can edit the service WSDL file in the **Content** tab or change the endpoint of the service in the **Endpoints** tab.

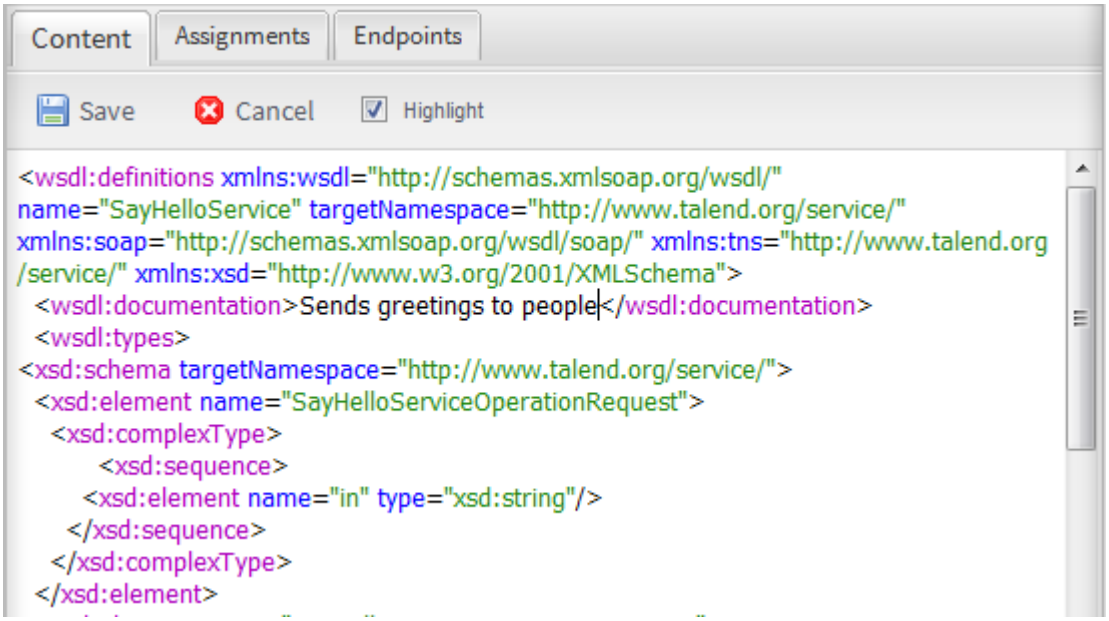


Editing the service WSDL file

1. Select a service in the service list and click the **Content** tab on the lower half of the **Service Registry** page. The service WSDL file is shown in the **Content** tab.

   You can select the **Highlight** check box to highlight the WSDL element names.

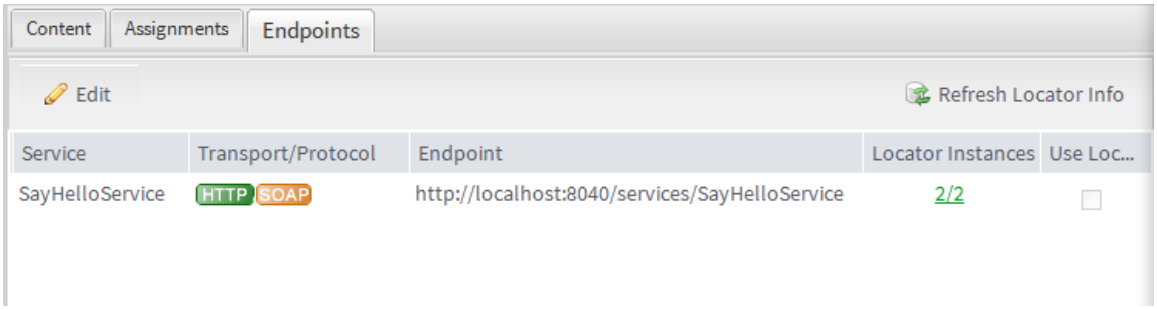
2. Click **Edit** in the **Content** tab and edit the content as needed.



3. Click **Save** to save your changes or **Cancel** to cancel it.

Changing the service endpoints

1. Select a service in the service list and click the **Endpoints** tab on the lower half of the **Service Registry** page.



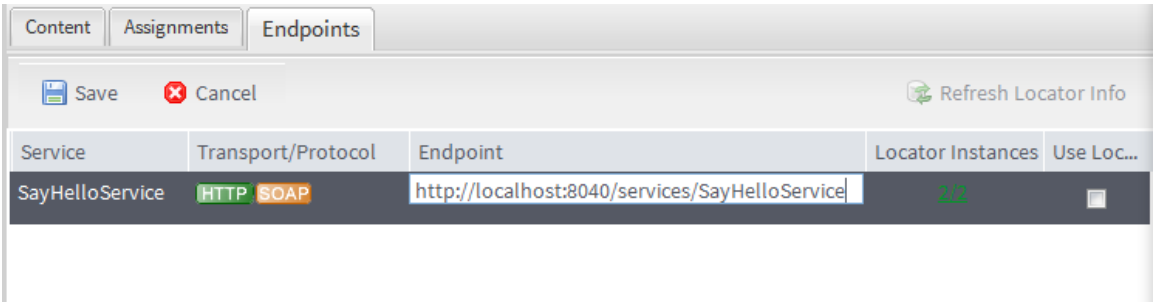
The service is shown in the **Endpoints** tab, providing the following information regarding the service:

Label	Description
Service	The name of the service.
Port	The port of the service.
Transport/Protocol	Type of transport and protocol used for service messaging.
Endpoint	IP address of the web service.
Locator Instances	The number of the active endpoints out of the total number of endpoints monitored by the Service Locator. Depending on the result returned from the Service Locator, the number is shown in different colours. For example: • `-/-` in grey indicates that the Service Locator is not available. • `0/0` in grey indicates that neither active nor inactive endpoint instance is found in the Service Locator. • `0/2` or `0/3` in grey indicates that no endpoint is active out of the total `2` or `3` endpoints. • `1/2` or `2/3` in blue indicates that `1` or `2` endpoints are active out of the total `2` or `3` endpoints. • `2/2` or `3/3` in green indicates that all the endpoints are active. Clicking the value in this column redirects you to the Service Locator page with the result filtered by `{targetNamespace}serviceName` of the selected service.

Label	Description
	You can update the status of all the endpoints for the selected service by clicking the **Refresh Locator Info** button.
Use Locator	Select this check box to change the endpoint to a locator endpoint if this service is monitored by the Service Locator.

You can customize the display of the service list view to show/hide one or more columns or arrange the list in a certain order. For more information, see *Customizing the display of the service list*.

2. Click **Edit** in the **Endpoints** tab and edit the service endpoints as needed.



3. Click **Save** to save your changes or **Cancel** to cancel it.

14.3.1.4. Deleting a service

To delete a service from the service list, do the following:

1. In the list of services, select one you want to delete.
2. On the toolbar, click **Delete**. A confirmation dialog box appears.
3. Click **OK** to remove the service from the service list.

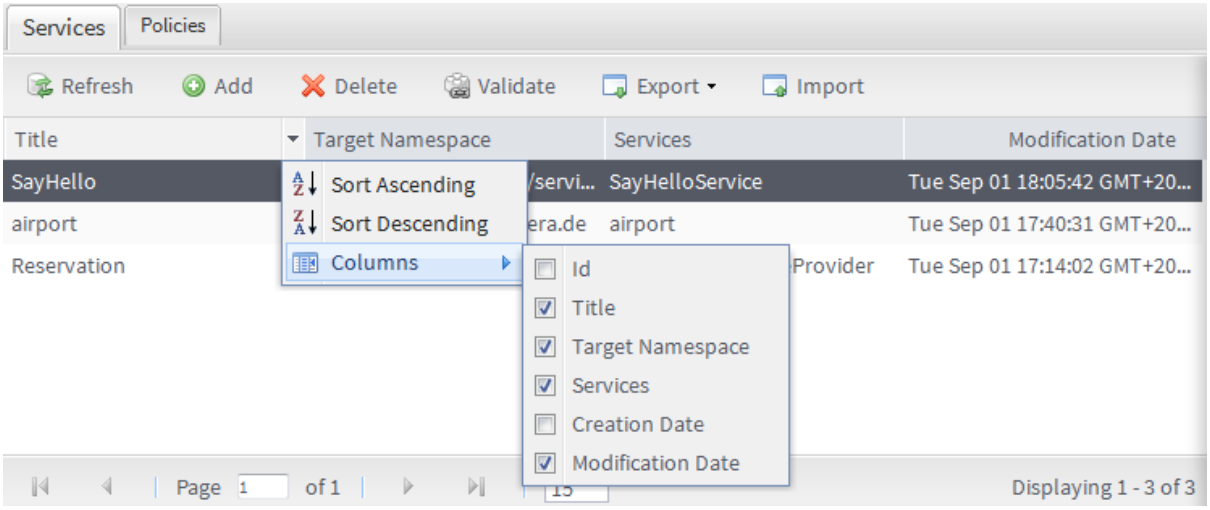
14.3.1.5. Customizing the display of the service list

You can customize the service list view to show/hide one or more columns in the service list.

1. On the service list, put the pointer on a column name and click the drop-down arrow.
2. In the drop-down list, select:

Item	Description
Sort Ascending	Arranges the list in an ascending order.
Sort Descending	Arranges the list in an descending order.
Columns	Displays a drop-down list where you can select/clear the check box next to the column(s) you want to show/hide.

The figure below shows the list view options in the drop-down list.



Once you have customized the list, your preferences are saved (columns, order or width) and kept even after the page is refreshed.

14.3.1.6. Refreshing the service list

To refresh the service list, click the **Refresh** button on the toolbar.

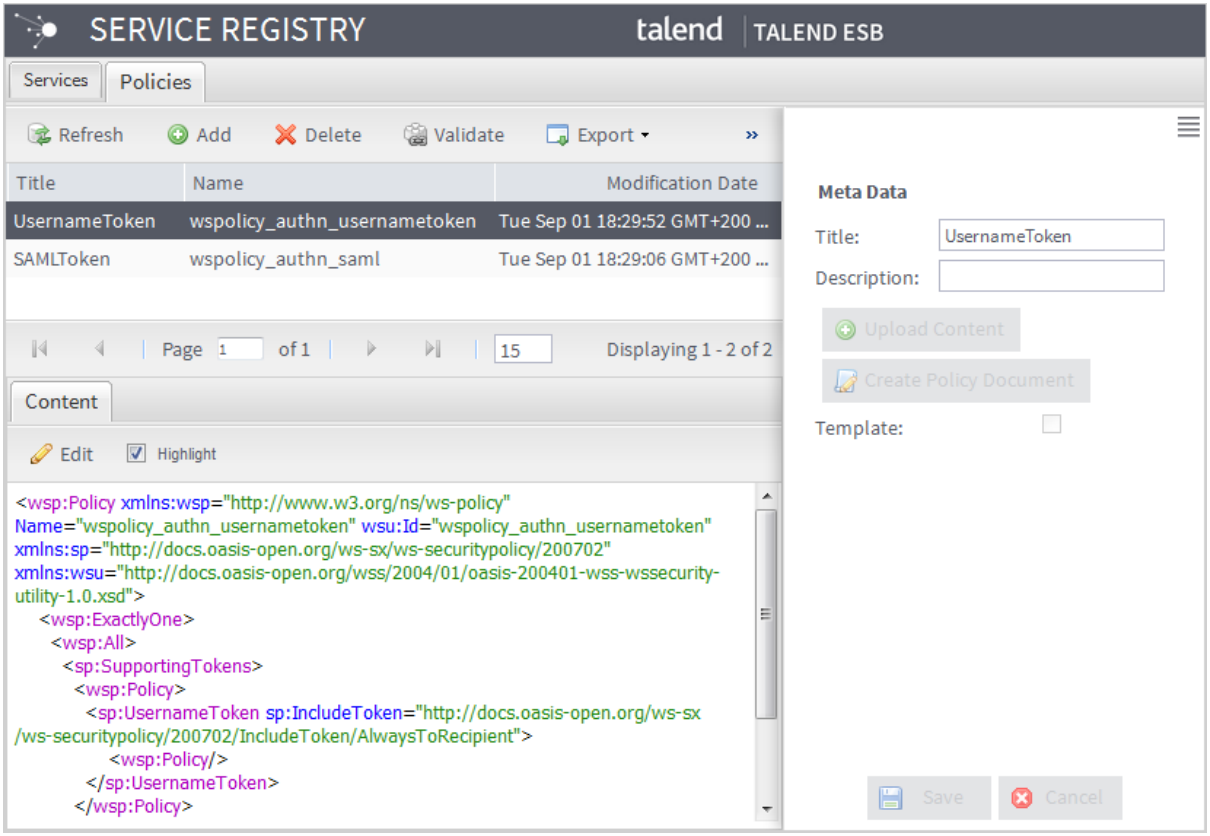
14.3.2. Managing policies

The policies are stored under the **Policies** tab in the **Service Registry** page.

There are two types of policies in the **Service Registry**:

- policies: to be assigned to services directly.
- templates: to be used to create policies.

You can view the two types of policies by selecting **Policies** or **Templates** in the **Show** list on the tool bar.



The **Policies** list provide information regarding the policies, including:

Label	Description
Title	The name that identifies the policy in the Administration Center.
Name	The name of the policy.
Modified Date	The date on which the policy is modified.

Some extra columns are hidden by default but can be added in the table. For more information, *Customizing the display of the policy list*.

These extra columns provide the following information:

Label	Description
ID	Unique identifier of the policy given by the Administration Center automatically.
Category	The category that the policy template belongs to. This column is empty for policies.
Create Date	The date on which the policy is added to the list.

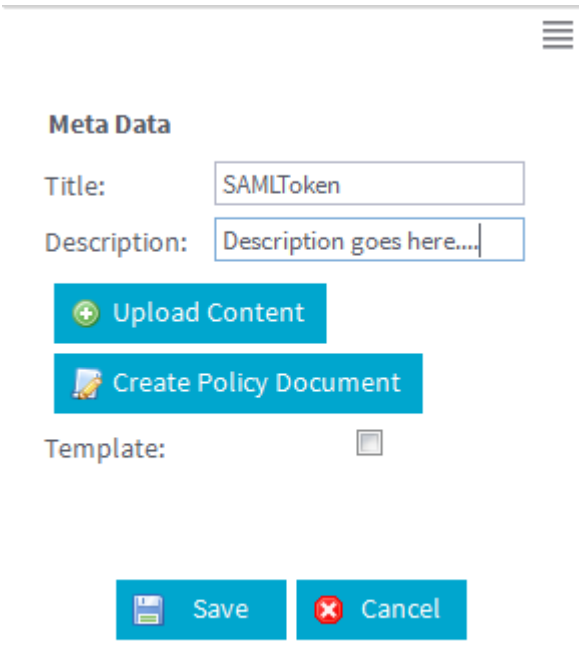
You can export the policies listed in this tab to XML files, or import policies that you already created with previous release of the Administration Center. For more information, see *Exporting and importing services and polices*.

14.3.2.1. Adding a policy

Talend Administration Center allows you to add policies to the **Service Registry** page by uploading the content from a file or a URL. You can also save the policies as templates and create new policy files by combining the templates.

Adding a policy or template by uploading the content from a file or a URL

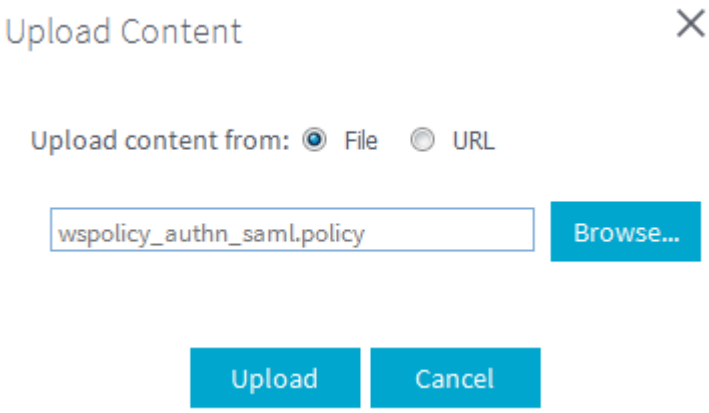
1. From the toolbar on the **Policies** tab, click **Add** to show the configuration panel to the right.



2. Enter the following information as necessary.

Field	Description
Title	Type in a name that identifies the policy in the Administration Center.
Description	Provide any useful information regarding the policy.
Template	Select this check box to save the policy as a template.
Category	This option appears when the **Template** check box is selected. Specify a new category for the policy template or select an existing category from the drop down list.

3. Click the **Upload content** button to upload the content of a policy file. The **[Upload Content]** dialog box appears, allowing you to upload the policy from a **File** or a **URL**.



To upload the content from a file, browse to or enter the path where the file is located.

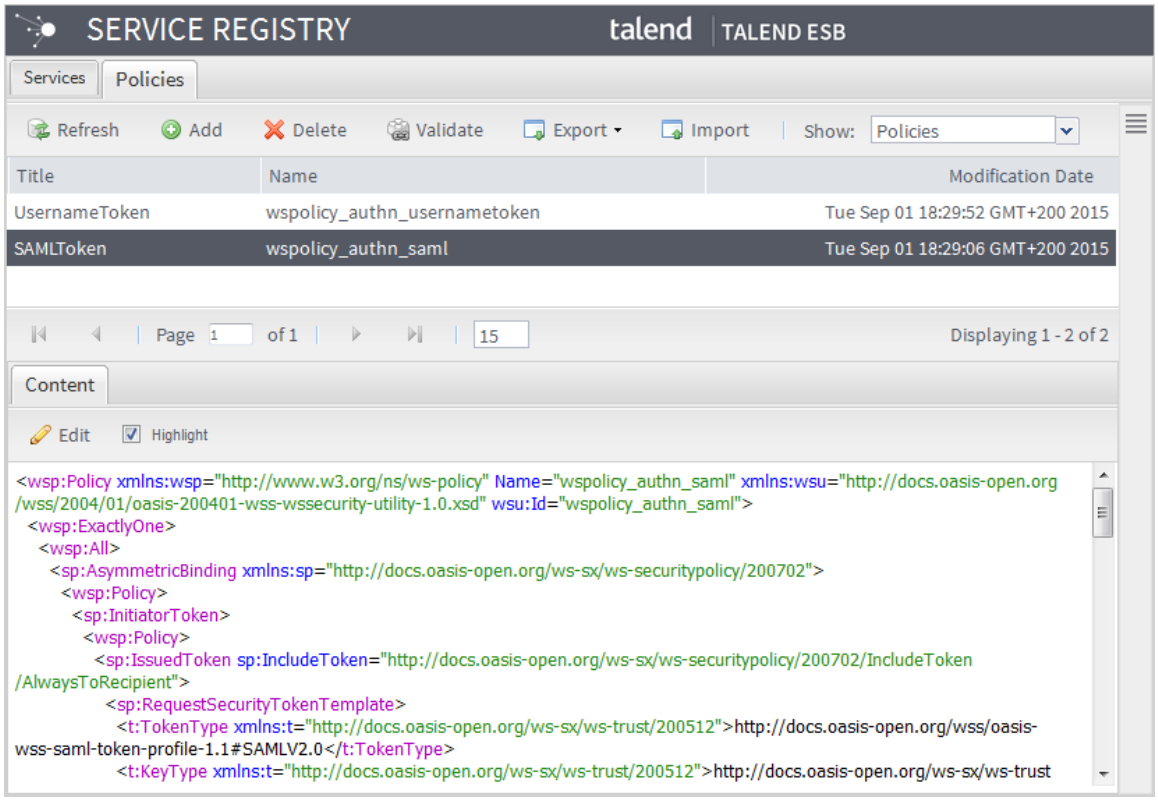
To upload the content from a URL, enter the URL in the field.

Click **Upload** to upload the content and close the dialog box or **Close** to cancel it.

4. The content of the policy is shown in the **Content** tab on the lower half of the **Service Registry** page.

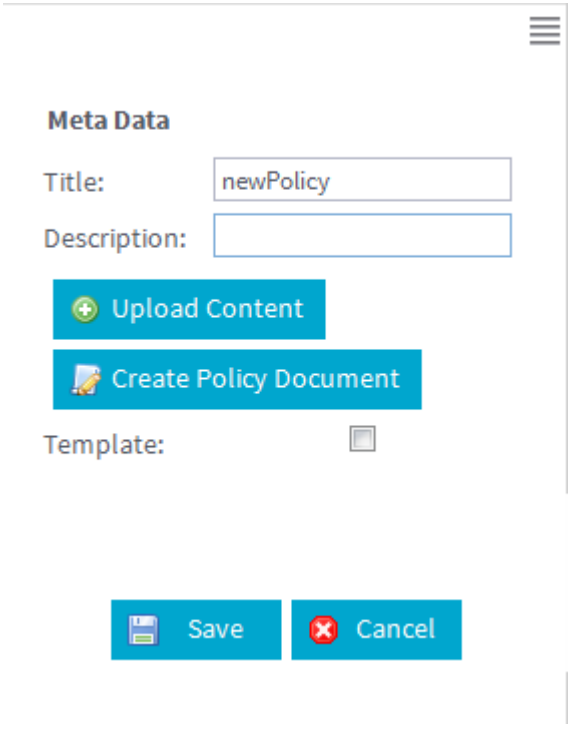
   Click **Save** to validate the creation or **Cancel** to cancel it.

   The newly created policy is shown under the **Policies** or **Templates** type as you specified.



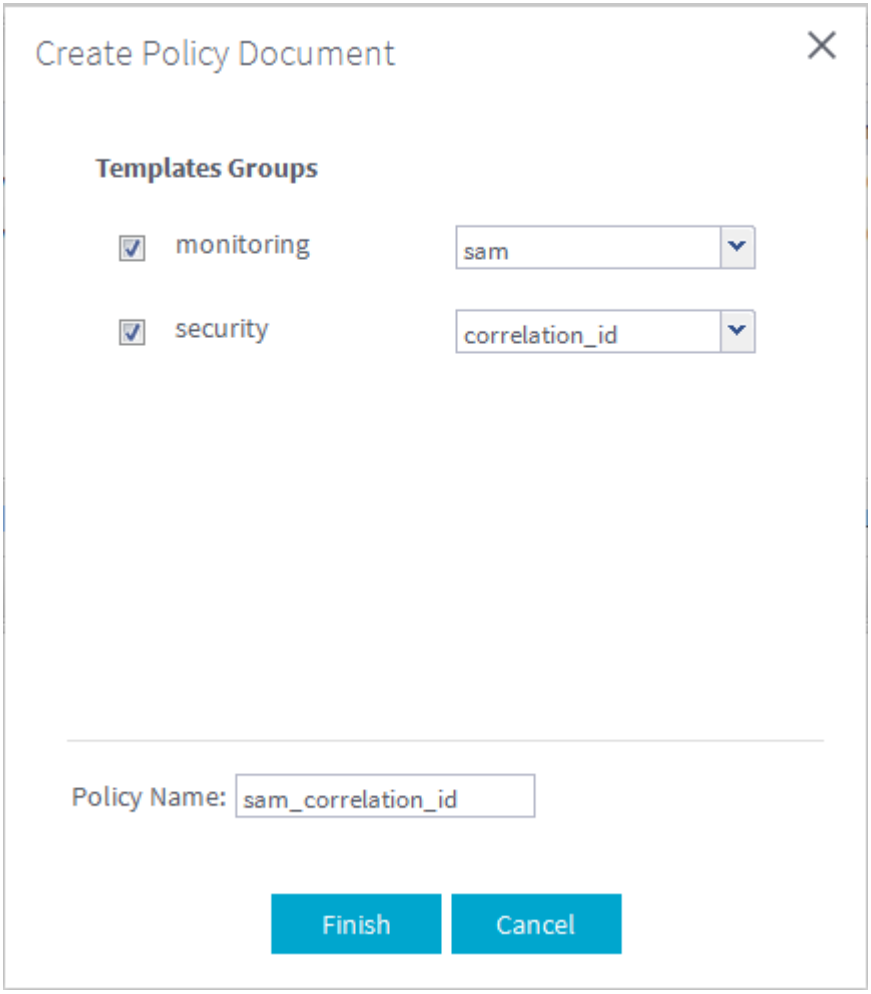
Adding a policy by creating policy document from templates

1. From the toolbar on the **Policies** tab, click **Add** to show the configuration panel to the right.



2. Enter the title for the policy in the **Title** field and provide any useful information regarding the policy as needed in the **Description** field.

3. Click the **Create Policy Document** button to show the **[Create Policy Document]** wizard.

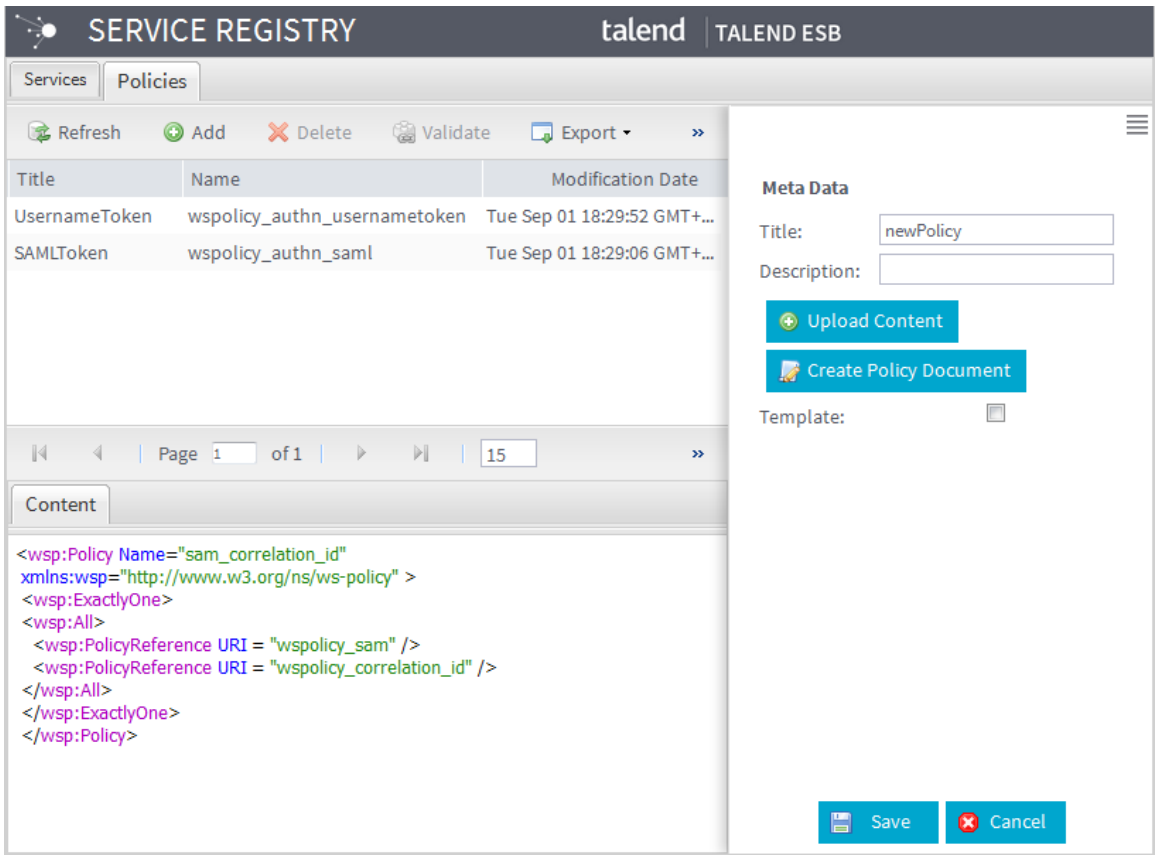


4. In the wizard, select one or more template categories in the **Template Groups** area and for each of them, select a template you want to use in the list. The new policy will be a combination of the selected templates. Note that you can select only one template in one category.

   Enter a name for the policy in the **Policy Name** field.

5. Click **Finish** to validate your configuration or **Cancel** to cancel it.

6. In the configuration panel, click **Save** to validate the creation or **Cancel** to cancel it.



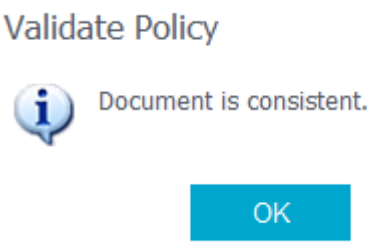
The newly created policy is shown under the **Policies** type of the list.

14.3.2.2. Validating a policy

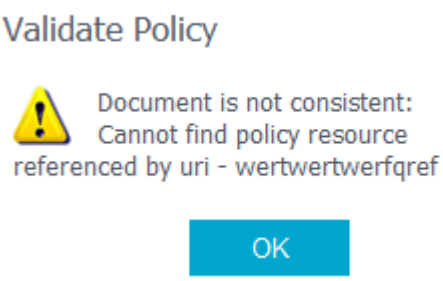
After adding a policy to the list, you can check the consistency of its content. To do so:

1. In the list of policies, select one you want to validate.
2. On the toolbar, click **Validate**. A **[Consistency check result]** dialog box appears, showing if the content of the policy is consistent or not.

   The result of a consistent policy:



   A sample result of an inconsistent policy:



3. Click **Close** to close the dialog box.

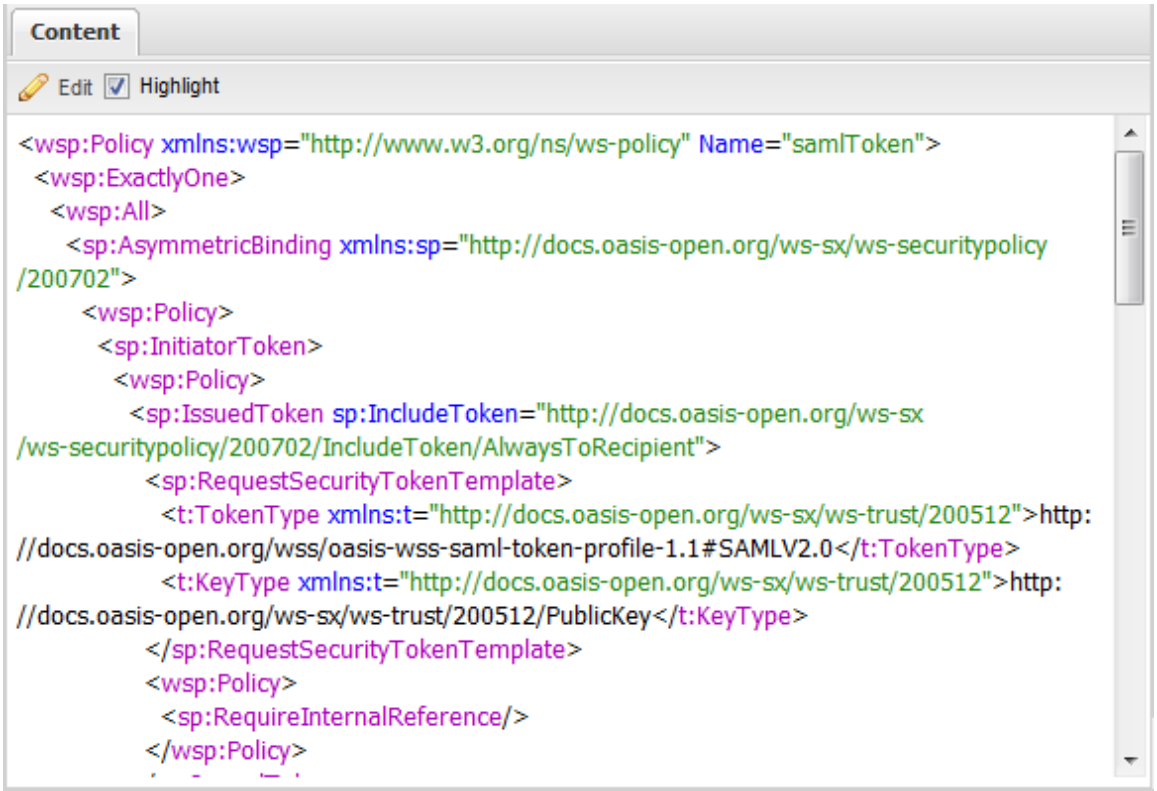
14.3.2.3. Editing a policy

You can edit the policy in the **Content** tab on the lower half of the **Service Registry** page. To do so:

1. Select a policy in the policy list. The content of it is shown in the **Content** tab on the lower half of the **Service Registry** page.

   You can select the **Highlight** check box to highlight the policy element names.

2. Click **Edit** in the **Content** tab and edit the content as needed.



3. Click **Ok** to save your changes of the content or **Cancel** to cancel it.

14.3.2.4. Deleting a policy

To delete a policy from the policy list, do the following:

1. In the list of policies, select one you want to delete.
2. On the toolbar, click **Delete**. A confirmation dialog box appears.
3. Click **OK** to remove the policy from the policy list.

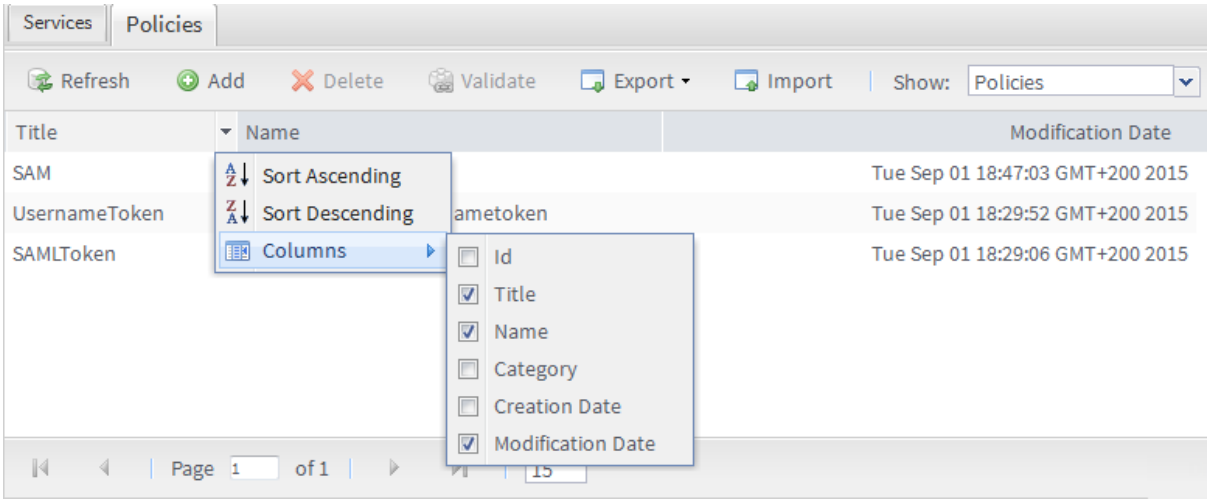
14.3.2.5. Customizing the display of the policy list

You can customize the policy list view to show/hide one or more columns in the policy list and arrange the list order.

1. On the policy list, put the pointer on a column name and click the drop-down arrow.
2. In the drop-down list, select:

Item	Description
Sort Ascending	Arranges the list in an ascending order.
Sort Descending	Arranges the list in an descending order.
Columns	Displays a drop-down list where you can select/clear the check box next to the column(s) you want to show/hide.

The figure below shows the list view options in the drop-down list.



Once you have customized the list, your preferences are saved (columns, order or width) and kept even after the page is refreshed.

14.3.2.6. Refreshing the policy list

To refresh the policy list, click the **Refresh** button on the toolbar.

14.3.3. Assigning a policy to a service

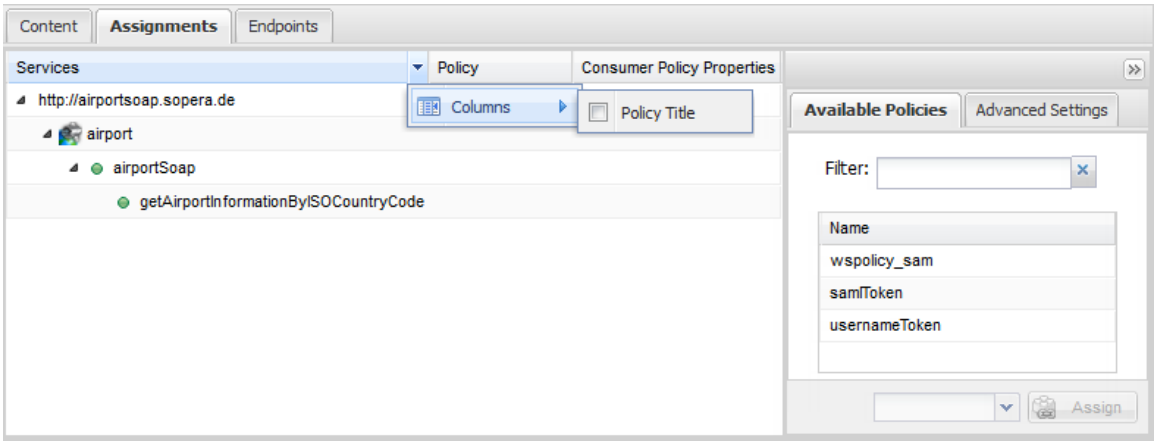
After creating the services and policies to the **Service Registry** page, you can now assign provider and consumer policies to a service. To do so:

1. In the **Services** list, select a service in the list and click the **Assignments** tab on the lower half of the page.

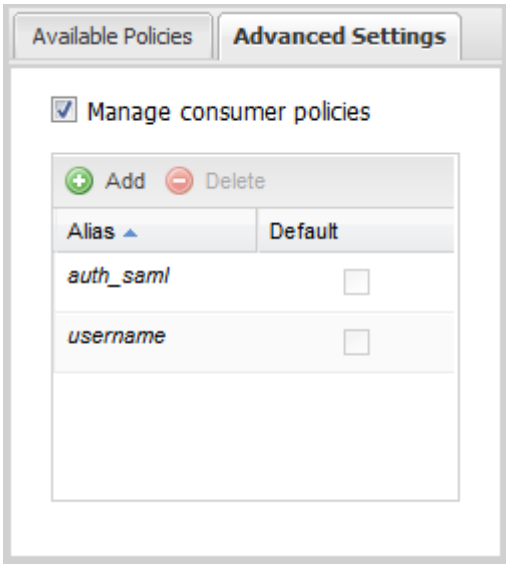
   The WSDL tree view of the service is displayed in the **Assignments** tab, with the available policies listed to the right.

   You can customize the display of the service and policy list view to show or hide the policy title. To do so, put the pointer on a column name and click the drop-down arrow. In the drop-down list, select **Columns** and select or clear the **Policy Title** check box.

   You can also filter the available policies by typing in a search string in the **Filter** box.

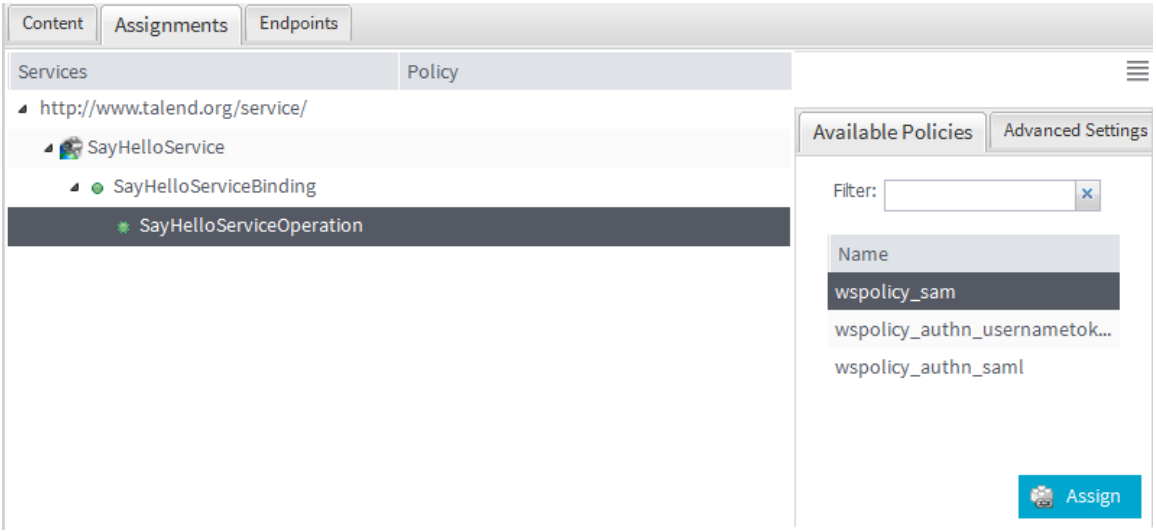


   Note that the **Consumer Policy Properties** column only shows when you select the **Manage consumer policies** check box in the **Advanced Settings** tab.



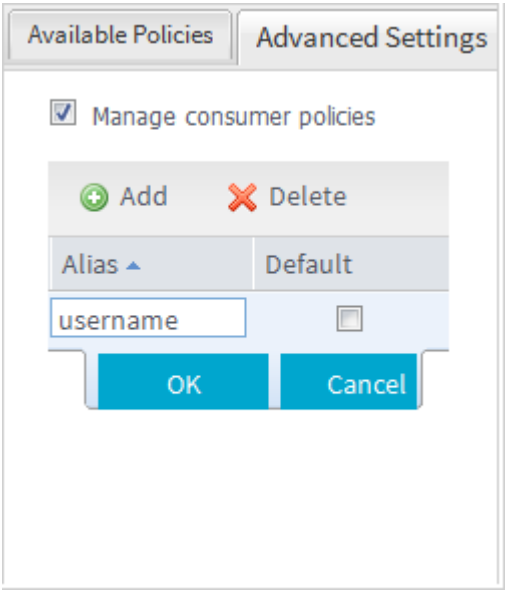
2. In the **Services** area, select the service or an operation in the WSDL tree structure that you want to assign a policy to.

3. To assign a provider policy to a service or an operation, in the **Available Policies** area, select the policy you want to use in the table and click the **Assign** button to assign it to the selected service or operation. The policy is then shown in the **Policy** column of the services list.



Note that you can only assign one provider policy to the service or an operation and you cannot assign a policy to the namespace or a port node.

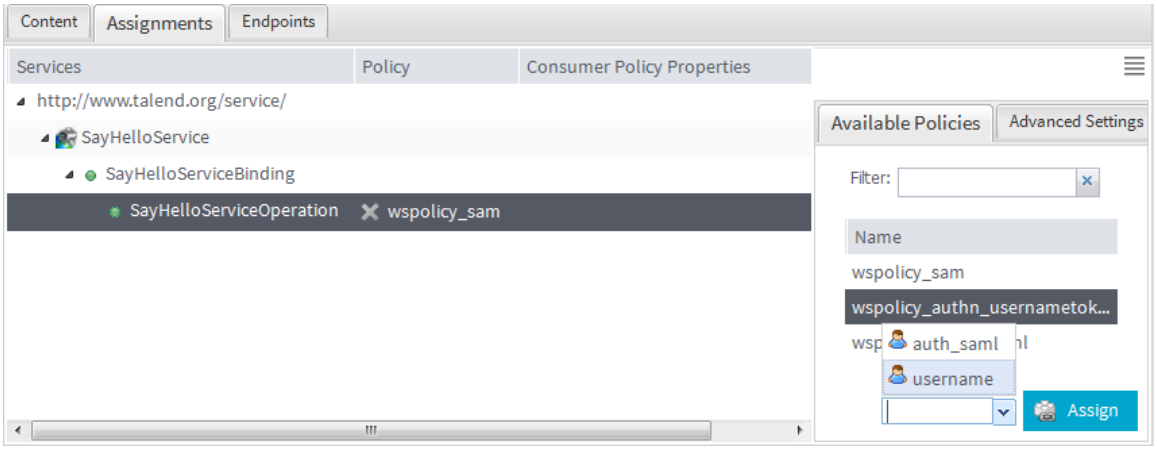
4. To assign a consumer policy to a service or an operation, click the **Advanced Settings** tab to create an alias for the consumer policy first.



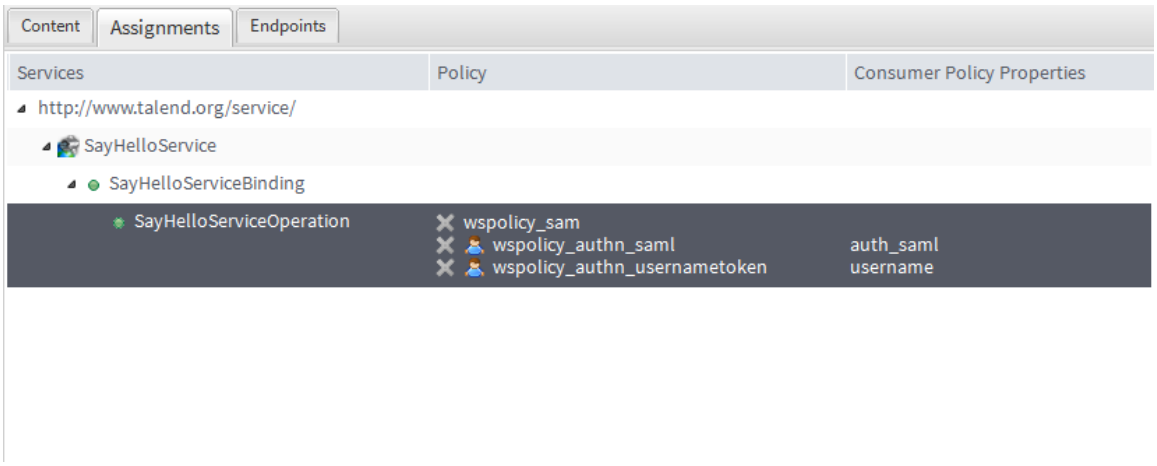
In the **Advanced Settings** tab, select the **Manage consumer policies** check box and click **Add** in the table shown below. In the **Alias** column, enter an alias for the consumer policy. You can assign multiple consumer policies to a service or an operation. Select the **Default** check box if you want to set this policy as the default one. Click **OK** to complete the creation.

Once an alias is created, you can double click it to edit it.

5. Click the **Available Policies** tab. In the policies table, select the consumer policy and select the alias for it in the drop-down list under the table. Click **Assign** to assign it to the selected service or operation.



The policy is then shown in the **Policy** column of the services list, with its alias in the **Consumer Policy Properties** column. You can assign multiple consumer policies to a service or an operation. The one you set as default is italicized in bold.



Note that the consumer policy alias is kept in the Web-Browser session. If the alias is not assigned to a service or an operation, it will be cleared once you leave this Web-Browser session.

To unassign a policy to a service or operation, click the button next to the policy.

You can also click a policy in the **Policy** column to view its content in a pop-up window:

When a service to which a policy is assigned gets deleted, the policy attachment document will be removed too.

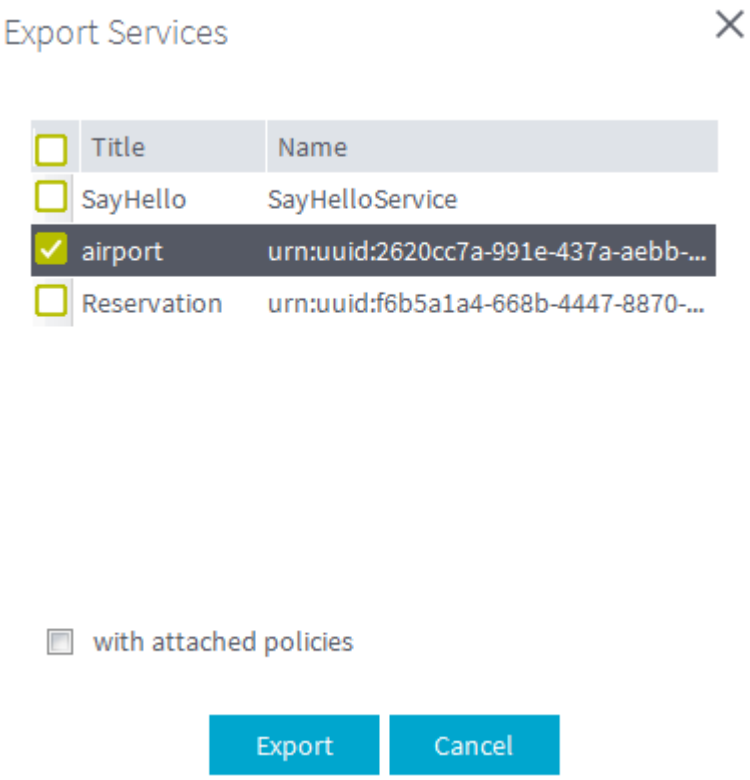
14.3.4. Exporting and importing services and polices

Talend Administration Center allows you to export the services and polices created in the current instance of the Administration Center to XML files, or import services and polices you already created with previous release of the Administration Center.

14.3.4.1. Exporting a service

To export a service:

1. Click **Export** > **Services** on the toolbar. The **[Export Services]** wizard appears.



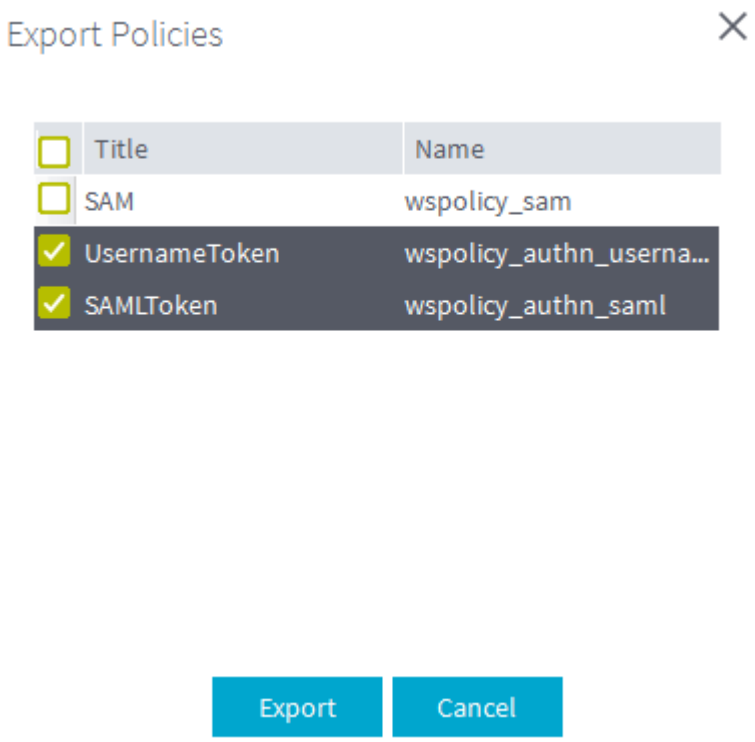
You can customize the display of the services table to show/hide one or more columns or arrange the list in a certain order. For more information, see *Customizing the display of the policy list*..

2. Select one or more services in the list that you want to export in the wizard and click **Export**. The Web browser will prompt you to open or save the file depending on your Web browser configuration.

14.3.4.2. Exporting a policy

To export a policy:

1. Click **Export** > **Policies** on the toolbar. The **[Export Policies]** wizard appears.



You can customize the display of the policies table to show/hide one or more columns or arrange the list in a certain order. For more information, see *Customizing the display of the service list*.

2. Select one or more policies in the list that you want to export in the wizard and click **Export**. The Web browser will prompt you to open or save the file depending on your Web browser configuration.

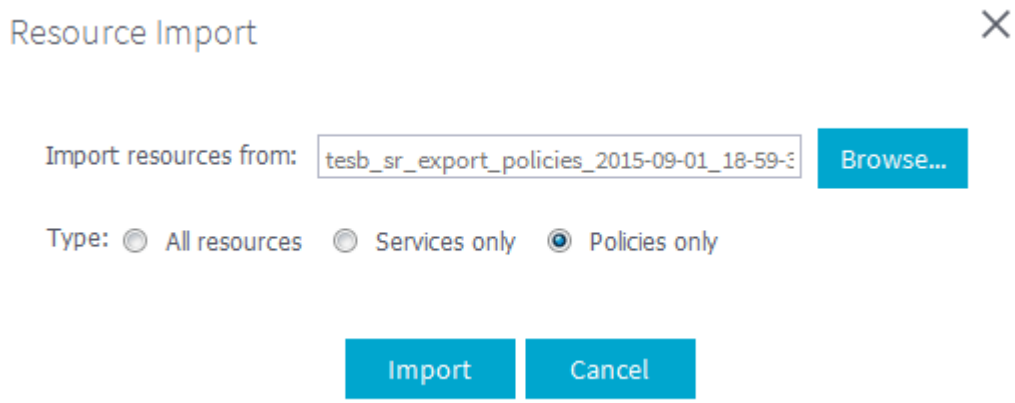
14.3.4.3. Exporting all the services and policies

You can also export all the services and policies in the **Service Registry** page by click **Export** > **All Resources** on the toolbar. The Web browser will prompt you to open or save the file depending on your Web browser configuration.

14.3.4.4. Importing services and policies

You can import services and policies that you have already created with previous release of the Administration Center. To do so:

1. Click **Import** on the toolbar. The **[Resource Import]** wizard appears.



2. Click **Browse** to browse to the file that you want to import the resources from.

   Select the resource type from **All** (services and polices), **Services only**, and **Policies only**.

3. Click **Import** to import the resource.

   Note that duplicate services or policies in the file that already exist in the **Service Registry** page can not imported.

Chapter 15. Managing the Provisioning Service

The **Provisioning Service** is used to centralize and distribute feature descriptions and configuration resources throughout several Talend Runtimes, via system and application profiles. System profiles can be used to configure your system. Application profiles can be used to configure your applications. It helps maintain consistency for your resources and configurations throughout all your Talend Runtime containers.

To access the **Provisioning** page, you need to have a license that includes the **Provisioning** component of the **ESB Infrastructure** module, and also have the relevant rights defined by the Administrator during your user account creation in *Talend Administration Center*. For more information about the modules and features ship with each license, refer to *What modules and features are available depending on your license* .

If your license allows the **ESB Infrastructure** module but it does not show in the **Menu** tree view of *Talend Administration Center*, contact your Administrator.

Using **Provisioning** in *Talend Administration Center*, you will be able to:

- manage profiles to handle features and resources,
- manage placeholders.

15.1. Prerequisites

To access the **Provisioning** component of **ESB Infrastructure** module, you need to:

- have a licence that includes this module and also have the relevant rights defined by the Administrator during your user account creation in *Talend Administration Center*,
- have started Talend Runtime container and the Provisioning Server and Agent on it. For more information about starting the container and the Provisioning features, please refer to *Talend ESB Infrastructure Services Configuration Guide*,
- have previously entered the URL to the Provisioning Service and the credentials to access it in the **Configuration** page. For more information, see Setting up the ESB Provisioning Service.

If your license allows the **ESB Infrastructure** module but it does not show in the **Menu** tree view of *Talend Administration Center*, contact your Administrator.

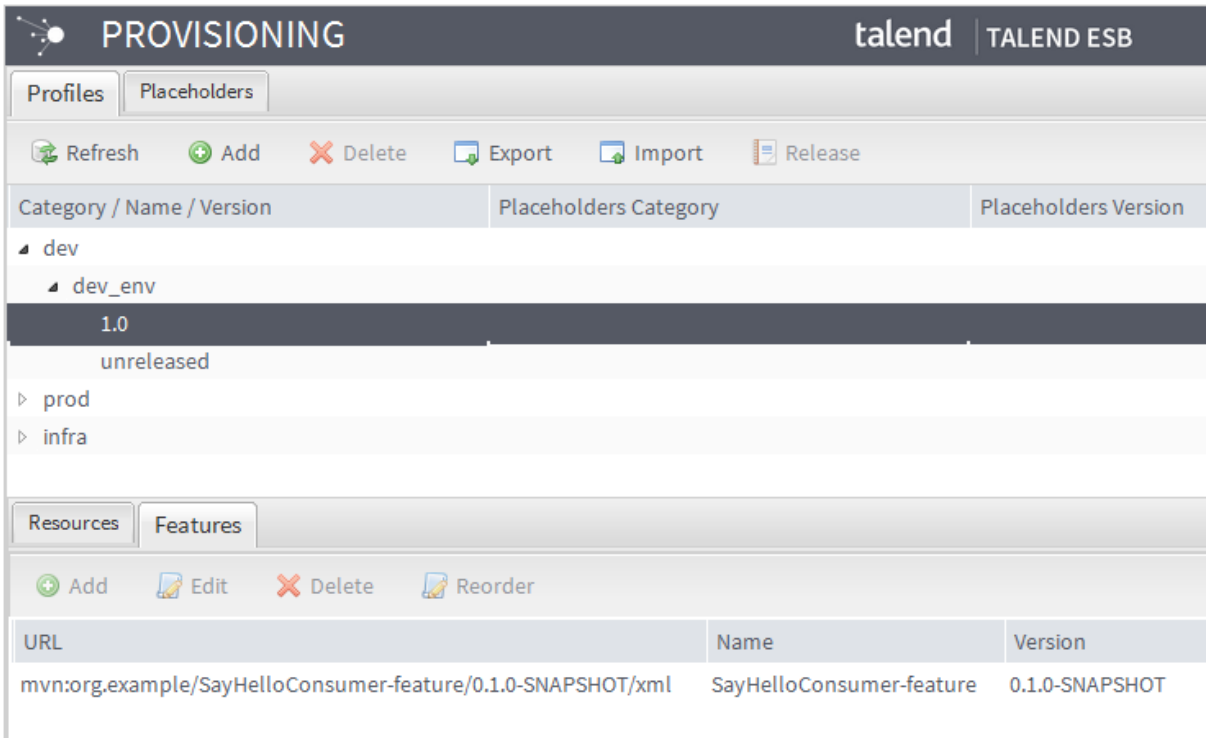
15.2. Accessing the Provisioning page

Only users that have the Operation manager role and rights can have read-write access to this page. Users that have the Designer role and rights can have a read only access. Other users have a read only access, or do not have access to this page at all. For further information on access rights, see User roles/rights in the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the right authorization by the Administrator.

To display the **Provisioning** page:

In the **Menu** tree view, expand the **ESB Infrastructure** node and click **Provisioning**.

On the upper half of the **Provisioning** page, the list of profiles and placeholder is displayed in the **Profiles** and **Placeholders** tab respectively. And when the **Profiles** tab is selected, the **Resources** and **Features** tabs display on the lower half of the page to be able to add those in your profile.



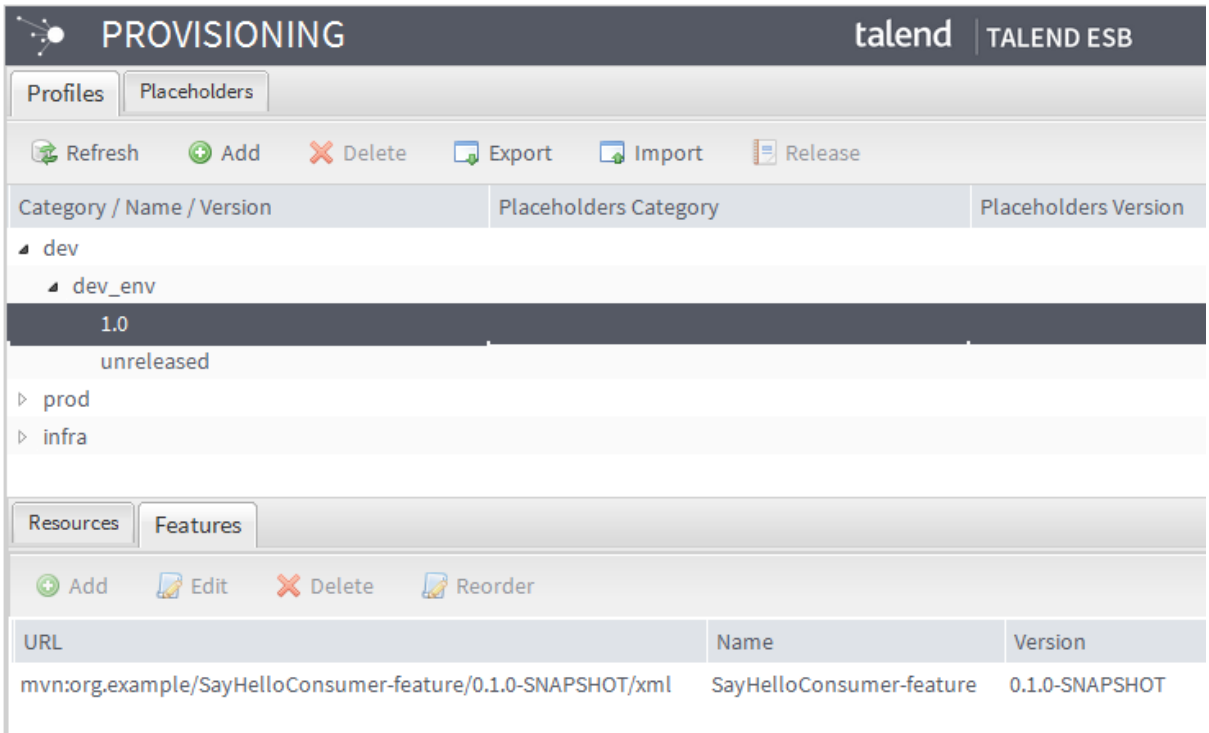
15.3. Managing provisions

Provisions can be managed throughout all your containers via profiles and placeholders. The profiles will help you centralize and distribute features and resources, whereas placeholders will help you variabilize settings.

To manage provisions, you need to:

1. *Creating a profile*
2. *Adding a feature to the profile*
3. *Adding a resource to the profile*
4. *Creating a placeholder*.
5. *Releasing a placeholder*.
6. *Releasing a profile*.
7. *Applying a profile*

The below figure illustrates an example of the **Provisioning** page.



The profiles are listed in the **Profiles** tab, providing information regarding the profiles, including:

Label	Description
Category/Name/Version	The name of the profile created in the Talend Runtime container.
Placeholders Category	The category of the placeholder.
Placeholders version	The version of the placeholder.

Extra columns are hidden by default but can be added in the table. For more information, see *Customizing the display of the service list*.

The extra column provides the following information:

Label	Description
ID	Unique identifier of the profile, given by the Administration Center automatically.

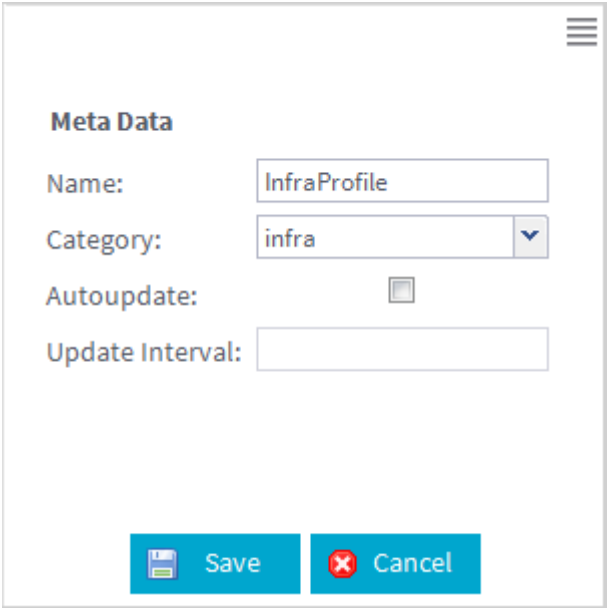
You can export the profiles listed in this tab to XML files, or import profiles that you already created with previous release of the Administration Center. For more information, see *Exporting and importing profiles and placeholders*.

15.3.1. Creating a profile

According to the profile you need to create, you will have to add resources and/or features to it, before releasing it to your Talend Runtime container(s). To create a new profile, complete the following:

Adding a profile

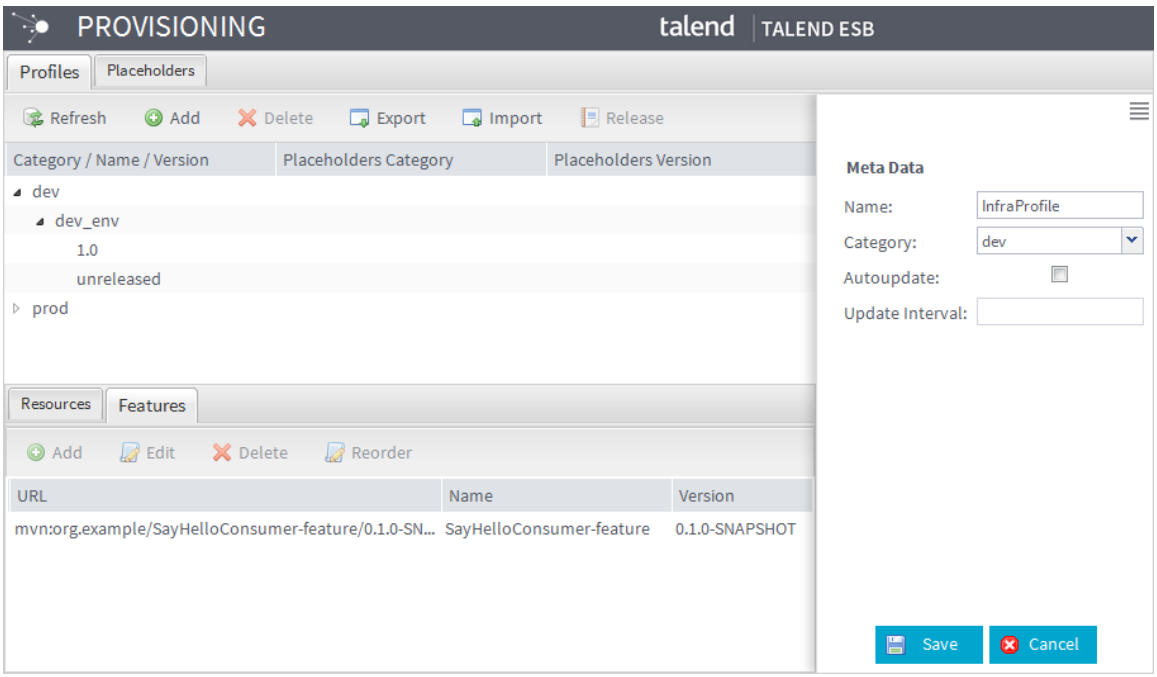
1. On the upper half of the **Provisioning** page, click the **Profiles** tab.
2. From the toolbar on the **Profiles** tab, click **Add** to show the configuration panel to the right.



3. Enter the following information as necessary.

Field	Description
Name	Type in a name for the profile to be created in the Talend Runtime container.
Category	Type in a category of the profile. (The category of the profile should be the same as the one of the placeholder to be used with that profile.)

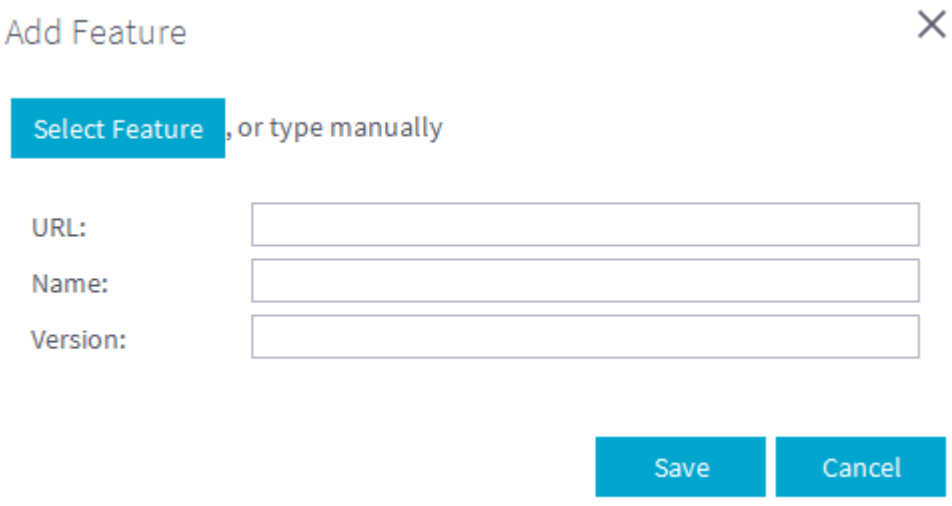
4. Click **Save** to validate the creation or **Cancel** to cancel it.



Once the profile created, you need to add features and/or resources to it. For more information, see *Adding a feature to the profile* and *Adding a resource to the profile*. When the profile is complete, release it directly if you are not using any placeholder in combination with it. For more information, see *Releasing a profile*. But if you are using a placeholder with your profile, you need to release the placeholder before releasing the profile. For more information about the creation of placeholders, see *Creating a placeholder*, and for more information about releasing a placeholder, see *Releasing a placeholder*.

15.3.1.1. Adding a feature to the profile

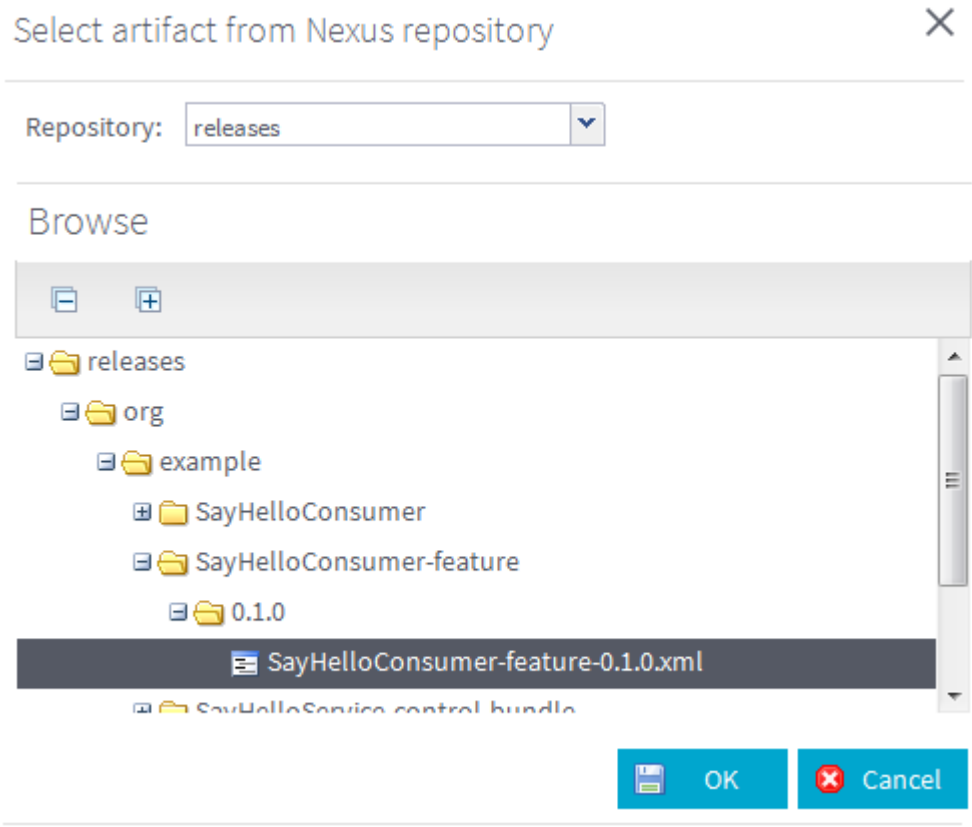
1. Select the **unreleased** version of the profile you want to add a feature to.
2. On the lower half of the **Profiles** tab, click the **Features** tab.
3. Click **Add** to open the **[Add Feature]** wizard:



4. You can either:

- manually type the **URL**, **Name** and **Version** of the **Feature** you want to add,
- click the **Select Feature** button to open a wizard that will help you fill in those fields.

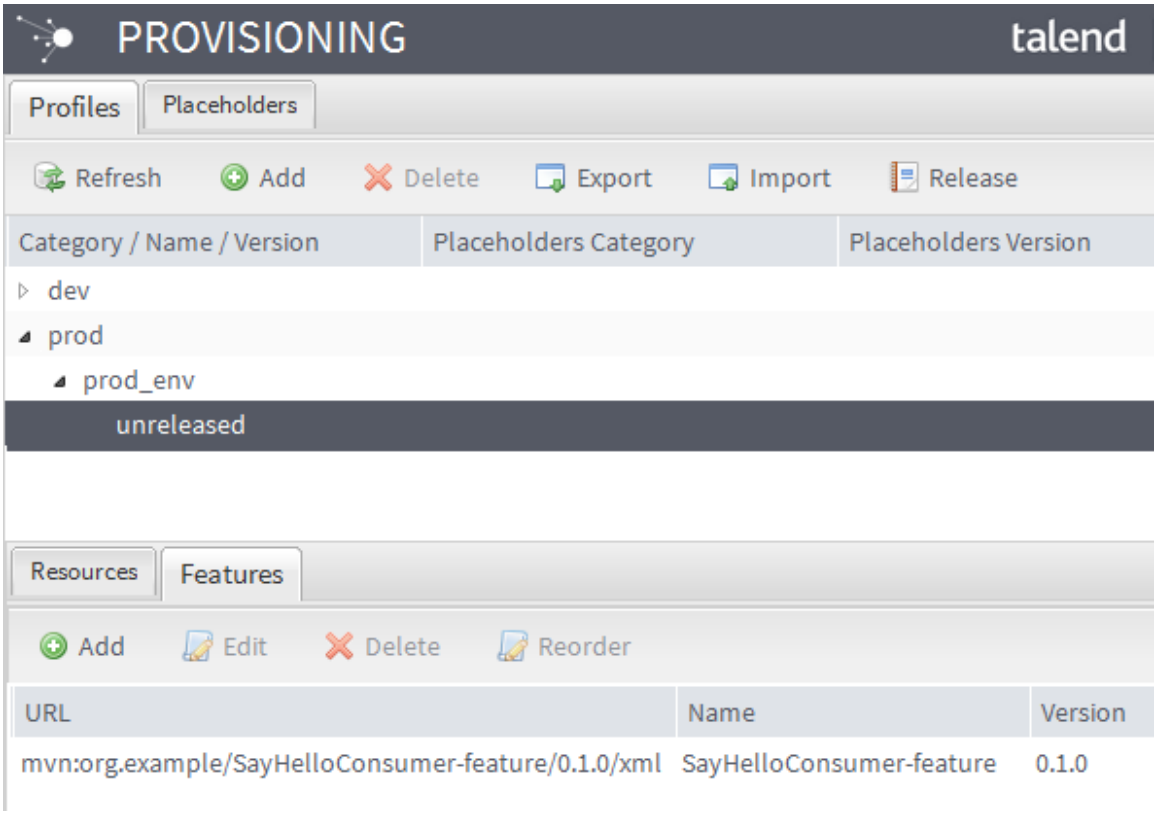
5. If you clicked the **Select Feature** button, in the **Repository** list, select the Artifact repository storing the feature you want to use.



6. In the **Browse** area, browse to the feature to add to your profile, and click **OK**.

   The **URL**, **Name** and **Version** fields get automatically filled in.

7. Click **Save** to validate the creation or **Cancel** to cancel it.

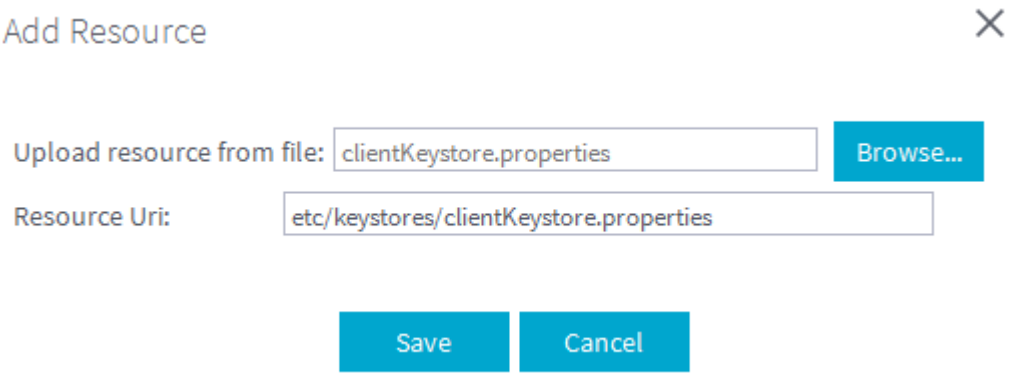


Once added, you can update the feature, at anytime, by clicking **Edit**.

As the order of the features in the **Features** tab is the order in which they would be started in the *Talend Runtime container(s)*, if you have several features in a profil, click the **Reorder** button to reorder them if needed.

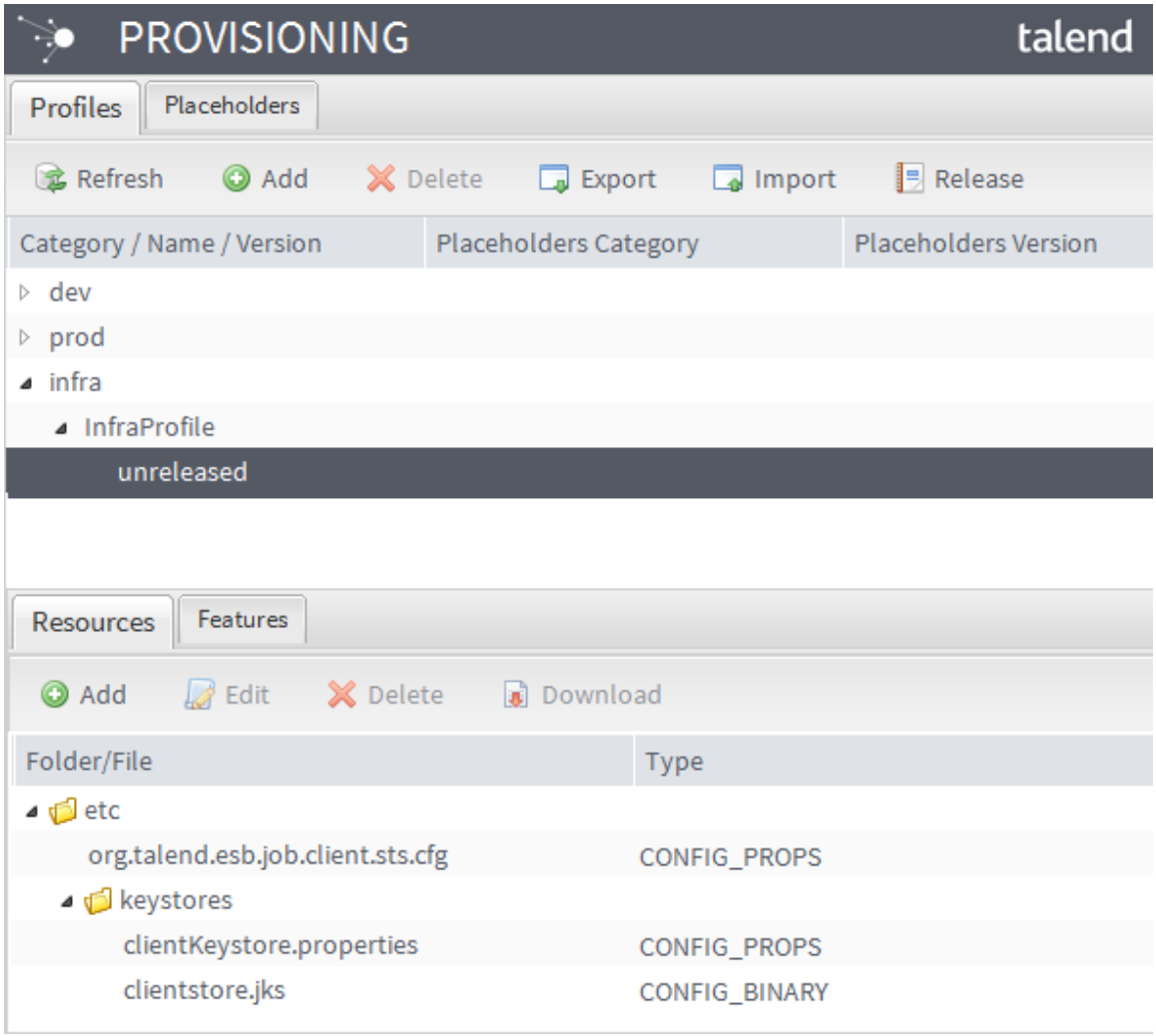
15.3.1.2. Adding a resource to the profile

1. Select the **unreleased** version of the profile you want to add a resource to.
2. On the lower half of the **Profiles** tab, click the **Resources** tab.
3. Click **Add** to open the **[Add Resource]** wizard:



4. Click **Browse...** to browse to the resource you want to add.
5. In the **Resource Uri** field, you can either leave the field empty, which, by default, copy the resource to the `etc` folder of the Talend Runtime container, or enter a specific path of the container in which you want the resource to be copied.

6. Click **Save** to validate the creation or **Cancel** to cancel it.



Once added, you can update or download the resource by clicking respectively **Edit** and **Download**, at anytime.

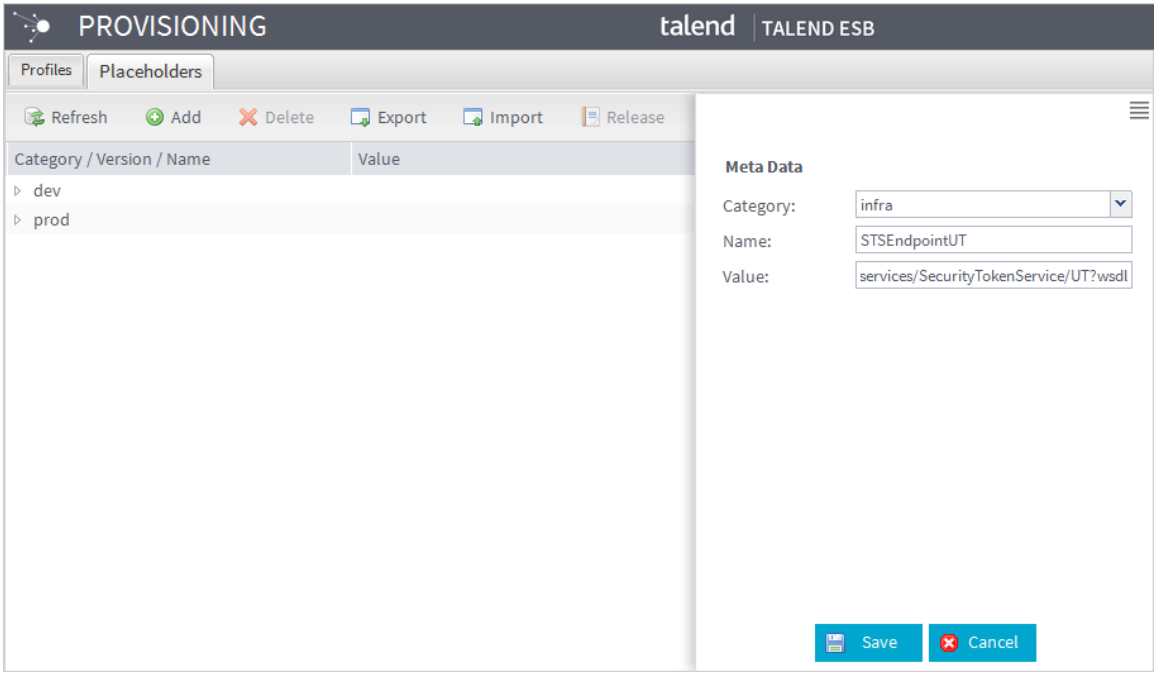
15.3.2. Creating a placeholder

Placeholders are really useful to variabilize settings that need to be distributed across all your Talend Runtime container(s). They are defined via the syntax `#{<placeholder>}` in the resources and configuration files.

To create a new placeholder, complete the following:

1. On the upper half of the **Provisioning** page, click the **Placeholders** tab.

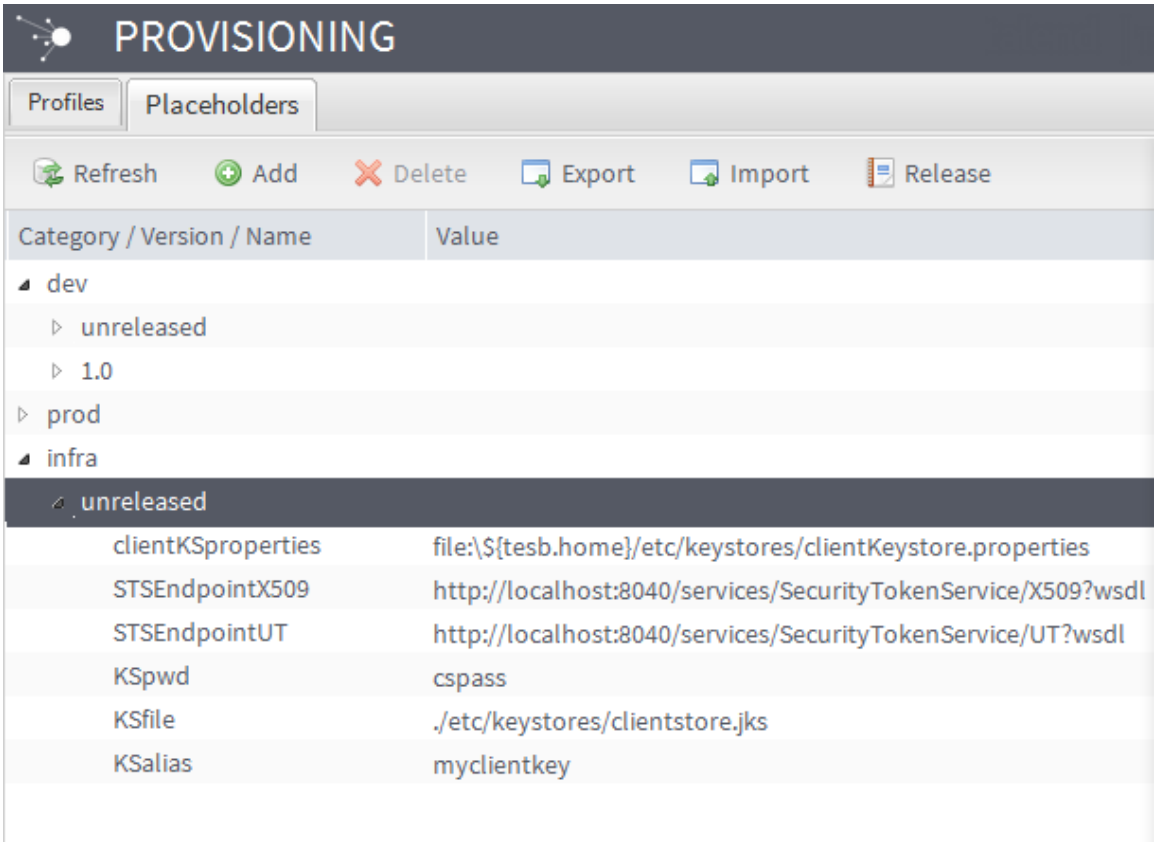
2. From the toolbar on the **Placeholders** tab, click **Add** to show the configuration panel to the right.



3. Enter the following information as necessary.

Field	Description
Category	Type in a category of the placeholder. (The category of the placeholder should be the same as the one of the profile to be used with that palceholder.)
Name	Type in a name for the placeholder to be created in the Talend Runtime container.
Value	Type in the value corresponding to the placeholder.

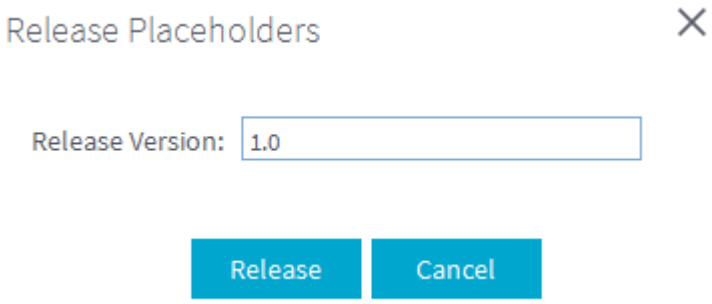
4. Click **Save** to save your changes or **Cancel** to cancel it.



Once the placeholder created, release it. For more information about releasing a placeholder, see *Releasing a placeholder*.

15.3.3. Releasing a placeholder

1. On the upper half of the **Provisioning** page, click the **Placeholders** tab.
2. Select the **unreleased** version of the placeholder you want to release in the list of placeholders.
3. From the toolbar, click **Release** to show the **[Release Placeholders]** wizard.

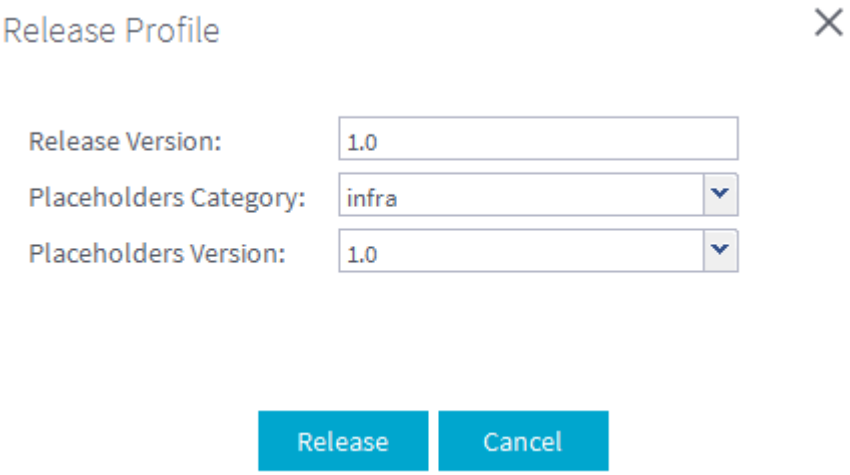


4. In the **Release Version** field, type in the version you want to give the placeholder when releasing it.
5. Click **Release** to validate the release or **Cancel** to cancel it.

   Once released, the version number displays under the placeholder name in the list of placeholders.

15.3.4. Releasing a profile

1. If you created a placeholder to be used with your profile, you need to release the placeholder before releasing the profile. For more information, see *Releasing a placeholder*.
2. On the upper half of the **Provisioning** page, click the **Profiles** tab.
3. Expand the Category and name nodes of the profile, select the **unreleased** version.
4. From the toolbar on the **Profiles** tab, click **Release** to show the **[Release Profile]** wizard.



5. In the **Release Version** field, type in the version you want to give the profile when releasing it.
6. In the **Placeholders Category** list, select the category of the placeholder you want to apply to the profile when releasing it.
7. In the **Placeholders Version** list, select the version of the placeholder to apply to the profile.
8. Click **Release** to validate the release or **Cancel** to cancel it.

   Once released, the version number displays under the name of the profile.

15.3.5. Applying a profile

Once the profile and its related placeholders, if any, are released, you can apply it to your servers (Talend Runtime container) from the **ESB Conductor** page of *Talend Administration Center*. For more information, see *Applying a profile from the ESB Conductor*.

A profile can also be applied directly to the containers via the command **tprovision-agent:apply-profiles [name] [version]**. For more information, see *Talend ESB Infrastructure Services Configuration Guide*.

15.3.6. Deleting placeholders, profiles, resources and features

From *Talend Administration Center*, you can delete one placeholder, or an entire placeholder category. You can also delete the features and resources of a profile, and directly the profile.

When deleting an entire placeholder category, all its placeholders will be deleted as well, and when deleting an entire profile, all its resources and features will be deleted as well.

15.3.6.1. Deleting placeholders

You can either delete an entire placeholder category, or delete individual placeholders.

To delete one placeholder:

1. On the upper half of the **Provisioning** page, click the **Placeholders** tab.
2. In the list of placeholders, expand the category, and the **unreleased** version.
3. Select one placeholder in the list and click the **Delete** button.

   A confirmation dialog box appears.
4. Click **Yes** to remove the placeholder.

To delete a category of placeholders:

1. On the upper half of the **Provisioning** page, click the **Placeholders** tab.
2. In the list of placeholders, select the category to delete.

3. On the toolbar, click **Delete**.

   A confirmation dialog box appears.

4. Click **Yes** to remove the placeholder category from the list.

15.3.6.2. Deleting features

To delete a feature:

1. On the upper half of the **Provisioning** page, click the **Profile** tab.
2. In the list of profiles, select one you want to delete a feature from.
3. Expand the category and the profile name, and select **unreleased**.
4. On the lower half of the **Provisioning** page, click the **Features** tab.
5. Select the feature and click **Delete** in the **Features** tab toolbar.

   A confirmation dialog box appears.

6. Click **Yes** to remove the feature.

15.3.6.3. Deleting resources

To delete a resource:

1. On the upper half of the **Provisioning** page, click the **Profile** tab.
2. In the list of profiles, select one you want to delete a resource from.
3. Expand the category and the profile name, and select **unreleased**.
4. On the lower half of the **Provisioning** page, click the **Resources** tab.
5. Select the resource and click **Delete** in the **Resources** tab toolbar.

   A confirmation dialog box appears.

6. Click **Yes** to remove the resource.

15.3.6.4. Deleting profiles

To delete a profile:

1. On the upper half of the **Provisioning** page, click the **Profiles** tab.
2. In the list of profiles, expand the category of the profile to delete, and select one you want to delete.
3. On the toolbar, click **Delete**.

A confirmation dialog box appears.

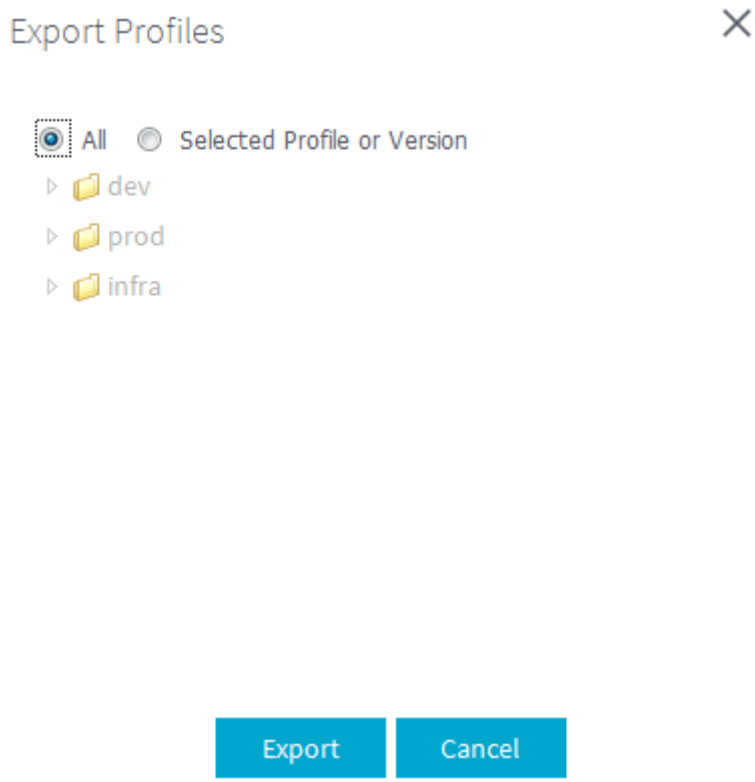
4. Click **Yes** to remove the profile.

15.3.7. Exporting and importing profiles and placeholders

Talend Administration Center allows you to export the profiles and placeholders created in the current instance of the Administration Center, respectively to ZIP files and JSON files, or import profiles and placeholders you already created with previous release of the Administration Center.

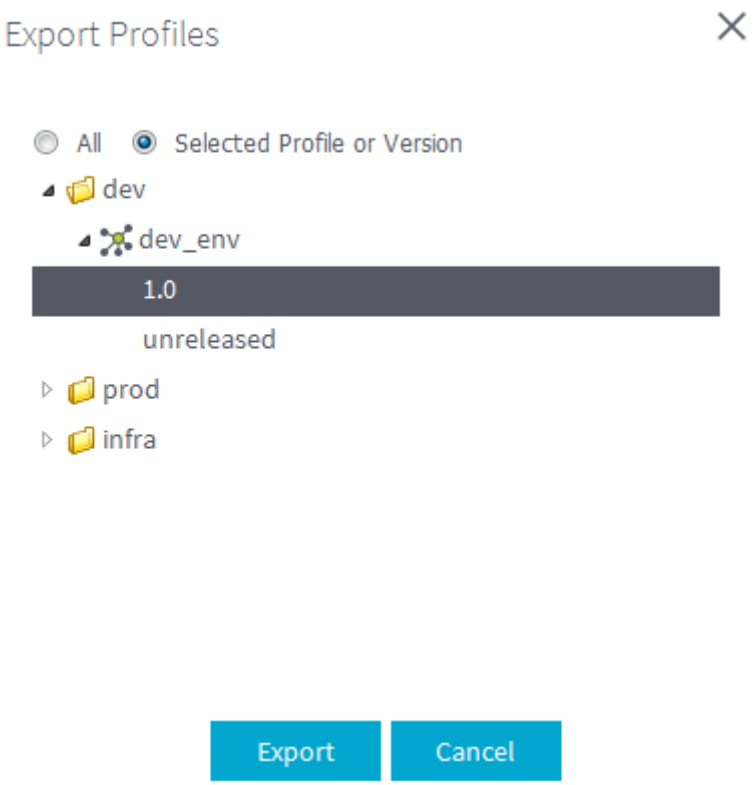
15.3.7.1. Exporting a profile

1. On the upper half of the **Provisioning** page, click the **Profiles** tab.
2. Click **Export** on the toolbar. The **[Export Profiles]** wizard appears.
3. You can export as ZIP files, either:
   - all the profiles at once.



   Click the **All** option and the **Export** button.

   - only one profile, or one version of a profile.

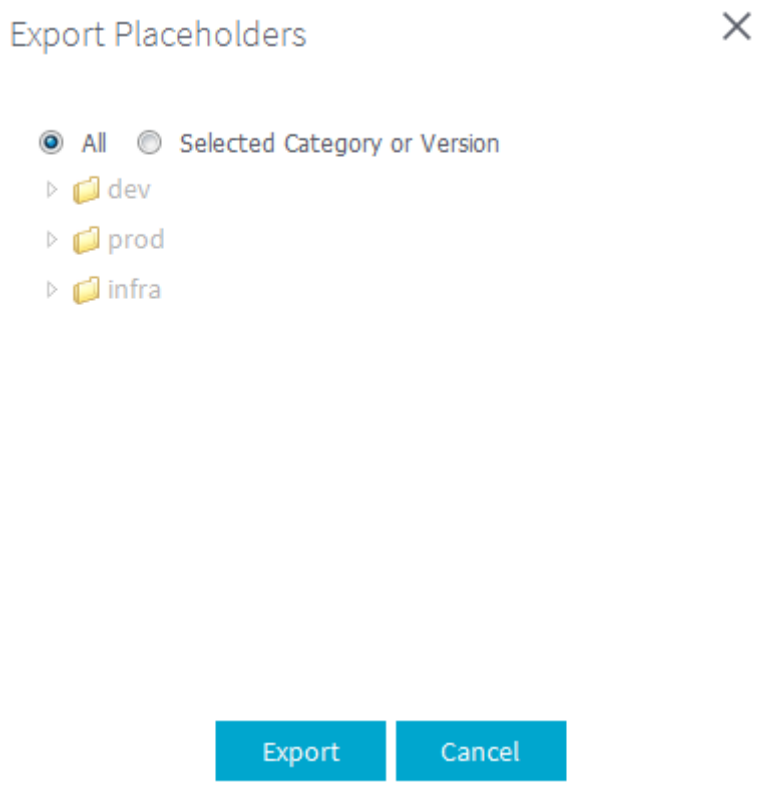


Select the **Selected Profile or Version** option, expand the category of the profile to export, select the profile or the profile version in the list, and click **Export**.

The Web browser will prompt you to open or save the file depending on your Web browser configuration.

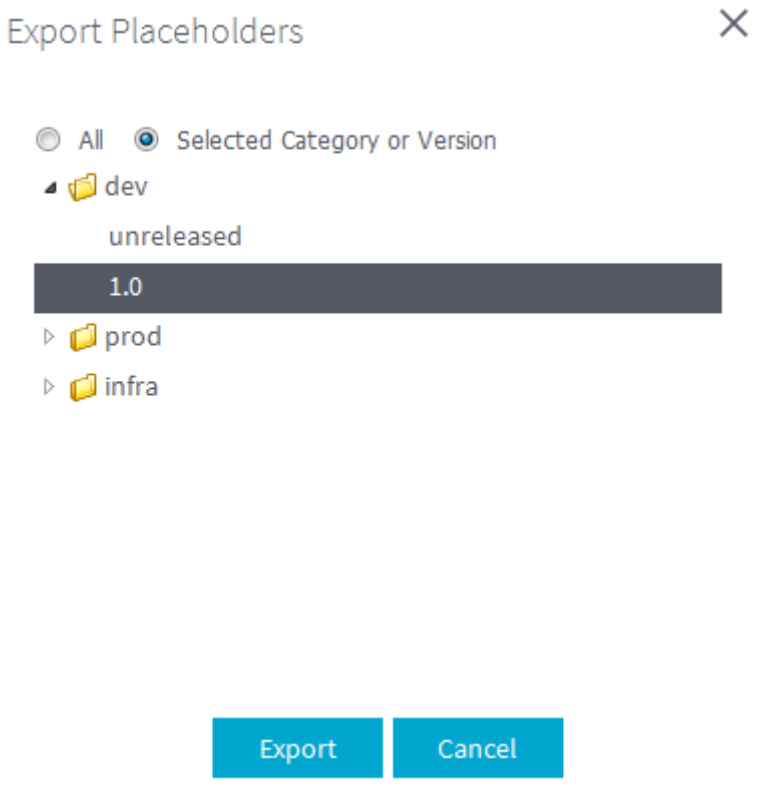
15.3.7.2. Exporting a placeholder

1. On the upper half of the **Provisioning** page, click the **Placeholders** tab.
2. Click **Export** on the toolbar. The **[Export Placeholders]** wizard appears.
3. You can either export as a JSON file:
   - all the placeholders at once.



Click the **All** option and the **Export** button.

- a category of placeholders, or one version of a category.

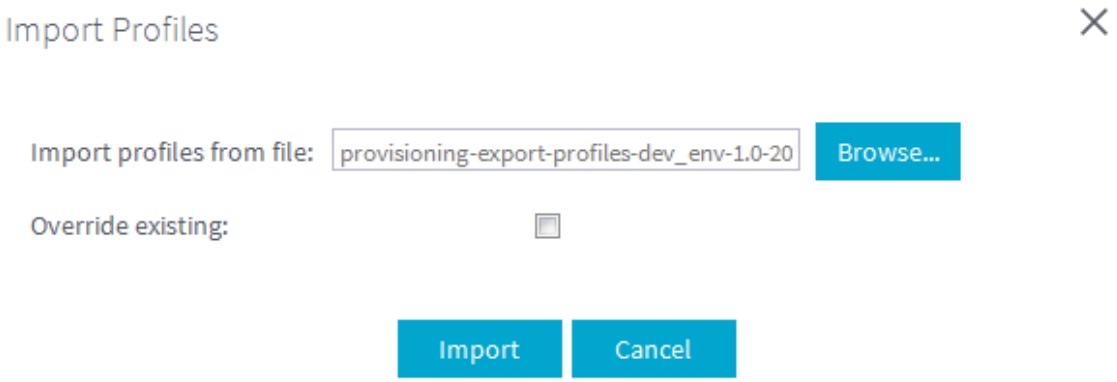


Select the **Selected Category or Version** option, select the category to export, or expand it and select the version to export, and click **Export**.

The Web browser will prompt you to open or save the file depending on your Web browser configuration.

15.3.7.3. Importing a profile

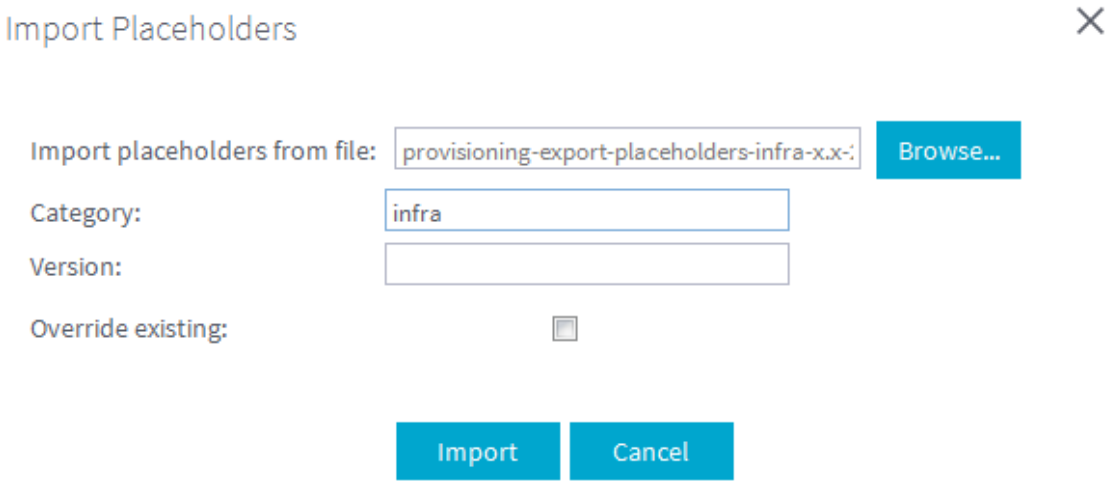
1. Click **Import** on the toolbar. The **[Import Profiles]** wizard appears.



2. Click **Browse** to browse to the file that you want to import the resources from.
3. Select the **Override existing** check box if needed.
4. Click **Import** to import the resource.

15.3.7.4. Importing a placeholder

1. Click **Import** on the toolbar. The **[Import Placeholders]** wizard appears.



2. Click **Browse** to browse to the file that you want to import the resources from.
3. In the **Category** field, type in the category of the placeholder to import, and in the **Version** field, type in the release version of the placeholder.

If you leave the **Version** field empty, all the version available in the file will be imported.

4. Select the **Override existing** check box if needed.
5. Click **Import** to import the resource.

Chapter 16. Business rules

Drools web application is a BRMS (Business Rule Management System) used to define, deploy, execute, monitor and maintain the variety and complexity of business rules that are used by operational systems within an enterprise.

It includes a fast and highly efficient rule engine and easy to use rule management system and repository.

This chapter describes the basic usage of Drools to enable you to get started with this web application integrated in *Talend Administration Center*. For detailed Drools documentation, see Drools Documentation.

Access to this application depends on your license. For more information, refer to *What modules and features are available depending on your license* .

16.1. Drools and Talend

Drools is a Business Rules Management System, BRMS solution, that enables business experts to create business rules and customize them on the run. *Talend Administration Center* integrates the Drools workbench 6.2.0.FINAL to allow for a centralized definition and administration of business rules.

Your *Talend Administration Center* must have internet access, otherwise you may have an error when you try to use the Drools server. Another way to avoid this error is to add *-Dorg.kie.demo=false and -Dorg.kie.example=false* into the *setenv.sh* file in the apache-tomcat/bin folder.

Only users that have the role and rights of Operation manager or Designer can access Drools from *Talend Administration Center*. By default, those two types of users are defined as administrators in Drools but they can lock down the access to the business experts per package or per category. For more information on defining a user, see *Managing Users*.

From the **Drools** page in the Administration Center, you can use graphical editors to create and edit rules quickly and easily.

The Drools web application is structured with:

- Organization units which are used to mirror business structure (departments and divisions). An organization unit can hold multiple repositories.
- Repositories which are the place where assets are stored and each repository is organized by projects and belongs to a single organization unit. You can create a new repository from scratch or clone it from an existing repository.
- Projects which are the place where you can create and store business rules.

After creating and deploying business rules using the **Drools** page, you can use them in production environments such as the **tBRMS** component which integrate business rules to process data flows.

Git is used with Drools to store rules. This usage of Git allows you to take full advantage of features like versioning, branching and also cloning repositories. For further information about Drools configuration with GIT, see Drools Workbench. For further information on how to manually install the Drools Workbench, see the *Talend Installation Guide*.

16.2. Business rule tools

You can use the Drools web application integrated in *Talend Administration Center* to define business rules using any of the following formats:

- Business Process: a workflow which describes the order in which a series of steps need to be executed, using a flow chart. It allows users to specify, execute and monitor their business logic using these processes.
- DSL Business Rule: technical rules that use the Domain Specific Language in a sentence that maps to a condition or action statement to be used in a rule. Variables can be defined in the sentence, and then used in the rule statement. For more information, see Authering Assets.
- DRL Rule: technical rules that use the Drools Rule Language which provides, via mapping properties file, support for natural language. For more information, see Authering Assets.
- Decision Table: another way of creating and modifying rules on the run via the **Decision Table** view.

  Decision tables are a tool that defines rules that are represented as tables. Non-technical users can see the steps of a decision laid out graphically.
- Decision Table (spreadsheet): Users may also author Decision Tables using Microsoft Excel spreadsheets.

- Guided Rule: rules created using the traditional rule syntax (statements). For more information, see *Creating business rules*.

16.3. Steps to follow when using Drools

Prerequisites: Your *Talend Administration Center* must have internet access, otherwise you may have an error when you try to use the Drools server.

Another way to avoid this error is to add *-Dorg.kie.demo=false and -Dorg.kie.example=false* into the *setenv.sh* file in the apache-tomcat/bin folder.

To use the Drools web application integrated in *Talend Administration Center*, proceed as the following:

1. Create an organizational unit, add a repository in the unit and then add a project in the repository.

   For detail information about using Drools, check Drools Workbench.

2. Create one or more data objects for the business rules.

3. Create new business rules.

   For more information about managing business rules, see *Working with business rules*.

4. Test the rules to ensure that they meet the requirements. For more information, see *How to test a rule*.

5. Build and deploy the rules.

   For further information, see *Building and deploying business rules*.

Your rules are now ready to be used in business environment. For example, use your studio to create a Job with the **tBRMS** component, set the connection between the studio and the Drools repository from which you want to retrieve a business rule and apply it to the data flow in a Job.

For further information about the **tBRMS** component, see the *Talend Components Reference Guide*.

For further information about how to centralize BRMS connections in the studio, see *Talend Studio User Guide*.

16.4. Accessing Drools web application

Prerequisites:

- You have already set correctly the Drools web application URL in the **Configuration** page of *Talend Administration Center* and your licence must allow the application. For more information, see *Setting up links to other Talend suite Web applications*

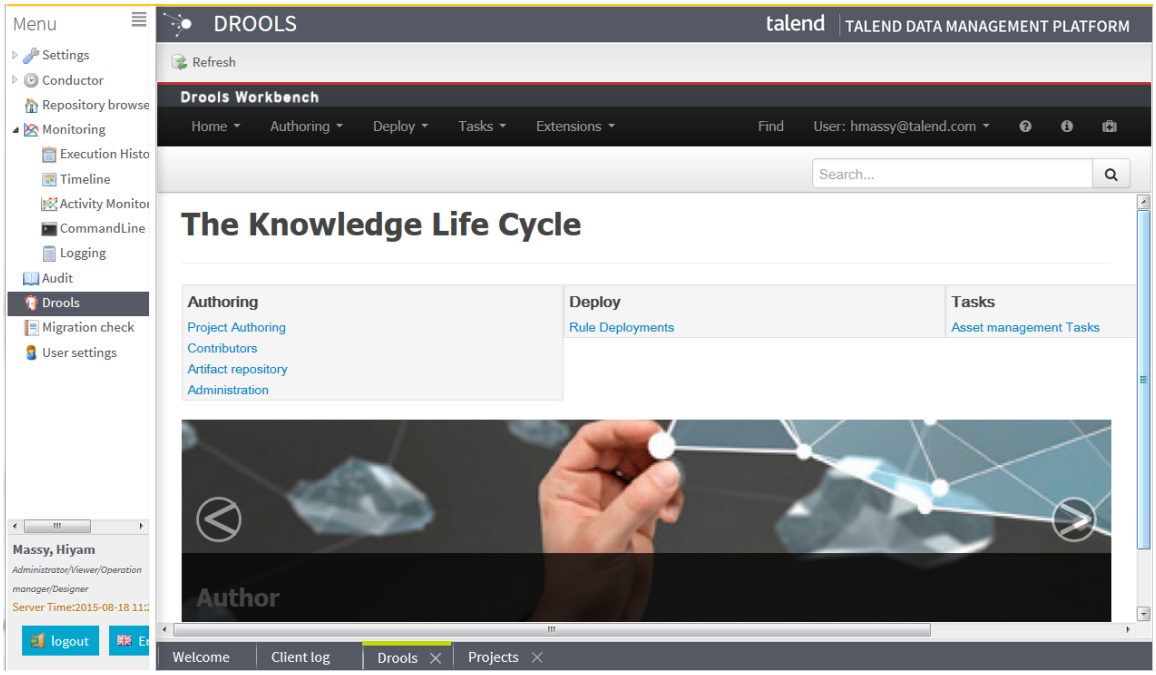
- Your *Talend Administration Center* must have internet access, otherwise you may have an error when you try to use the Drools server.

  Another way to avoid this error is to add *-Dorg.kie.demo=false and -Dorg.kie.example=false* into the *setenv.sh* file in the apache-tomcat/bin folder.

1. Log in to *Talend Administration Center*.

2. On *Talend Administration Center* home page and from the **Menu** tree view, click **Drools**.

   You log in to Drools web application using your *Talend Administration Center* account by default.



To log in to the Drools web application from outside *Talend Administration Center* in full screen mode:

1. Log in to *Talend Administration Center*.
2. In a new page in the same browser, type *http://<host name>:<port name>/kie-drools-wb*.

   You cannot use the same login/password of the Administration Center to access the **Drools** page in full screen mode.

All users that are defined in *Talend Administration Center* have by default the right to access the Drools web application. However, an Administrator can lock down the access to the business rules per package or per category.

The Drools interface is divided into:

- a banner on top of the page which shows the login of the current user of *Talend Administration Center*.
- Three main panels in the workspace to give quick access to all features accessible also from the menu bar.

Once the Drools web application is open, you can navigate around, open multiple tabs, view and edit various assets simply as you do with any application.

You can also access the Drools Workbench directly, not from within *Talend Administration Center*, if it is installed manually. For further information, see the *Talend Installation Guide*.

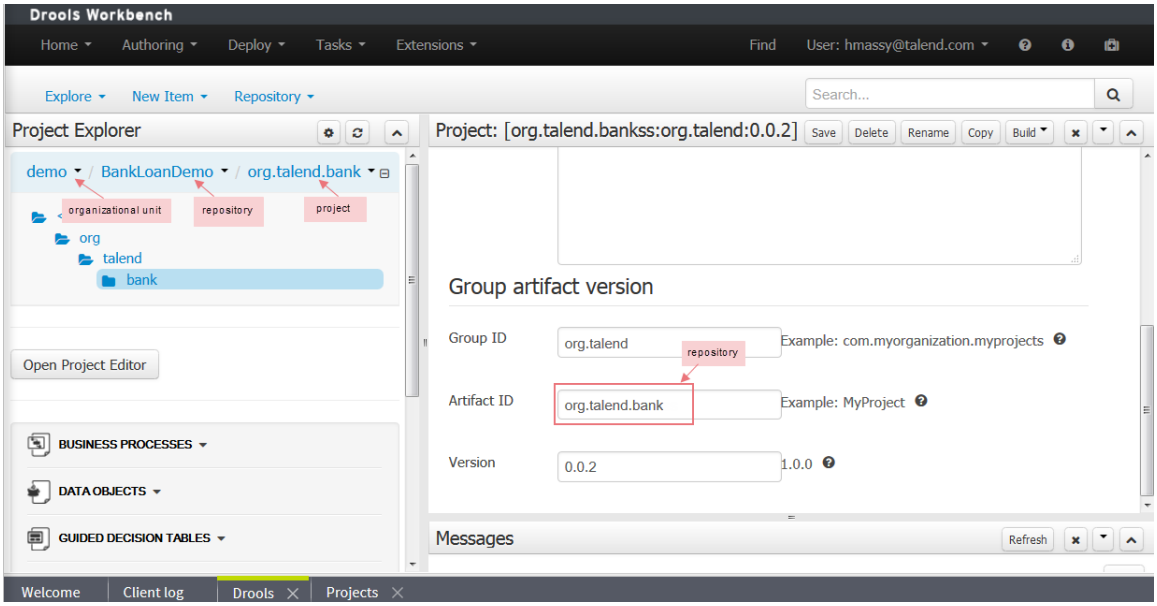
16.5. Working with business rules

The Drools web application integrated in *Talend Administration Center* enables you to visually create or modify business rules.

16.5.1. Prerequisites

To use the Drools web application, you must start by doing the following:

1. From the **Drools** page, create a new organization unit via **Authoring** > **Administration** > **Organizational Unites** > **Manage Organizational Unites** > **Add**.



2. For the repository, either:
   - Create a new repository via **Authoring** > **Administration** > **Repository** > **New repository**.
   - Clone a repository via **Authoring** > **Administration** > **Repository** > **Clone repository**.
3. Select the repository where to create the new project from the **Project Explorer** panel.
4. Create a project via **Authoring** > **Project Authoring** > **New Project**.
5. Create one or more data objects for the business rules via **Authoring** > **Project Authoring** > **New Item** > **Data Object**.
6. Create a package.

   A packages is used as a parent folder that groups all rule assets. For further information about packages, check Creating a package.

After finalizing the above steps, you can start by creating business rules. For more information, see *Working with business rules*.

For detail information about using Drools, check Drools Workbench.

16.5.2. Creating business rules

These sections explain in detail how to use the **Drools** page to define business rules. However, keep in mind that you must deploy the rule before being able to use it in any production environment. For further information, see *Building and deploying business rules*.

16.5.2.1. How to add a rule

From *Talend Administration Center*, you can create rules using `WHEN-THEN` statements with conditions that are logical groupings of logical operators. Based on data that comes from a variety of sources and departments, the business expert can then define actions, to be executed if the rule condition evaluates to **true**.

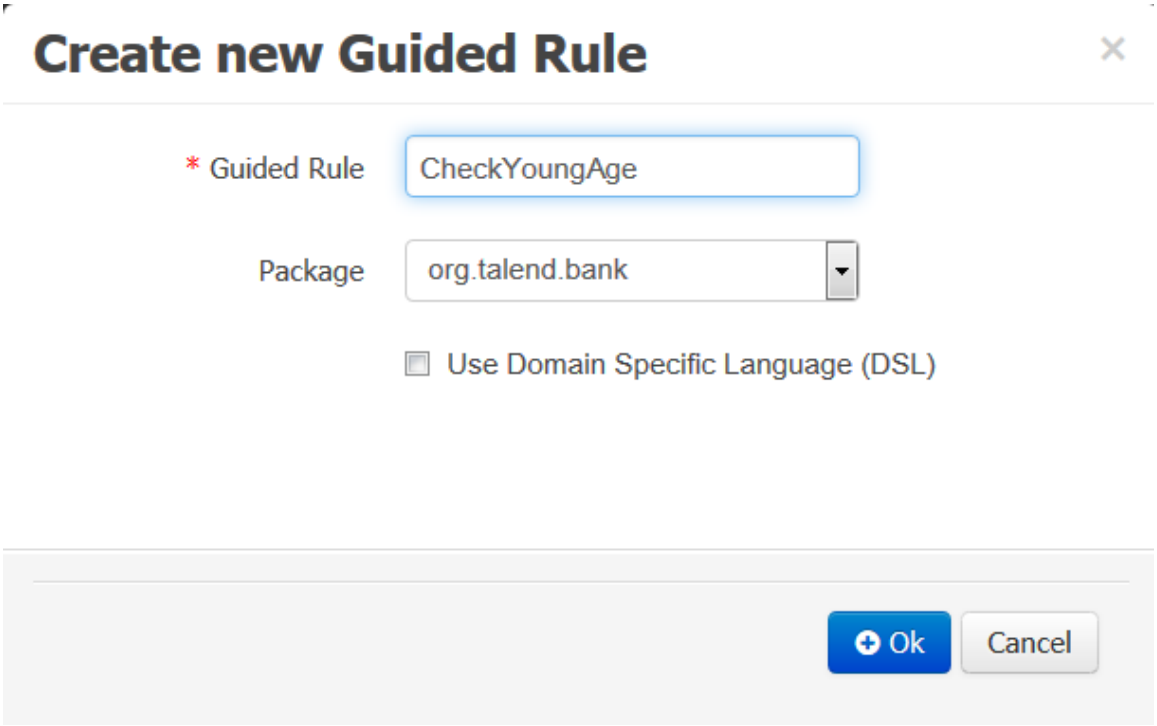
In the following example, you will create a Guided Rule named *CheckYoungAge* that will be used to trigger loan agreement decisions based on the age of the people who apply for bank loans.

Prerequisites: You have already defined an organizational unit, a repository and a project in Drools web application. For further information see *Steps to follow when using Drools*, and for detail information about using Drools, check Drools Workbench.

To create a business rule:

1. From the **Drools** page, click **Authoring** and select **Project Authoring**.
2. From the **New Items** list, select **Guided Rule**.

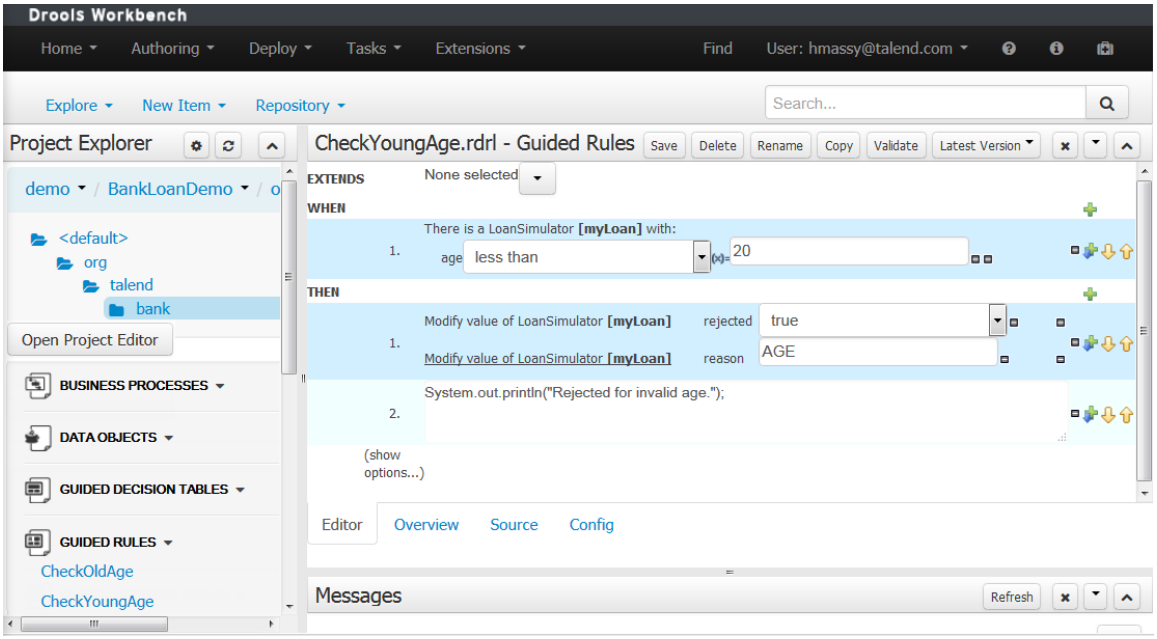
   The **[Create new Guided Rule]** dialog box opens.



3. In the **Guided Rule** field, enter a name for the new rule, *CheckYoungAge* in this example.
4. From the **Package** list, select the package in which you want to create the rule.

   The package list will include only the packages to which you have access.
5. Select the **Use Domain Specific Language (DSL)** check box if you want to provide access to a list of "DSL Sentences" from which you can choose a condition to add to the rule.
6. Click **OK** to complete the rule creation and close the dialog box.

   The new rule is added under the **Guided Rules** folder in the left panel and is opened in the rule editor in the workspace.



At any time, you can view a list of rules you have created by either selecting your category from the **Browse** panel, or selecting your package from the **Knowledge Bases** panel, and open a rule by clicking the corresponding **Open** button.

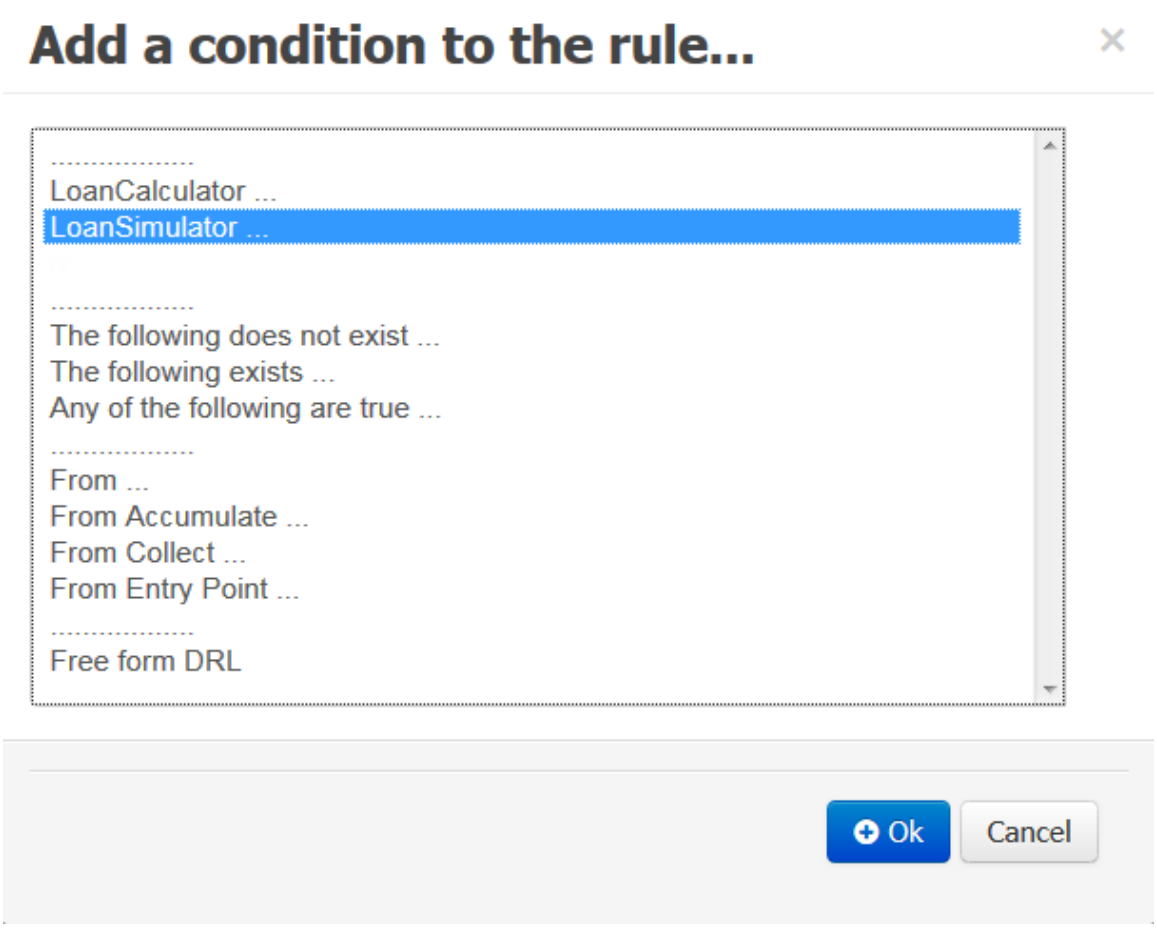
16.5.2.2. How to define a rule

Upon creating a business rule, you need to define the conditions and actions of your new rule in the `WHEN` and `THEN` statements.

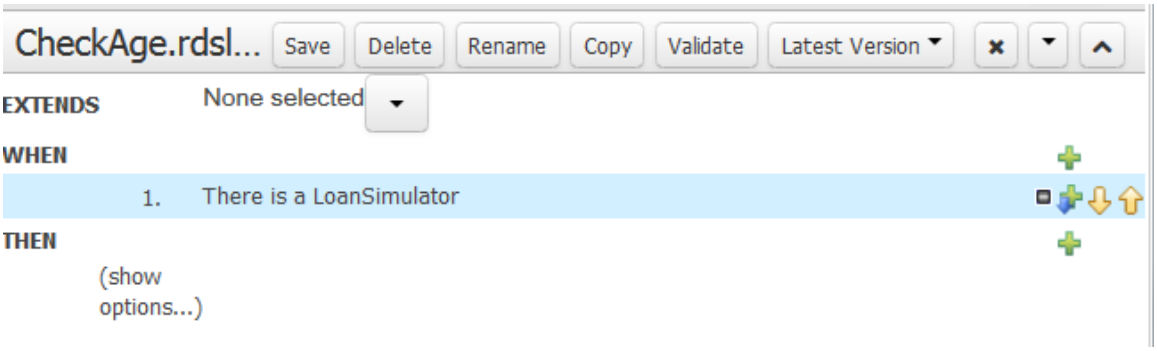
Suppose that you want to approve or disapprove a loan according to strict rules regarding the age of the borrower. The defined statement in the below example says that if the age of the person who wants to get a loan meets the specified conditions (younger than 20, or older than 70) then the loan will not be approved.

To define a condition in the `WHEN` statement, do the following:

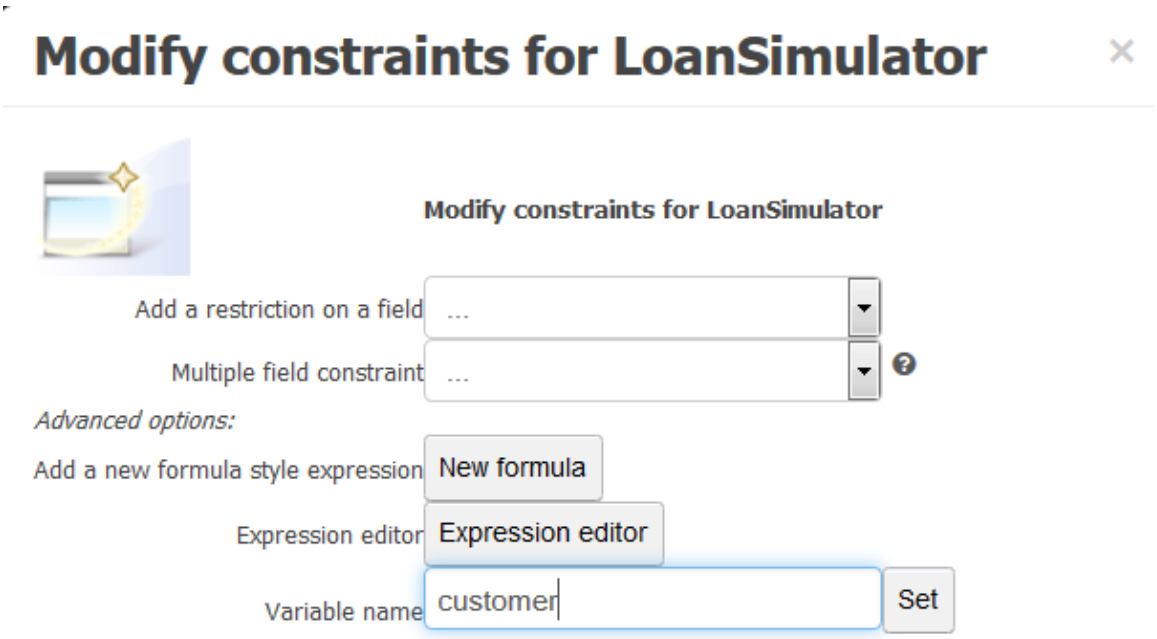
1. Click the green **[+]** button next to `WHEN` to open the **[Add a condition to the rule]** dialog box.



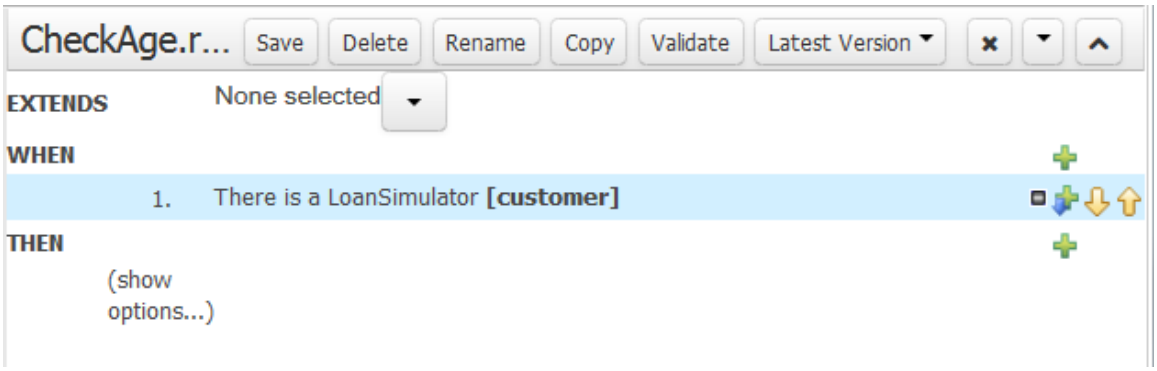
2. Select a class from the list, *LoanSimulator* in this example, and then click **OK**.



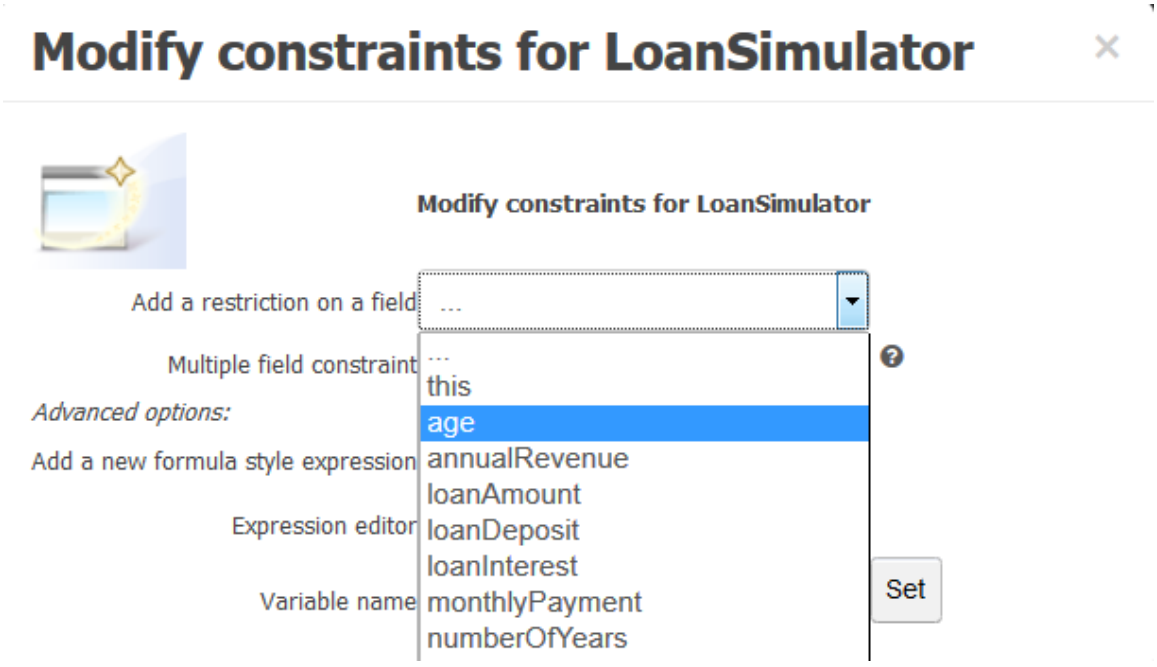
3. Click **There is a LoanSimulator** to open a dialog box and set a variable name.



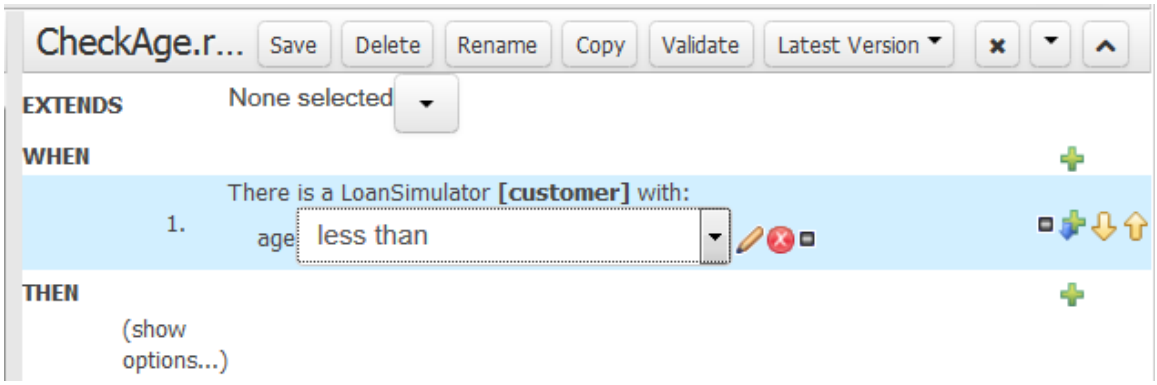
4. In the **Variable name** field, enter a variable name, *customer* in this example, and click **Set**. The variable name is written in the `WHEN` statement.



5. Click **There is a LoanSimulator [customer]** to open the **[Modify constraints]** dialog box again.

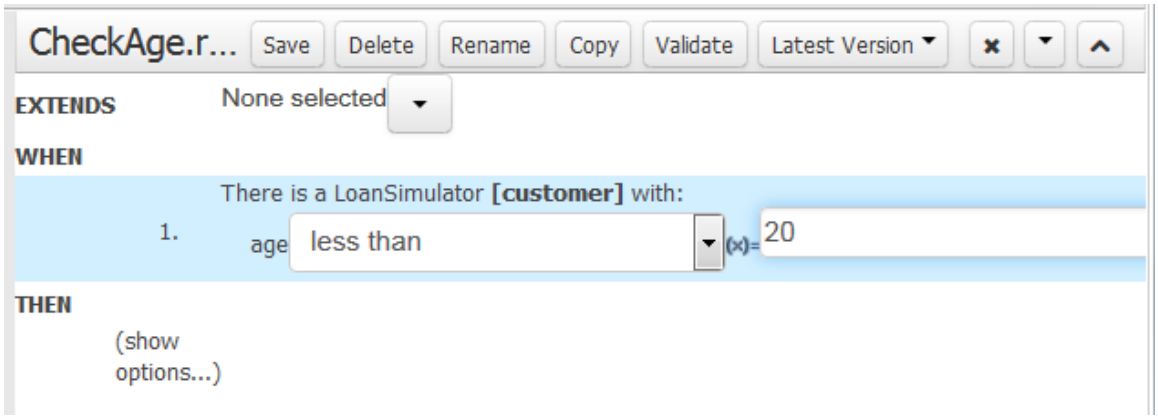


6. From the **Add a restriction on a field** list, select **age** to add an **age** field to the `WHEN` statement.

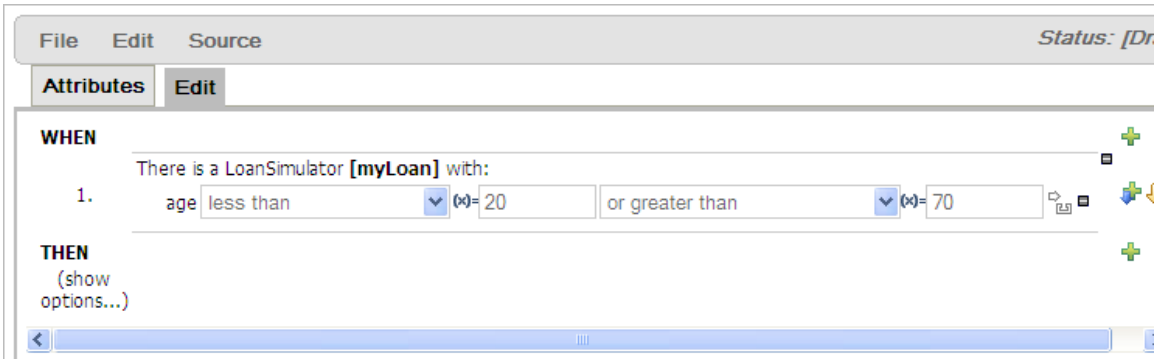


7. From the logical operators list, select a logical operator, **less than** in this example, and then click the pencil icon to open the **[Field value]** dialog box.

8. Click the **New formula** button to add a value field next the logical operator, and enter *20* in the field.



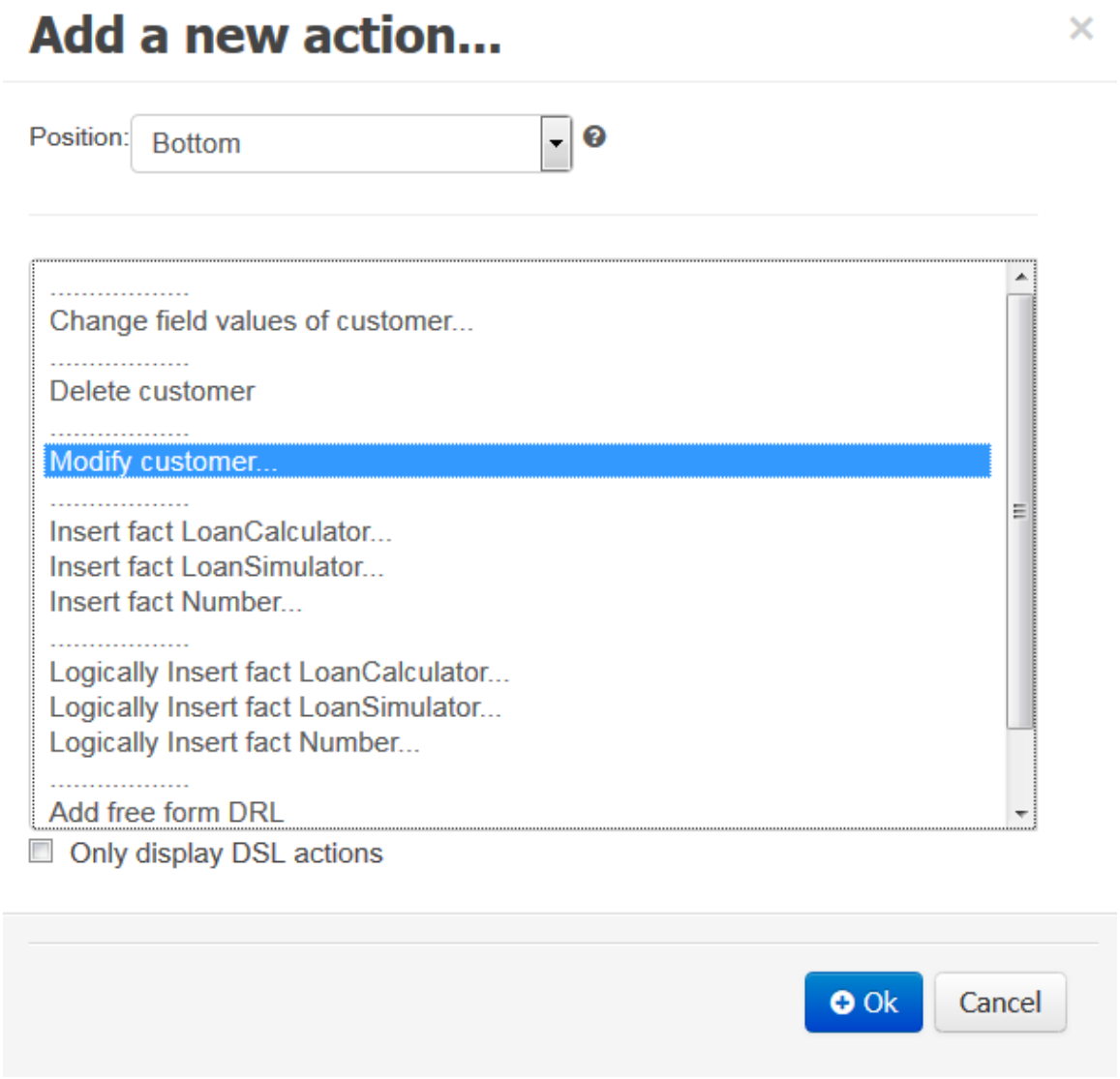
9. Click the arrow icon next to the value field to add another logical operator list, select **or greater than** from the list, and set the value to *70*.



Then, in the `THEN` statement, select the action (true or false) you want to take and set the reason for the selected action.

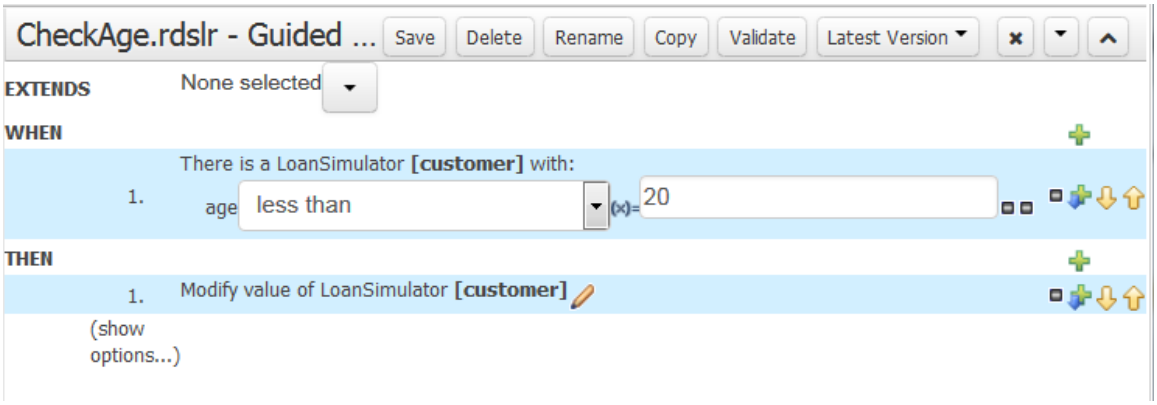
To define an action in the `THEN` statement, do the following:

1. Click the green **[+]** button next to `THEN` to open the **[Add a new action]** dialog box.

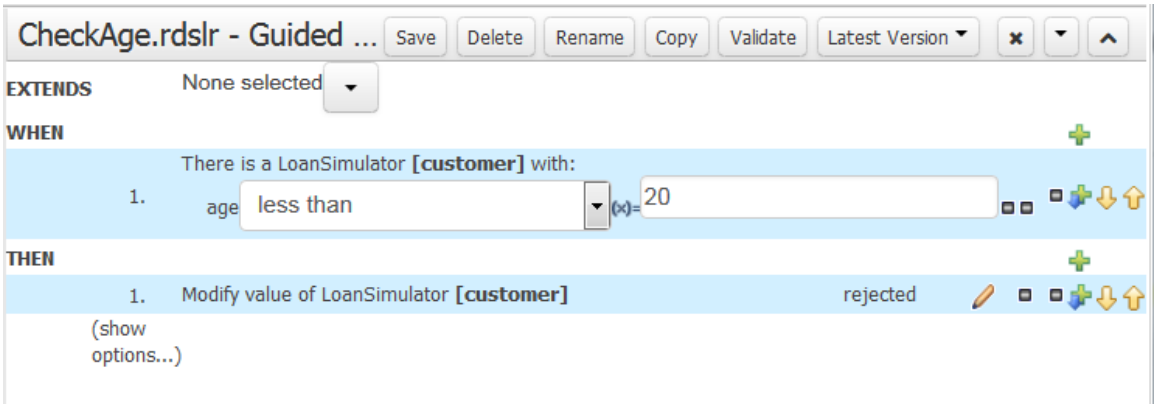


2. Select **Modify customer** from the list and click **OK**.

   The action is displayed in the `THEN` part.

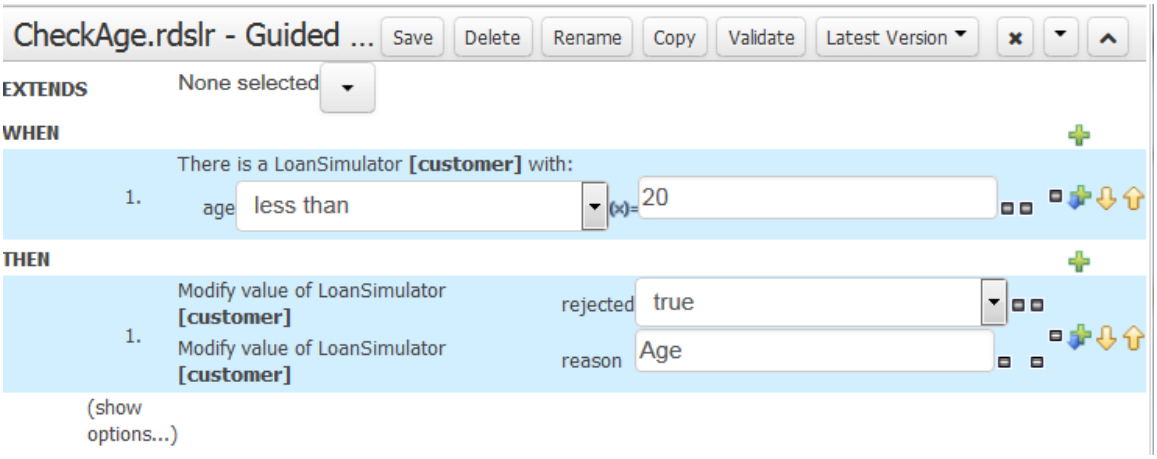


3. Click the small pencil icon to open the **[Add a field]** dialog box, select **rejected** from the list to add the rejected field to the `THEN` part.

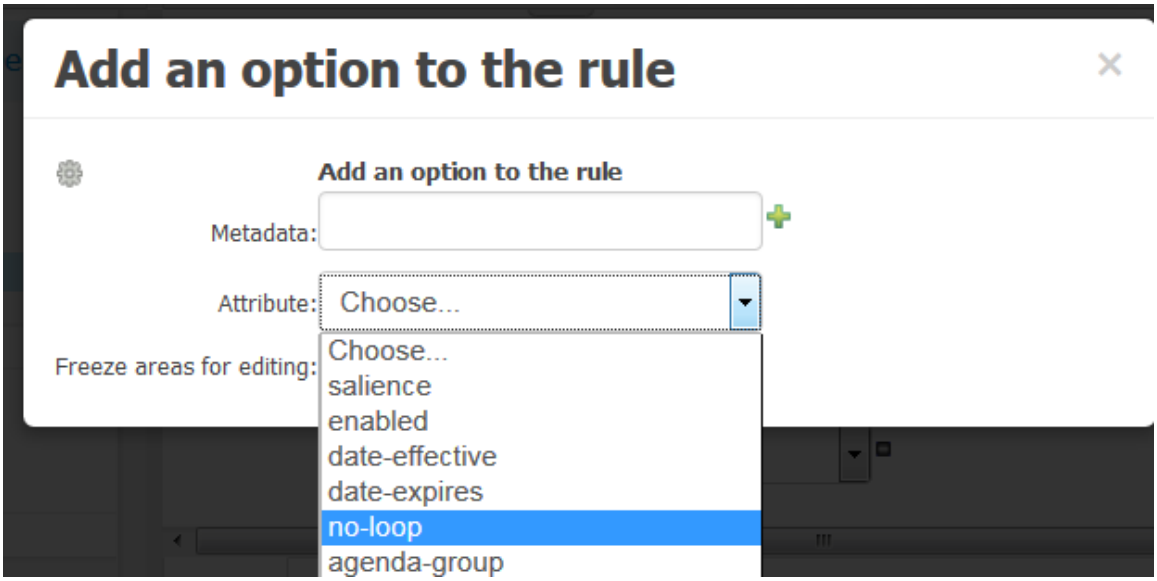


4. Click the pencil icon next the rejected field to open the **[Field value]** dialog box, click **Formula** to add formula list next to the **rejected** field, and select **true** from the list.

   Following the same procedure, add a **reason** field and give it a literal value of *AGE*.



5. Click **show options...** and then click the green **[+]** button to open the **[Add an option to the rule]** dialog box.



6. Select **no-loop** from the **Attribute** list. Then, select the **no-loop** check box in the editor to avoid infinite loop.

7. If required, in the **date-effective** and **date-expires** fields set a start and end dates, time range, for the rule to be executable.
8. Save the rule.

   You can test the rule to ensure that it meets the requirements. For more information, see *How to test a rule*.
9. Build and deploy the rule.

   For further information, see *Building and deploying business rules*.

   The new rule is now ready to be used in a production environment to trigger a specific action based on the set conditions. For example, use your studio to create a Job with the **tBRMS** component, set the connection between the studio and the Drools repository from which you want to retrieve a business rule and apply it to the data flow in the Job.

   For further information about the **tBRMS** component, see the *Talend Components Reference Guide*.

16.5.2.3. How to test a rule

You can define test cases for the rules you create. These test cases are stored in the repository and can be re-run to confirm that changes in any of the rule conditions have not created problems for example.

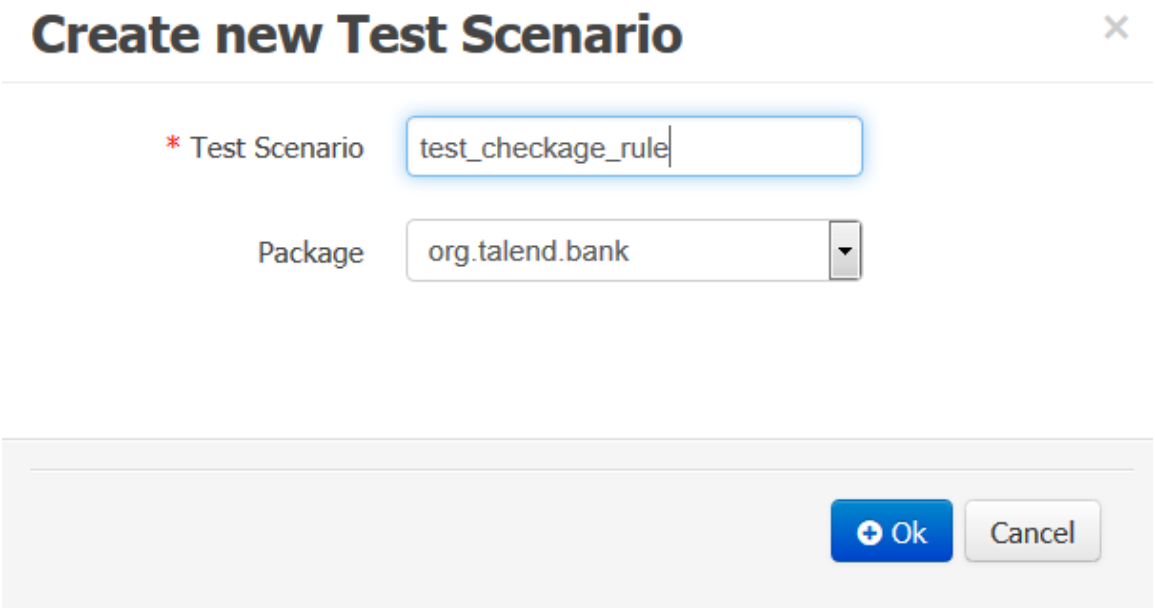
With this integrated testing process, users are kept involved in business rule development, testing, and maintenance.

In the following example, you want to create a test scenario to test the business rule created in *Creating business rules*.

To define a test case and run a testing process, complete the following:

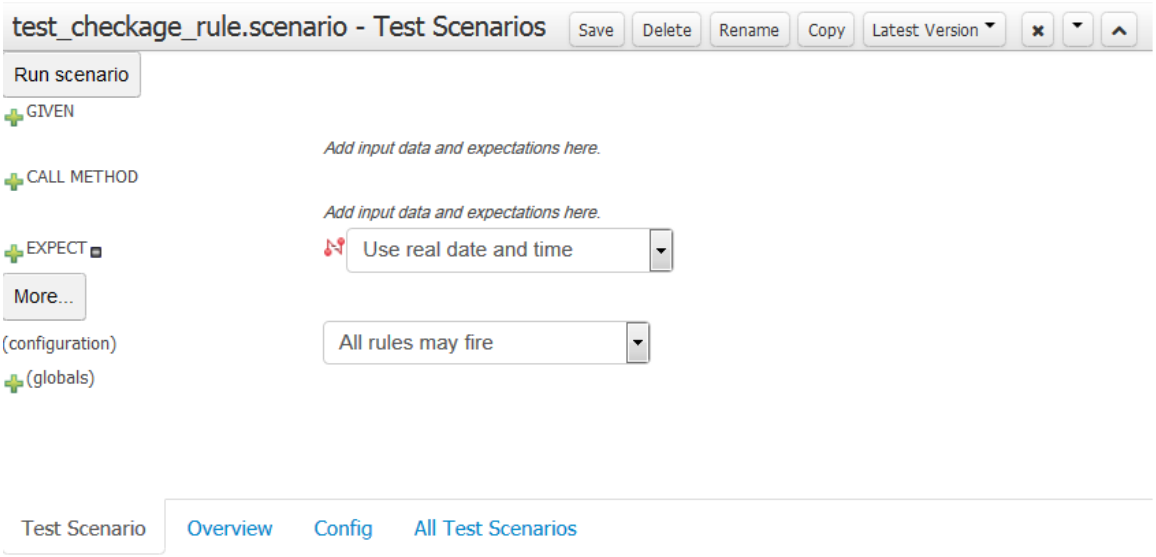
1. From the **Drools** page, click **Authoring** and select **Project Authoring**.

2. Click **New Item** and select **Test Scenario** to open the **[Create a new test scenario]** dialog box.

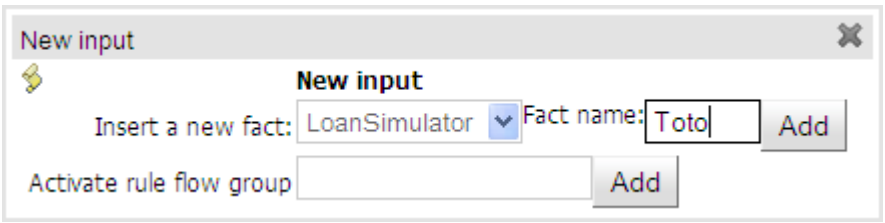


3. Enter a name for the test scenario in the **Test Scenario** field, select the package that hold the business rule to be tested from the **Package** list and click **OK**.

   The test scenario editor opens in the workspace.



4. Click the green **[+]** button next to **GIVEN** to open the **[New input]** dialog box and add a new data input to the scenario.

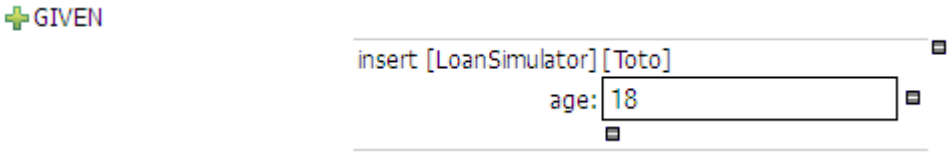


5. Select *LoanSimulator* from the **Insert a new fact** list, set a fact name and click **Add**.

6. In the test editor, click **Add a field** under the new fact name, select **age** from the dialog box that opens. Click **OK**.

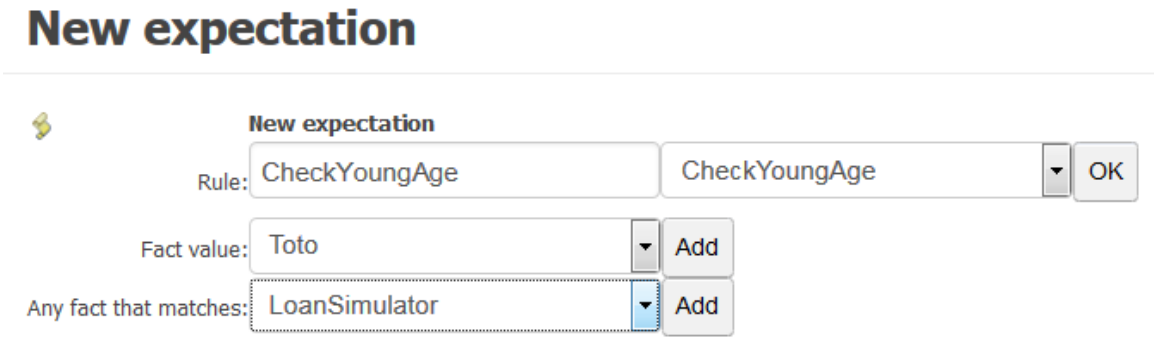
The **age** field is displayed under the fact name.

7. Click the modify icon next to **age** and enter a value that is either smaller than *20* or greater than *70*.

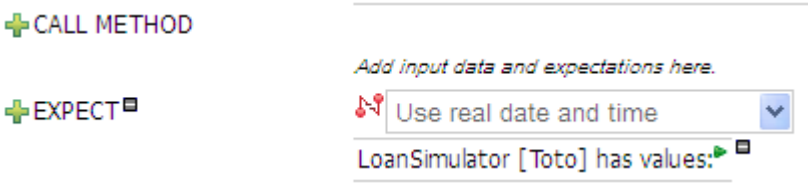


This means the test will be done against this value.

8. Click the green **[+]** button next to **EXPECT** to open the **[New expectation]** dialog box.



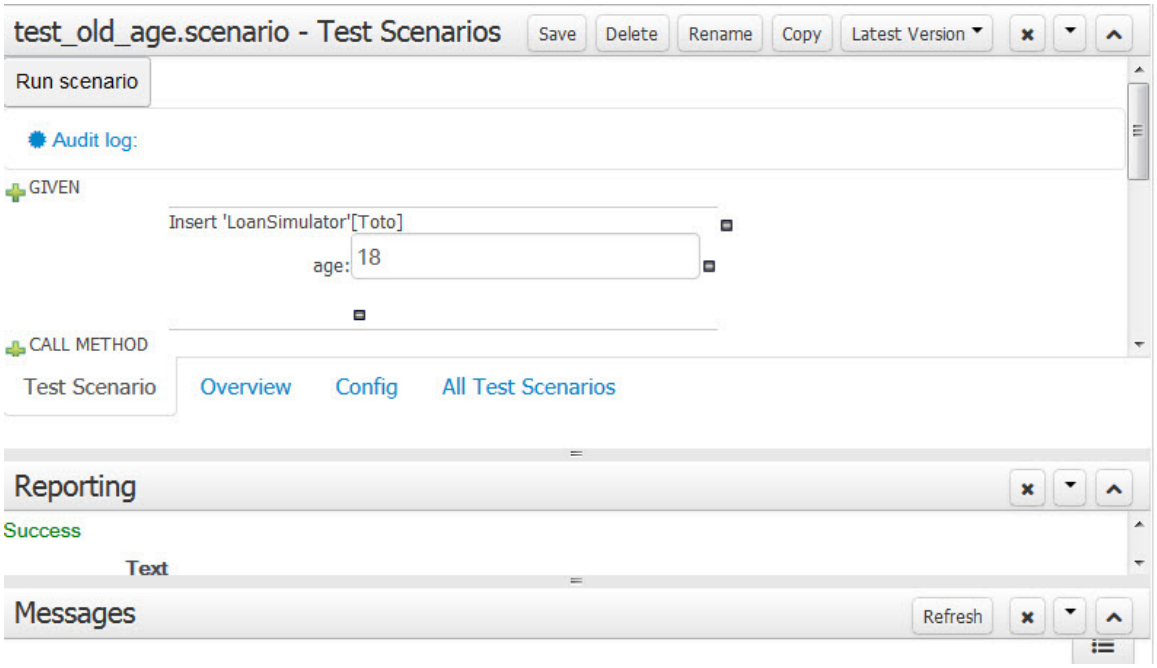
9. Select the matching class and click the **Add** button next to the **Fact value** field.



10. Click the text that is added to the editor, *LoanSimulator[Toto] has values*, and select **rejected** from the dialog box that opens. Click **OK**.

11. Save your changes and click **Run scenario**.

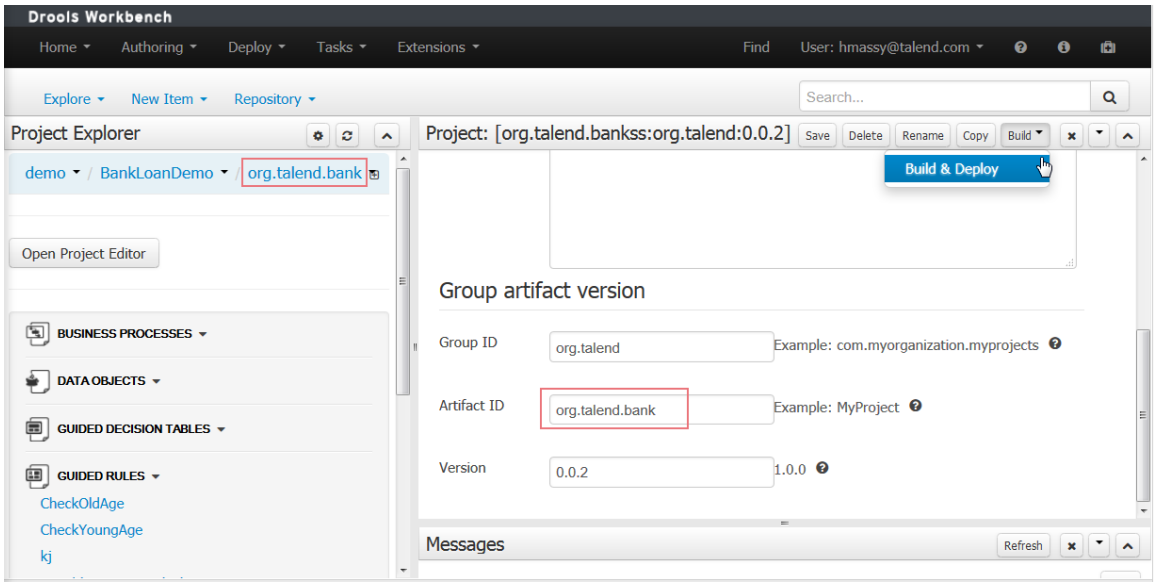
A confirmation message is displayed and the testing results are given in the **Reporting** panel and a log file is created in the editor.



16.6. Building and deploying business rules

Once you have finalized the creation of business rule within a project as outlined in *Creating business rules*, you must deploy the project to the Maven Artifact Repository of the web application. This will make the rule usable in production environments.

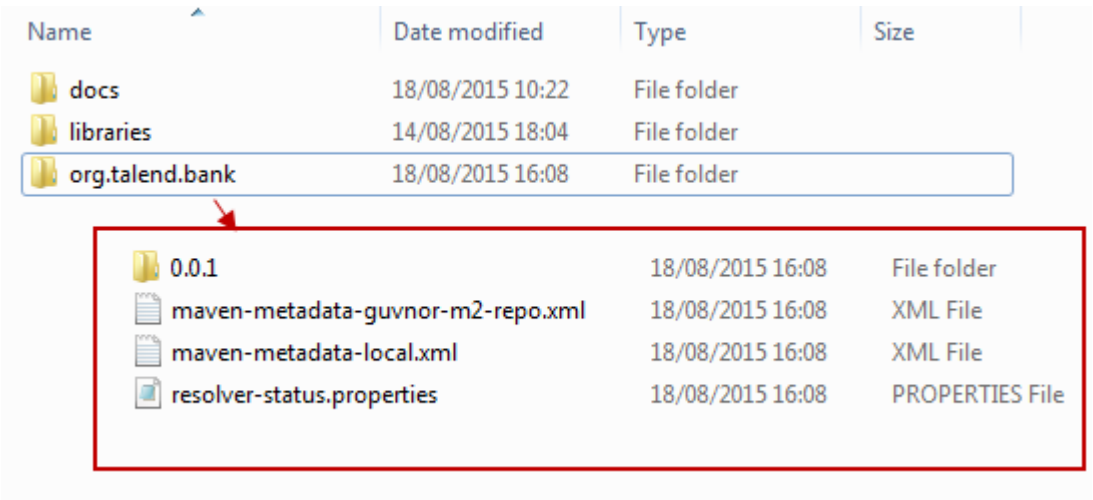
1. From the **Drools** page, open the project you want to deploy, *org.talen.bank* in this example.
2. Click the **Open Project Editor** tab.



The project name must be identical with the Maven artifact repository set in the **Artifact ID** field. Otherwise, the rule will not work when you use it in a production environment. For further information, check Repositories.

3. On the top right corner of the project editor, click **Build** and select **Build & Deploy**.

   All the project dependencies are deployed to the Maven repository at *$M2_HOME*.



16.7. Cloning a Drools repository

You can use the **Drools** page incorporated in *Talend Administration Center* to import projects where business rules are stored and use them in production environments such as the **tBRMS** component.

1. From the **Drools** page, select **Authoring** > **Administration**.
2. On the menu bar, click **Repository** > **Clone repository**.
3. In the open dialog box, set the connection information to the repository you want to clone and click **Clone** to import the project holding the business rules.

   In this example, you want to clone the *BankLoanDemo* repository from Git:

   - set *BankLoanDemo* as repository name,

   - set *demo* as organizational unit name,

   - set the URL to the Git repository from which you want to import the project which stores the business rules.

   - set your connection authentication to the Git repository.
4. Deploy the project you imported to the Maven Artifact Repository. For further information, see *Building and deploying business rules*.

   This will make the rules usable in Jobs with the **tBRMS** component. For further information about the **tBRMS** component, see the *Talend Components Reference Guide*.

Chapter 17. Auditing projects

The **Talend Project Audit** tool evaluates different aspects of the Jobs implemented in a project realized in *Talend Studio* with the aim of providing solid quantitative and qualitative factors for process-oriented decision support.

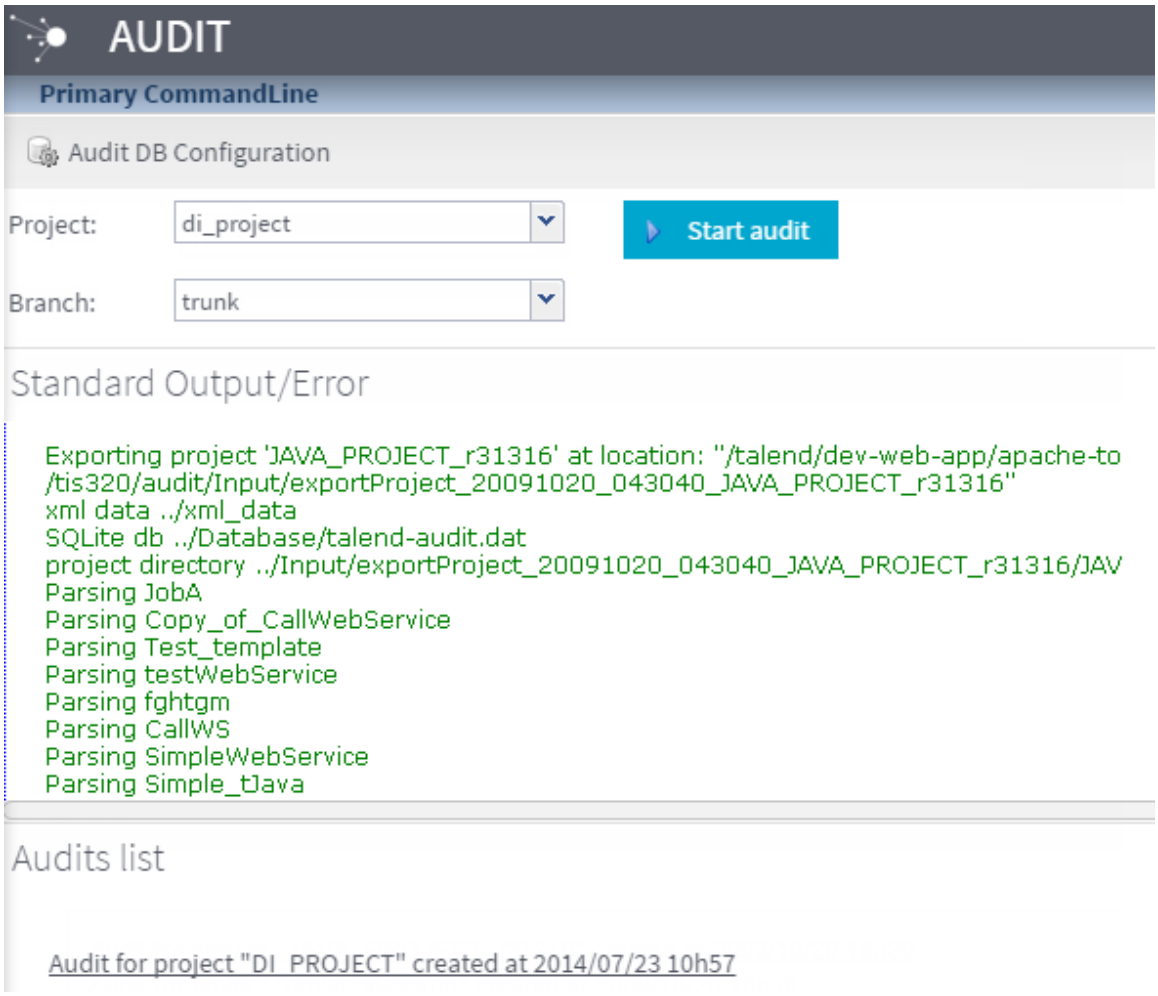
Access to the **Audit** page depends on your license. For more information, refer to *What modules and features are available depending on your license* .

17.1. Auditing a project

Only users that have the role and rights of Operation Manager or Designer can have read-write access to the audit item. Other types of users can have read-only access or no access. For further information on access rights, see User roles/rights in the Administration Center. When a user of the Administration Center opens this page, he/she will have access only to the items for which the user has been granted the appropriate authorization by the Administrator.

To collect information about job operations designed in *Talend Studio*:

1. In the **Menu** tree view of the Administration Center, click **Audit** to open the corresponding page.



2. In the **Audit** page, select the project to audit in the **Project** list.
3. In the **Branch** list, select the branch which the project of interest belongs to.
4. Click **Start audit**. A message appears to give you the status of the audit operation.

Audit information about the selected project is displayed in the **Standard Output** list and an audit item corresponding to the project you previously selected is displayed in the **Audit list**. Click this item to open or save the pdf file that lists the audit results in the directory you have configured in the **Configuration** page.

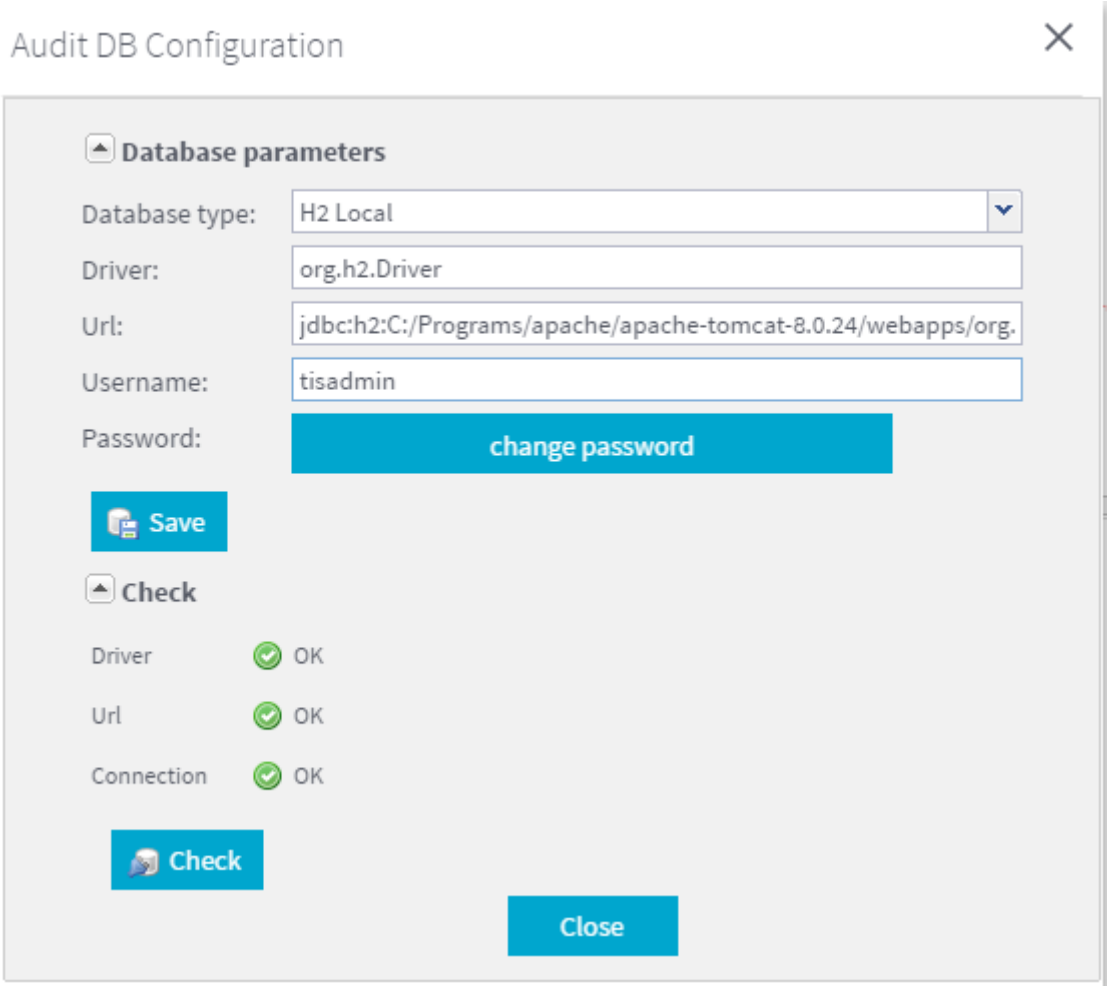
For further information about how to configure the audit parameters in the **Configuration** page, see *Checking the configuration for audit*.

For more information regarding **Audit**, see *Talend Project Audit User Guide*.

17.2. Customizing audit database

Talend Administration Center provides the default H2 audit database, *talend_audit*. But when needs be, you can create a custom audit database from this **Audit** page.

To do this, click the **Audit DB Configuration** button on top of the current page to open the corresponding window.



This figure is an example of the configuration window. In this window, enter the custom database parameters in the corresponding fields respectively and then click **Save**.

This way, your custom audit database is created at the address you have defined in the **Url** field of this window.

For further information about the meaning of each field, see *Accessing the Administration Center*.

To define the type of the audit database you are creating and the driver you need to use, you can click the exclamation icon next to the **Url** and the **Driver** fields respectively and select the available options accordingly.

Appendix A. CommandLine features

CommandLine is the equivalent of *Talend Studio* without GUI. It also helps executing Jobs in batch mode for example.

At any time, and in any mode, you can display the full Help by typing in `help`. The Help content provides an exhaustive list of commands and their respective description.

CommandLine has three operating modes accessible from the standalone/basic mode:

- Shell mode, see *Shell mode*.
- Server mode, see *Server mode*.
- Script mode, see *Script mode*.

For examples of use, see:

- *Generating a Job created with a Job creation API using the CommandLine*.
- *Executing a Job on a server with SSL enabled using the CommandLine*.
- *Building a Job using the CommandLine*.
- *Publishing a Service, a Route or a data service Job into an Artifact repository using the CommandLine*.

For a list of all the commands that can be used in the CommandLine, see the article CommandLine API documentation.

A.1. CommandLine overview

The CommandLine offers the same basic functionalities as *Talend Studio* and it is used to generate and export the Jobs developed with *Talend Studio* onto the Job servers, or export Services, Routes and data service Jobs onto Runtime servers. To launch the CommandLine on Linux, you have to run the commandline.sh file. To launch the CommandLine on Windows, you have to run the commandline.bat file.

The commandline file contains three different parts:

- the name of the *Talend Studio* executable corresponding to your OS, for example: `./Talend-Studio-linux-gtk-x86`
- operating options, for example:

  `-nosplash`, no interface is displayed.

  `-application org.talend.commandline.CommandLine`, the application is launched in commandline mode.

  `-consoleLog`, the logs are displayed in the console.

  `-data commandline-workspace`, specify the path and name of the commandline workspace.
- the operating mode, for example: `startServer -p 8002`

If you want to modify the default settings, you can edit the file, and set it according to your need.

If you want to run your CommandLine in background on Linux, you first need to disable the shell. To do so:

1. Edit the commandline.sh file.
2. Add the `--disableShellInput` command.
3. Save your file.

Example of use of this command:

```
./Talend-Studio-linux-gtk-x86 --disableShellInput -nosplash
-application org.talend.commandline.CommandLine -consoleLog -data commandline-workspace
startServer -p 8002
```

Then you can execute your CommandLine in background. To do so, do the following:

1. Switch to the `<CommandlinePath>`.
2. Enter the command:

   ```
   ./commandline.sh &
   ```

Once the commands have been executed, you can close the CommandLine window and it will not exit the service.

The CommandLine can be executed in four different modes, according to your need:

- Standalone/Basic mode, see *Standalone/Basic mode*.
- Shell, see *Shell mode*.
- Server, see *Server mode*.
- Script, see *Script mode*.

The most common mode used is the Server mode.

A.2. Operating modes

If your operating system shell provides a graphical user interface, you just have to double-click the commandline.bat or commandline.sh file (according to your OS) to run the CommandLine. If your operating system shell provides a command-line interface, switch to the CommandLine path and enter the command: `./commandline.sh` to run the CommandLine.

To switch between the different operating modes and execute any command, you can either edit the commandline file if you are using a graphical shell or you can do it directly from the command-line if you are using a command-line shell.

A.2.1. Standalone/Basic mode

Standalone/basic is CommandLine's default mode. This mode allows you to execute a single command.

In Standalone mode, CommandLine switches off after executing all commands passed on through the list of arguments. For example, on Linux you can display the Help content using the following arguments:

1. Switch to the `<CommandlinePath>`.
2. Enter in the shell:

```
./Talend-Studio-linux-gtk-x86 -nosplash -application
 org.talend.commandline.CommandLine
-consoleLog -data commandline-workspace help
```

Once the commands have been executed, CommandLine exits.

From this mode, you can switch to the Shell, Server and Script modes, detailed hereafter.

A.2.2. Shell mode

In Shell mode, you can enter the CommandLine commands once and then only have to enter CommandLine's own keywords without having to restart CommandLine each time.

To launch CommandLine in shell mode on Linux,

1. Switch to the CommandLine directory.
2. Enter the following command to switch to Shell mode:

```
./Talend-Studio-linux-gtk-x86 -nosplash -application
 org.talend.commandline.CommandLine
-consoleLog -data commandline-workspace shell
```

3. Now, enter your CommandLine command, for example:

```
initRemote http://myAdminCenterURL.com -ul a@b.c -up mypassword
```

Make sure you have entered correct user credentials. If the credential information is correct, it will be saved automatically and be reused during project logon. Otherwise, some error information will be prompted.

4. When the output of the above command is returned by the CommandLine, enter the command:

```
listProject
```

To access the help that lists all the valid commands, you can start CommandLine in standalone mode and run the help command. The most complete help is provided by CommandLine in standalone mode, since in standalone mode you can execute CommandLine in shell or server mode.

A.2.3. Server mode

In Server mode, CommandLine can be accessed from the network for the purpose of executing commands. You do not have to wait the execution of a command to enter another one, you can enter several commands that will be executed in the same order you requested them.

To start the CommandLine in Server mode, just enter:

```
./Talend-Studio-linux-gtk-x86 -nosplash -application org.talend.commandline.CommandLine
-consoleLog -data commandline-workspace startServer -p 8002
```

If needed, you can add the parameter `--disableLocalMode` to disable the local mode of the CommandLine. After that, only the commands `help` and `initRemote` are allowed.

To stop the server, enter:

```
echo "stopServer" | telnet localhost 8002
```

To access a Remote CommandLine, open your OS commandline and enter the following command:

```
telnet localhost 8002
```

You should replace *localhost* by the IP address of the system on which you wish to stop the server remotely, and replace the default installation port *8002* by the port in your configuration.

A.2.4. Script mode

In Script mode, CommandLine reads a script file containing a list of commands and executes them. To do so, type in the following command in the commandline.sh:

```
./Talend-Studio-linux-gtk-x86 -nosplash -application org.talend.commandline.CommandLine
-consoleLog -data commandline-workspace scriptFile /tmp/myscript
```

If needed, you can add the parameter `--disableLocalMode` to disable the local mode of the CommandLine. After that, only the commands `help` and `initRemote` are allowed.

Example of script file read by the CommandLine:

```
initRemote http://localhost:8888/org.talend.administrator -ul admin@company.com -up
 passwd
logonProject -pn myProject
exportItems /tmp/myitems.zip
```

A.3. Generating a Job created with a Job creation API using the CommandLine

Talend offers you the possibility to create a data integration process without any user interface. You can write a script describing the properties of all the elements of your process: components, connections, contexts, etc. in a jobscript file and generate the corresponding job via the CommandLine.

To do so:

1. Launch your CommandLine. For more information on how to launch the CommandLine, see *Operating modes*.
2. Connect to your repository with the `initLocal` or `initRemote` commands. Example:

   ```
   initRemote http://localhost:8080/org.talend.administrator -ul admin@company.com -up
    admin
   ```

   The parameter values are given as examples and need to be replaced with your actual information (port, credentials). For more information on how to use these commands, see the `help` provided in the CommandLine.
3. Connect to your project and branch/tag with the `logonProject` command. If you do not know the name of your project or branch/tag, type in the `listProject -b` command first. Example:

   ```
   logonProject -pn di_project -ul admin@company.com -up admin -br branches/v1.0.0
   ```

   The parameter values are given as examples and need to be replaced with your actual information (project/branch/tag name, credentials). For more information on how to use this command, see the `help` provided in the CommandLine.
4. Type in the following command to generate a Job from your Job script:

   ```
   createJob NameOfJob -sf path\yourJobscript.jobscript
   ```

   The Job is created in your CommandLine workspace in the process folder: `commandline-workspace \YourProjectName\process`.

If you want to open this Job in *Talend Studio*, you will have to import it in the *Talend Studio* workspace first.

For more information on how to import items in *Talend Studio*, see the *Talend Studio User Guide*.

The creation of job scripts and the generation of its corresponding Job design can also be done from *Talend Studio* which provides a user-friendly Job script API Editor. For more information on Job script creation, see the *Talend Studio User Guide*.

A.4. Executing a Job on a server with SSL enabled using the CommandLine

Talend offers you the possibility to execute a Job on a server via the CommandLine with SSL enabled . SSL allows you to encrypt data prior to transmission.

For more information on how to generate a Job via the CommandLine, see *Generating a Job created with a Job creation API using the CommandLine*.

To launch a Job on a JobServer with SSL enabled:

1. Launch your CommandLine. For more information on how to launch the CommandLine, see *Operating modes*.

2. Connect to your repository with the `iniLocal` or `initRemote` commands. For more information on how to use these commands, see the `help` provided in the **CommandLine**.

3. Connect to your project with the `logonProject` command. For more information on how to use this command, see the `help` provided in the **CommandLine**.

4. Type in the following command to launch a Job (named *jobName*) on the server named *myServer*:

   ```
   executeJobOnServer jobName --execution-server myServer --job-version 0.1 --job-
   context myJobContext -useSSL
   ```

   You can enter either `-useSSL` or `-use-ssl-option` as both commands result in enabling SSL.

You also have the possibility to enable SSL on your JobServer on the Studio's side. For more information, see the *Talend Studio User Guide*.

A.5. Building a Job using the CommandLine

Building a Job allows you to generate an archive of a specific Job along with all of the files required to execute the Job, including the *.bat* and *.sh* as well as any context-parameter files or other related files. This archive can then be used to deploy and execute the Job on a server without having to generate it via the CommandLine first.

For more information, see Adding an execution task on a pre-generated Job and the *Talend Studio User Guide*.

1. Launch your CommandLine. For more information on how to launch the CommandLine, see *Operating modes*.

2. Connect to your repository with the `initLocal` or `initRemote` commands. Example:

   ```
   initRemote http://localhost:8080/org.talend.administrator -ul admin@company.com -up
    admin
   ```

   The parameter values are given as examples and need to be replaced with your actual information (port, credentials). For more information on how to use these commands, see the `help` provided in the CommandLine.

3. Connect to your project and branch/tag with the `logonProject` command. If you do not know the name of your project or branch/tag, type in the `listProject -b` command first. Example:

   ```
   logonProject -pn di_project -ul admin@company.com -up admin -br branches/v1.0.0
   ```

   The parameter values are given as examples and need to be replaced with your actual information (project/branch/tag name, credentials). For more information on how to use this command, see the `help` provided in the CommandLine.

4. Type in the following command to build your Job archive in the folder of your choice:

   ```
   buildJob MyJob -dd C:/products/tac/builds -af MyJob_0.1 -jc Default -jv 0.1
   ```

   The parameter values are given as examples and need to be replaced with your actual information (Job name/context/version, target archive directory, archive name). In this example, a Job named *MyJob* is built in the archive named *MyJob_0.1.zip*, in the *C:/products/tac/builds* folder. The best practice is to put the archive file in the Job archive folder, which path is defined in the **Job Conductor** node of the **Configuration** page.

   For more information on how to use this command, see the `help` provided in the CommandLine.

You can build a Route in the same way using the `buildRoute` command.

A.6. Publishing a Service, a Route or a data service Job into an Artifact repository using the CommandLine

Talend offers you the possibility to publish a Service, a Route or a data service Job into an Artifact repository via the CommandLine.

To publish a Service into an Artifact repository:

1. Launch your CommandLine. For more information on how to launch the CommandLine, see *Operating modes*.
2. Connect to your repository with the `initLocal` or `initRemote` commands. Example:

   ```
   initRemote http://localhost:8080/org.talend.administrator -ul admin@company.com -up
    admin
   ```

   The parameter values are given as examples and need to be replaced with your actual information (port, credentials). For more information on how to use these commands, see the `help` provided in the CommandLine.
3. Connect to your project and branch/tag with the `logonProject` command. If you do not know the name of your project or branch/tag, type in the `listProject -b` command first. Example:

   ```
   logonProject -pn di_project -ul admin@company.com -up admin -br branches/v1.0.0
   ```

   The parameter values are given as examples and need to be replaced with your actual information (project/branch/tag name, credentials). For more information on how to use this command, see the `help` provided in the CommandLine.
4. Type in the following command to publish a Service into the Nexus artifact repository:

   ```
   publishService serviceName --version 0.1 --group myGroup --artifactId myService --
   publish-version 0.1
   --artifact-repository http://localhost:8081/nexus/content/repositories/releases/ --
   username admin --password admin123
   ```

You can publish a Route or a data service Job into an Artifact repository in the same way using the `publishRoute` or `publishJob` command.

Appendix B. Non-GUI operation in metaServlet

MetaServlet is a REST webservice that allow you to administrate *Talend Administration Center* programmatically. You can connect to *Talend Administration Center* and perform actions there, for example, launching a Job, by calling the metaServlet from an external scheduler.

For information about how to launch metaServlet, the JSON parameters and the `help` command, see:

- *Calling metaServlet*.
- *Parameters and actions in metaServlet*.

For examples of use, see:

- *Using Scripts to Call MetaServlet Actions*.
- *Using MetaServlet to print the log file of a task*.
- *Running a task with context parameters using MetaServlet* .
- *Executing a task and returning its status using MetaServlet*.
- *Using MetaServlet to handle ESB execution tasks*.

B.1. Calling metaServlet

MetaServlet is a REST webservice that allow you to administrate *Talend Administration Center* programmatically.

You can connect to *Talend Administration Center* and perform actions there by calling the metaServlet from an external scheduler. To do so:

1. Open the Windows command line or Linux terminal, and go to the following directory:

   ./org.talend.administrator/WEB-INF/classes

2. To call the metaServlet on Windows, run the *MetaServletCaller.bat* file.

   To call the metaServlet on Linux, run the *MetaServletCaller.sh* file.

For users who want to use metaServlet as a Web API, note that the typical URL generated by your requests reads as follows:

localhost:8080/<ApplicationPath>/metaServlet?<UserRequest>, for example

http://localhost:8080/org.talend.administrator/metaServlet?
eyJhY3Rpb25OYW1lIjoiaGVscCIsImNvbW1hbmROYW1lIjoidXNlckV4aXN0In0=

Note that you first need to encode your *<User Request>* (JSON arguments) in Base64. For more information on how to invoke the *Talend Administration Center* API interactively, see the article How to use Talend Administration Center's API.

B.2. Parameters and actions in metaServlet

The following sections describe the functions of the JSON parameters used in metaServlet and how to use the `help` command to display all metaServlet commands with their use examples and error codes.

For a list of all the commands that can be used in metaServlet, see the article Talend Administration Center MetaServlet API documentation.

B.2.1. Parameters

The following table provides detailed information about all JSON parameters used in metaServlet:

Parameter	Function	Example value
actionName	The name of the action	"taskLog"
active	The status of a task	Either *true* or *false*
addStatisticsCodeEnabled	Enable or disable using the statistics code	Either *true* or *false*
applyContextToChildren	Enable or disable applying context to children	Either *true* or *false*
authUser	The username of the administrator	"admin@company.com"
authPass	The password of the administrator	"admin"
branch	The name of the branch	"trunk"
contextName	The name of context parameters	"var1"

Parameter	Function	Example value
description	The description for the task, project or server you created	"the first task I created"
execStatisticsEnabled	Enable or disable the execution of statistics	Either *true* or *false*
executionServerName	The name of the server in which the task is deployed	"job_server_1"
jobName	The name of the job to be executed in the task	"job_1"
jobVersion	The version of the job to be executed in the task	"1.0"
onUnknownStateJob	Responsive action to the job of which the state is unknown	"KILL_TASK", "WAIT"
projectName	The name of the project	"project1"
regenerateJobOnChange	Enable or disable regenerating the job on change	Either *true* or *false*
taskName	The name of the task	"task1"
taskId	The Id of the task	1
mode	The mode of task execution	Either "synchronous" or "asynchronous"
lable	The label for the task	"for_demo_only"
source	The source of the branch	"source_name"
target	The target of the branch	"target_name"
username	The name of the user	"usernameA"
password	The password of the user	"passwordA"
id	The Id of of the JobServer	*1*

B.2.2. The help command

The `help` command describes in details every action you can perform in the MetaServlet, and provides you with:

- descriptions for each command,
- use examples,
- error codes specific to each command.

```
C:\OtherPrograms\apache\tomcat\apache-tomcat\webapps\tac\WEB-INF\classes>MetaServletCaller.bat --tac
-url=http://localhost:8080/tac --help addLocks
------------------------------------------------------------
  Command: addLocks
------------------------------------------------------------
Description             : Allow to lock a repository item. Mainly used by the Studio.
Requires authentication : false
Since                   : 4.2
Sample                  :
{
  "actionName": "addLocks",
  "applicationName": "Studio",
  "authUser": "admin@company.com",
  "branch": "trunk",
  "locks": [{
    "itemId": "id1",
    "itemLabel": "label1",
    "itemType": "repository.process"
  }],
  "projectName": "P1"
}
```

To display the exhaustive help for all commands, follow this syntax :

```
MetaservletCaller.bat --tac-url=http://IP_address:port/WebApplicationName
```

```
--help all
```

To display only a short description of all commands, follow this syntax:

```
MetaservletCaller.bat --tac-url=http://IP_address:port/WebApplicationName -h
```

To display the help for a specific command, follow this syntax:

```
MetaservletCaller.bat --tac-url=http://IP_address:port/WebApplicationName

--help <CommandName>
```

For a list of all the commands that can be used in metaServlet, see the article Talend Administration Center MetaServlet API documentation.

B.2.3. How to access the description of metaServlet commands offline

To display the descriptions of commands offline, you need to launch the MetaServlet once and copy the description of commands in a file to access it offline.

1. Display the exhaustive help for all commands following this syntax :

   ```
   MetaservletCaller.bat --tac-url=http://IP_address:port/WebApplicationName

   --help all
   ```

2. Copy the content of the Help command in an external file (a *MetaServletHelp.txt* file for example).

   Next time you do not have Internet access and want to know more about a specific MetaServlet command (description, use example error code), you'll be able to search this command in the file.

B.3. Using Scripts to Call MetaServlet Actions

To launch the metaServlet and read help information about scripts for calling MetaServlet actions in the Windows command line/Linux terminal:

1. Open the Windows command line or Linux terminal, and go to the following directory:

   ./org.talend.administrator/WEB-INF/classes

2. To call the metaServlet on Windows, run the *MetaServletCaller.bat* file.

   To call the metaServlet on Linux, run the *MetaServletCaller.sh* file.

3. To perform a MetaServlet action, type in the corresponding scripts in the command line (or terminal for Linux users).

   For example, to delete an existing user named *test@test.com* from *Talend Administration Center*, you will need to use following script to perform the action:

   ```
   MetaServletCaller.bat
   --tac-url=http://localhost:8080/org.talend.administrator
   --json-params=
   {
   "actionName":"deleteUser",
   "authPass":"TAC_Admin_password",
   "authUser":"TAC_Admin_username",
   ```

```
"userLogin":"test@test.com"
}
```

Once the command has been executed, user *test@test.com* is deleted:

```
C:\OtherPrograms\apache\tomcat\apache-tomcat\webapps\tac\WEB-INF\classes>MetaServletCaller.bat --tac
-url=http://localhost:8080/tac --json-params={actionName:"deleteUser","authPass":"admin","authUser":
"lgaudens@talend.com","userLogin":"test@test.com"}
RESPONSE:{"deleted user ":"test@test.com","executionTime":{"millis":129,"seconds":0},"returnCode":0}
```

You should replace the parameters used in the command with what they are in real contexts.

B.4. Using MetaServlet to print the log file of a task

In the following scenario, the log file of a task is retrieved from *Talend Administration Center* and printed in the command lines.

Prerequisite: Make sure an existing task is available in the Job Conductor in *Talend Administration Center* before you proceed the following steps.

1. Open the Windows command line or Linux terminal, and go to the following directory:

   ./org.talend.administrator/WEB-INF/classes

2. To call the metaServlet on Windows, run the *MetaServletCaller.bat* file.

   To call the metaServlet on Linux, run the *MetaServletCaller.sh* file.

3. To perform a MetaServlet action, type in corresponding scripts in the command line (or terminal for Linux users).

   In this example, to retrieve the log file of a task by the given name from *Talend Administration Center*, use the following script to perform the action:

```
MetaServletCaller.bat
--tac-url=http://localhost:8080/org.talend.administrator
--json-params=
{
"actionName":"taskLog",
"taskId":1,
"authPass":"TAC_Admin_password",
"authUser":"TAC_Admin_username"
}
```

   Once the command has been executed, the information in the log file of task 1 will be retrieved and printed in the command lines.

```
C:\Program Files\Apache Software Foundation\Tomcat 6.0\webapps\org.talend.administrator\WEB-INF\clas
s={"actionName":"taskLog","taskId":"1","authPass":"123456","authUser":"fhan@talend.com"}

C:\Program Files\Apache Software Foundation\Tomcat 6.0\webapps\org.talend.administrator\WEB-INF\clas
WEB-INF\classes\

C:\Program Files\Apache Software Foundation\Tomcat 6.0\webapps\org.talend.administrator\WEB-INF\clas
-tac-url=http://localhost:8080/org.talend.administrator --json-params={"actionName":"taskLog","taskI
RESPONSE:{"Task Log's contents: ":"### Job STARTED  at 2012/05/17 17:42:32 (jobId=20120517_174221_vH
---+--------+ |firstname|lastname| |=---------+--------=| |Abby     |Gattuso | |Mike     |Carlos  | '-
vHq0x, jobExecutionId=20120517174230_ENG3t) ### "}
```

   The execution information is displayed in the **Task execution monitoring** console of the *Talend Administration Center*.

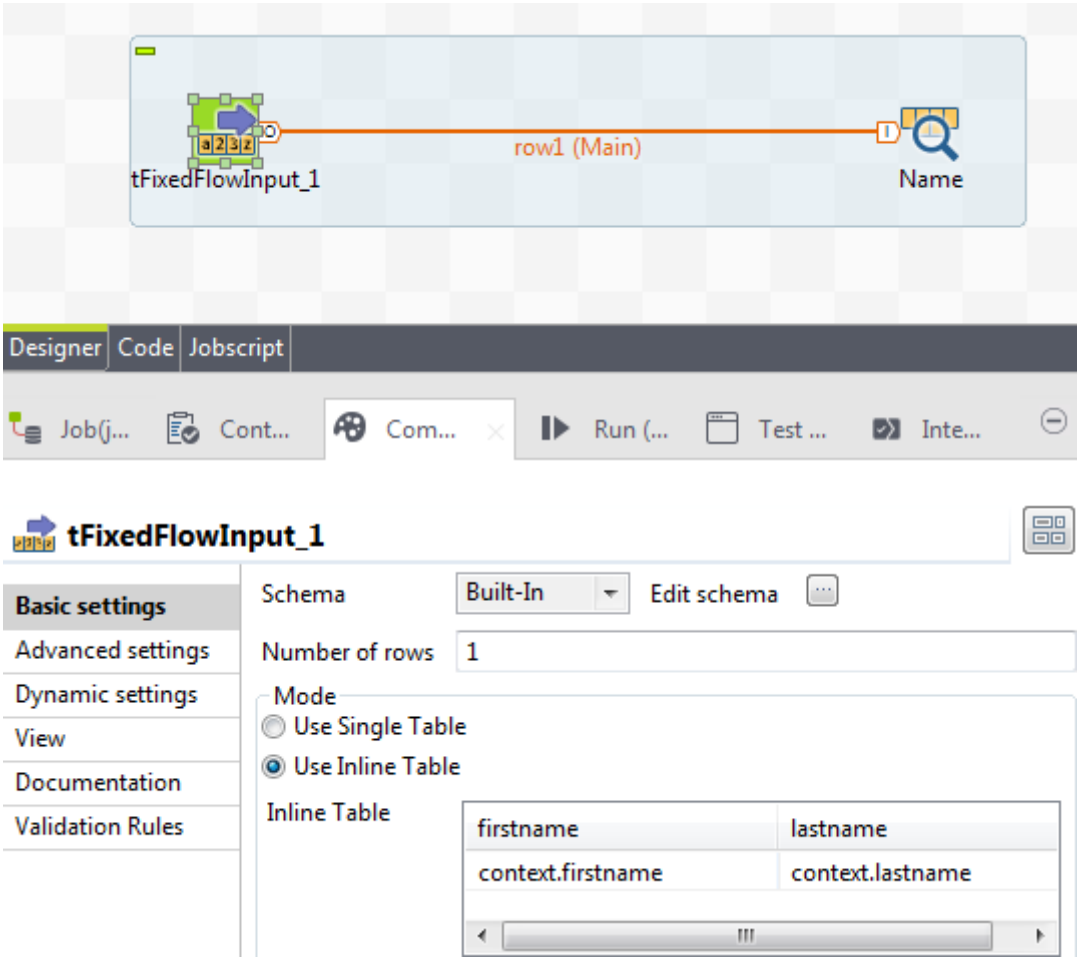
You should replace the parameters used in the command with what they are in real contexts.

B.5. Running a task with context parameters using MetaServlet

In the following scenario, an established task in *Talend Administration Center* is executed using metaServlet with context parameters.

Prerequisites:

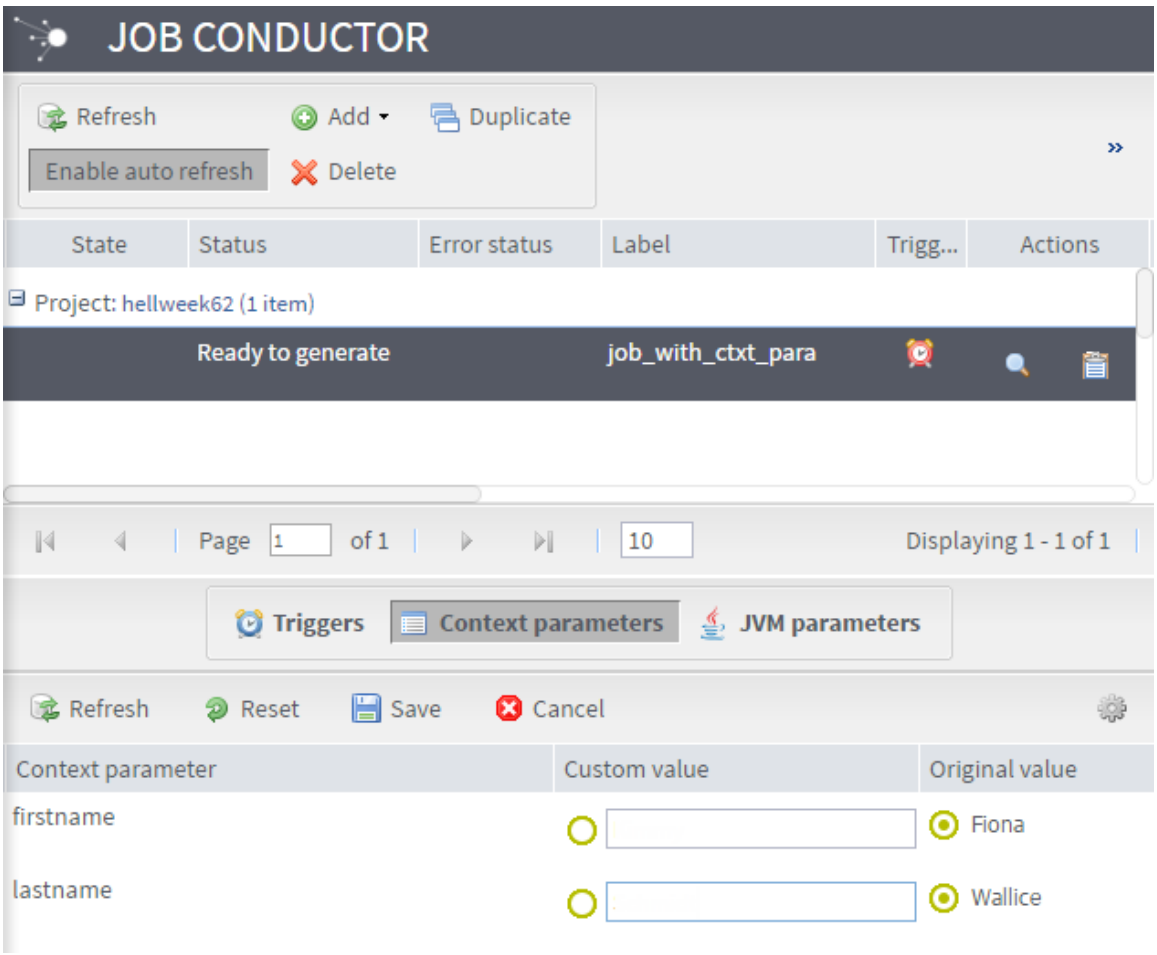
- Make sure an existing task is available on the **Job Conductor** page of *Talend Administration Center* before you proceed the following steps.
- The Job below is pre-established in the Studio with context variables: *context.firstname* and *context.lastname*.



Deploying a pre-established task on the Job Conductor page

- Deploy the pre-established Job on an execution server from the **Job Conductor** page:

  For more information about how to deploy a Job from the **Job Conductor** page, see *Adding a Normal execution task*.



Executing a task with context parameters using metaServlet

1. Open the Windows command line or Linux terminal, and go to the following directory:

   ./org.talend.administrator/WEB-INF/classes

2. To call the metaServlet on Windows, run the *MetaServletCaller.bat* file.

   To call the metaServlet on Linux, run the *MetaServletCaller.sh* file.

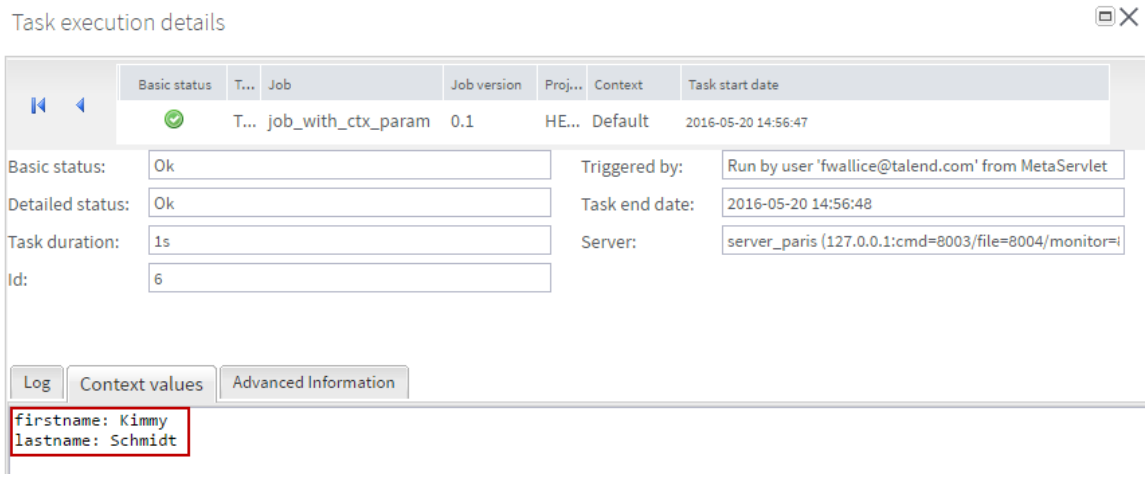
3. Type in the following script to execute task 1 with the context values of your choice :

```
MetaServletCaller.bat
--tac-url=http://localhost:8080/org.talend.administrator
--json-params=
{
"actionName":"runTask",
"authPass":"TAC_Admin_password",
"authUser":"TAC_Admin_username",
"taskId":1,
"mode":"synchronous",
"context":{"firstname":"Robert","lastname":"Durst"}
}
```

   The response from the *Talend Administration Center* server is displayed in the command lines:

```
C:\Programs\apache\apache-tomcat-8.0.24\webapps\org.talend.administrator\WEB-INF\classes>MetaServlet
Caller.bat --tac-url=http://localhost:8080/org.talend.administrator --json-params={"actionName":"run
Task","authPass":"admin","authUser":"fwallice@talend.com","taskId":1,"mode":"synchronous","context":
{"firstname":"Kimmy","lastname":"Schmidt"}}
{"errorStatus":"NO_ERROR","execBasicStatus":"OK","execDetailedStatus":"ENDED_OK","execDetailedStatus
Label":"Ok","execRequestId":"1463748777338_Oo9Pw","executionTime":{"millis":2112,"seconds":2},"jobEx
itCode":0,"returnCode":0,"status":"READY_TO_RUN"}
```

The execution information is displayed in the **Task execution details** console of *Talend Administration Center*:



"context":{"firstname":"Kimmy","lastname":"Schmidt"} in the script above specifies the values for the context parameters: *firstname* and *lastname*, you must follow the syntax below:

```
"context":{"varname1":"varvalue"}
```

Multiple context parameters should be separated by comma(s). You should replace the parameters used in the command with what they are in real contexts.

B.6. Executing a task and returning its status using MetaServlet

In the following scenario, a task is executed using MetaServlet and its status and Job exit codes are returned in the application.

Prerequisites:

- An existing task is created on the **Job Conductor** page of *Talend Administration Center*.
- you know the ID of this task (if not, you can use the `getTaskIdByName` command to retrieve the ID of the task).

Returning the status of a task executed in synchronous mode

- Use the `runTask` MetaServlet command to run the execution task.

  For example (on Windows):

```
MetaServletCaller.bat --tac-url=http://localhost:8080/org.talend.administrator/
--json-
params={"actionName":"runTask","authPass":"admin","authUser":"admin@company.com",
"mode":"synchronous","taskId":"2502"} --format-output
```

  If the task has been executed successfully, you will get for example:

```
{
  "errorStatus":  "NO_ERROR",
   "execBasicStatus":  "OK",
   "execDetailedStatus":  "ENDED_OK",
```

```
   "execDetailedStatusLabel":  "Ok",
   "execRequestId":  "1406816118032_sYHGd",
   "executionTime": {
     "millis": 6011,
     "seconds": 6
  },
   "jobExitCode": 0,
   "returnCode": 0,
   "status":  "READY_TO_RUN"
}
```

The task status at the end of the execution is *Ready to run* and the execution status *Ended OK* as well as the Job exit code *0* indicate that it ended successfully.

If the task has failed, you will get for example:

```
{
  "errorStatus":  "JOB_ERROR",
   "execBasicStatus":  "ERROR",
   "execDetailedStatus":  "JOB_ERROR",
   "execDetailedStatusLabel":  "Job ended with error(s)",
   "execRequestId":  "1406817091606_fVsht",
   "executionTime": {
     "millis": 3847,
     "seconds": 3
  },
   "jobExitCode": 1,
   "returnCode": 0,
   "status":  "READY_TO_RUN"
}
```

The execution status *Job error* as well as the Job exit code *1* indicate that an error occurred during the task execution.

Returning the status of a task executed in asynchronous mode

1. Use the `runTask` MetaServlet command to run the execution task.

   For example (on Windows):

   ```
   MetaServletCaller.bat --tac-url=http://localhost:8080/org.talend.administrator/
   --json-
   params={"actionName":"runTask","authPass":"admin","authUser":"admin@company.com",
   "mode":"asynchronous","taskId":"2502"} --format-output
   ```

   You will get for example:

   ```
   {
     "execRequestId":  "1406817216723_97nsV",
      "executionTime": {
        "millis": 1069,
        "seconds": 1
     },
      "returnCode": 0
   }
   ```

2. Execute the command `getTaskExecutionStatus` to follow the execution state.

   For example (on Windows):

   ```
   MetaServletCaller.bat --tac-url=http://localhost:8080/org.talend.administrator/
   --json-params={"actionName":"getTaskExecutionStatus","authPass":"admin",
   "authUser":"admin@company.com","execRequestId": "1406817216723_97nsV"} --format-
   output
   ```

   If the task is still running during the request, you will get for example:

```
{
  "execBasicStatus":  "RUNNING",
   "execDetailedStatus":  "RUNNING",
   "execDetailedStatusLabel":  "Running...",
   "executionTime": {
     "millis": 309,
     "seconds": 0
  },
   "returnCode": 0
}
```

The task execution status is *Running*.

If the task execution has ended, you will get for example:

```
{
  "execBasicStatus":  "ERROR",
   "execDetailedStatus":  "JOB_ERROR",
   "execDetailedStatusLabel":  "Job ended
        with error(s)",
   "executionTime": {
     "millis": 300,
     "seconds": 0
  },
   "jobExitCode": 1,
   "returnCode": 0
}
```

The execution status *Job error* as well as the Job exit code *1* indicate that an error occurred during the task execution.

B.7. Using MetaServlet to handle ESB execution tasks

The following scenario demonstrates how to use MetaServlet to handle ESB execution tasks in *Talend Administration Center*.

Prerequisites:

Make sure your Talend Runtime server(s) are configured (agent must be running), and the Route, Service or Job item to be executed that is designed in the Studio has been published into the Artifact repository, which is also started. Then you can create the various execution tasks that you want to launch.

Creating a task on the ESB Conductor page

1. Open the Windows command line or Linux terminal, and go to the following directory:

   ./org.talend.administrator/WEB-INF/classes

2. To call the metaServlet on Windows, run the *MetaServletCaller.bat* file.

   To call the metaServlet on Linux, run the *MetaServletCaller.sh* file.

3. Type in the following script to create an execution task for the Route *DemoRESTRoute*, which has been published into the Artifact repository:

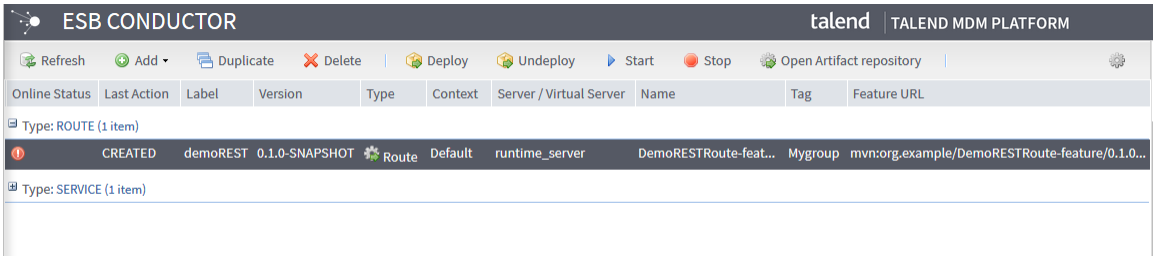
   ```
   MetaServletCaller.bat
   ```

```
--tac-url=http://localhost:8080/org.talend.administrator
--json-params=
{
"actionName":"saveEsbTask",
"taskName":"demoREST",
"description":"demo",
"tag":"Mygroup",
"repository":"snapshots",
"featureName":"DemoRESTRoute-feature",
"featureVersion":"0.1.0-SNAPSHOT",
"featureType":"ROUTE",
"runtimeContext":"Default",
"runtimeServerName":"runtime_server",
"runtimePropertyId":"DemoRESTRoute",
"authPass":"admin",
"authUser":"admin@company.com",
"featureUrl":'mvn:org.example/DemoRESTRoute-feature/0.1.0-SNAPSHOT/xml'
}
```

The response from the *Talend Administration Center* server is displayed in the command lines:

```
C:\Users\Talend\Desktop\apache-tomcat-7.0.63\webapps\org.talend.administrator\WEB-INF\classes>MetaServletCaller.bat --ta
c-url=http://localhost:8080/org.talend.administrator --json-params={"actionName":"saveEsbTask","taskName":"demoREST","de
scription":"demo","tag":"Mygroup","repository":"snapshots","featureName":"DemoRESTRoute-feature","featureVersion":"0.1.0
-SNAPSHOT","featureType":"ROUTE","runtimeContext":"Default","runtimeServerName":"runtime_server","runtimePropertyId":"De
moRESTRoute","authPass":"admin","authUser":"admin@company.com","featureUrl":'mvn:org.example/DemoRESTRoute-feature/0.1.0
-SNAPSHOT/xml'}
{"executionTime":{"millis":295,"seconds":0},"returnCode":0,"taskId":34}
```

The task is displayed on the **ESB Conductor** page of *Talend Administration Center*:



Multiple context parameters should be separated by comma(s). You should replace the parameters used in the command with what they are in real contexts.

Updating a task on the Job Conductor page

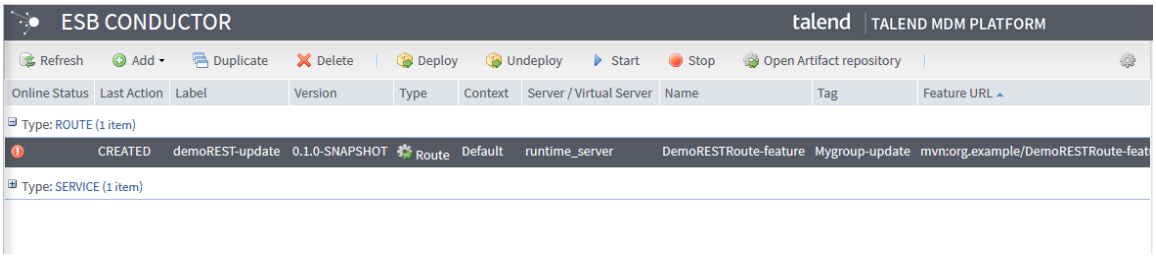
- Type in the following script to update the task that is just created:

```
MetaServletCaller.bat
-tac-url=http://localhost:8080/org.talend.administrator
-json-params=
{
"actionName":"updateEsbTask",
"taskId":"34",
"taskName":"demoREST-update",
"description":"demo-update",
"tag":"Mygroup-update",
"repository":"snapshots",
"featureUrl":'mvn:org.example/DemoRESTRoute-feature/0.1.0-SNAPSHOT/xml',
"featureName":"DemoRESTRoute-feature",
"featureVersion":"0.1.0-SNAPSHOT",
"featureType":"ROUTE",
"runtimeContext":"Default",
"runtimeServerName":"runtime_server",
"runtimePropertyId":"DemoRESTRoute",
"authPass":"admin","authUser":"admin@company.com"
}
```

The response from the *Talend Administration Center* server is displayed in the command lines:

```
C:\Users\Talend\Desktop\apache-tomcat-7.0.63\webapps\org.talend.administrator\WEB-INF\classes>MetaServletCaller.bat -tac
-url=http://localhost:8080/org.talend.administrator -json-params={"actionName":"updateEsbTask","taskId":"34","taskName":
"demoREST-update","description":"demo-update","tag":"Mygroup-update","repository":"snapshots","featureUrl":'mvn:org.exam
ple/DemoRESTRoute-feature/0.1.0-SNAPSHOT/xml','featureName":"DemoRESTRoute-feature","featureVersion":"0.1.0-SNAPSHOT","f
eatureType":"ROUTE","runtimeContext":"Default","runtimeServerName":"runtime_server","runtimePropertyId":"DemoRESTRoute",
"authPass":"admin","authUser":"admin@company.com"}
{"executionTime":{"millis":217,"seconds":0},"returnCode":0,"taskId":34}
```

The label, description, and tag of the task is updated and can be shown on the **ESB Conductor** page of *Talend Administration Center*:



Deploying a task on the Job Conductor page

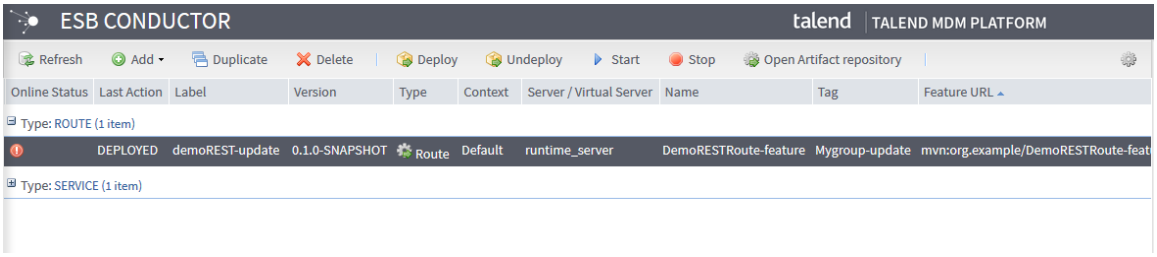
- Type in the following script to deploy the task that is just created:

```
MetaServletCaller.bat
-tac-url=http://localhost:8080/org.talend.administrator
-json-params=
{
"actionName":"requestDeployEsbTask",
"taskId":"34",
"authPass":"admin",
"authUser":"admin@company.com"
}
```

The response from the *Talend Administration Center* server is displayed in the command lines:

```
C:\Users\Talend\Desktop\apache-tomcat-7.0.63\webapps\org.talend.administrator\WEB-INF\classes>MetaServletCaller.bat -tac
-url=http://localhost:8080/org.talend.administrator  -json-params={"actionName":"requestDeployEsbTask","taskId":"34","au
thPass":"admin","authUser":"admin@company.com"}
{"executionTime":{"millis":3413,"seconds":3},"returnCode":0}
```

The status of the task is changed to *DEPLOYED* on the **ESB Conductor** page of *Talend Administration Center*.



Starting a task on the Job Conductor page

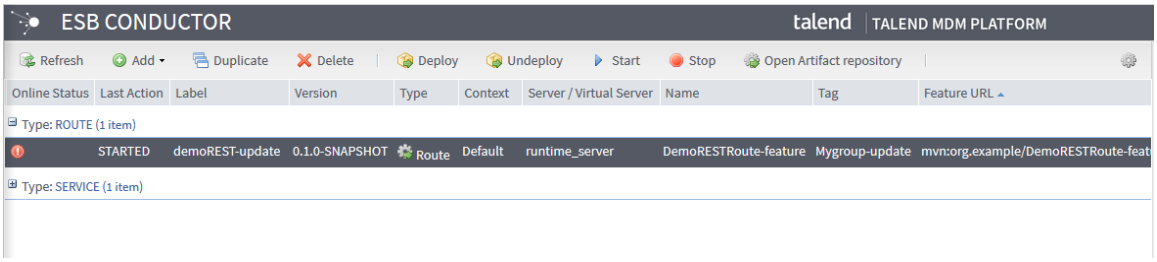
- Type in the following script to start the task that has been deployed in to Talend Runtime:

```
MetaServletCaller.bat
-tac-url=http://localhost:8080/org.talend.administrator
-json-params=
{
"actionName":"startEsbTask",
"taskId":"34",
"authPass":"admin",
"authUser":"admin@company.com"
}
```

The response from the *Talend Administration Center* server is displayed in the command lines:

```
C:\Users\Talend\Desktop\apache-tomcat-7.0.63\webapps\org.talend.administrator\WEB-INF\classes>MetaServletCaller.bat -tac
-url=http://localhost:8080/org.talend.administrator  -json-params={"actionName":"startEsbTask","taskId":"34","authPass":
"admin","authUser":"admin@company.com"}
{"executionTime":{"millis":1425,"seconds":1},"returnCode":0}
```

The status of the task is changed to *STARTED* on the **ESB Conductor** page of *Talend Administration Center*.



Stopping a task on the Job Conductor page

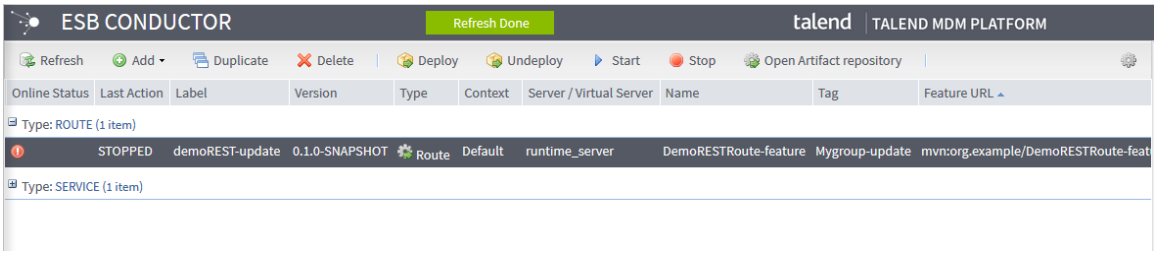
- Type in the following script to stop the task that has been started:

```
MetaServletCaller.bat
-tac-url=http://localhost:8080/org.talend.administrator
-json-params=
{
"actionName":"stopEsbTask",
"taskId":"34",
"authPass":"admin",
"authUser":"admin@company.com"
}
```

The response from the *Talend Administration Center* server is displayed in the command lines:

```
C:\Users\Talend\Desktop\apache-tomcat-7.0.63\webapps\org.talend.administrator\WEB-INF\classes>MetaServletCaller.bat -tac
-url=http://localhost:8080/org.talend.administrator  -json-params={"actionName":"stopEsbTask","taskId":"34","authPass":"
admin","authUser":"admin@company.com"}
{"executionTime":{"millis":123,"seconds":0},"returnCode":0}
```

The status of the task is changed to *STOPPED* on the **ESB Conductor** page of *Talend Administration Center*.



Getting the status of a task on the Job Conductor page

- Type in the following script to show the status of the task:

```
MetaServletCaller.bat
-tac-url=http://localhost:8080/org.talend.administrator
-json-params=
{
"actionName":"getEsbTaskStatus",
"taskId":"34",
"authPass":"admin",
"authUser":"admin@company.com"
}
```

The status of the task is displayed in the command lines:

```
C:\Users\Talend\Desktop\apache-tomcat-7.0.63\webapps\org.talend.administrator\WEB-INF\classes>MetaServletCaller.bat -tac
-url=http://localhost:8080/org.talend.administrator  -json-params={"actionName":"getEsbTaskStatus","taskId":"34","authPa
ss":"admin","authUser":"admin@company.com"}
{"errorStatus":"NO_ERROR","executionTime":{"millis":1,"seconds":0},"returnCode":0,"status":"STOPPED"}
```

Getting the task ID by its name

- Type in the following script to show the status of the task:

```
MetaServletCaller.bat
-tac-url=http://localhost:8080/org.talend.administrator
-json-params=
{
"actionName":"getEsbTaskIdByName",
"taskName":"demoREST-update",
"authPass":"admin",
"authUser":"admin@company.com"
}
```

The ID of the task is displayed in the command lines:

```
C:\Users\Talend\Desktop\apache-tomcat-7.0.63\webapps\org.talend.administrator\WEB-INF\classes>MetaServletCaller.bat -tac
-url=http://localhost:8080/org.talend.administrator  -json-params={"actionName":"getEsbTaskIdByName","taskName":"demoRES
T-update","authPass":"admin","authUser":"admin@company.com"}
{"executionTime":{"millis":0,"seconds":0},"returnCode":0,"taskId":34}
```

Undeploying a task on the Job Conductor page

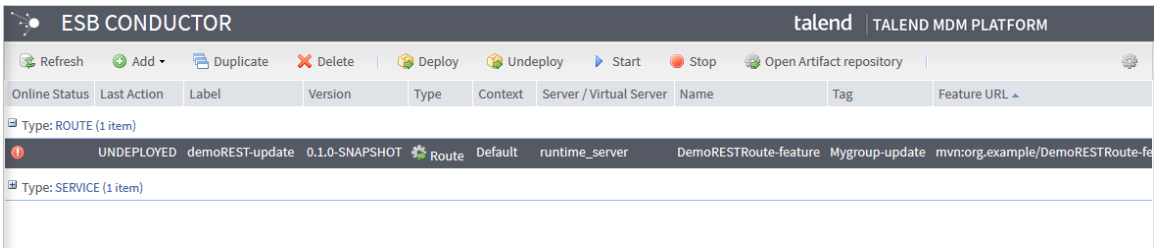
- Type in the following to undeploy the task that has been stopped:

```
MetaServletCaller.bat
-tac-url=http://localhost:8080/org.talend.administrator
-json-params=
{
"actionName":"requestUndeployEsbTask",
"taskId":"34",
"authPass":"admin",
"authUser":"admin@company.com"
}
```

The response from the *Talend Administration Center* server is displayed in the command lines:

```
C:\Users\Talend\Desktop\apache-tomcat-7.0.63\webapps\org.talend.administrator\WEB-INF\classes>MetaServletCaller.bat -tac
-url=http://localhost:8080/org.talend.administrator  -json-params={"actionName":"requestUndeployEsbTask","taskId":"34","
authPass":"admin","authUser":"admin@company.com"}
{"executionTime":{"millis":3066,"seconds":3},"returnCode":0}
```

The status of the task is changed to *UNDEPLOYED* on the **ESB Conductor** page of *Talend Administration Center*.



Deleting a task on the Job Conductor page

- Type in the following script to delete the task that has been undeployed:

```
MetaServletCaller.bat
-tac-url=http://localhost:8080/org.talend.administrator
-json-params=
{
```

```
"actionName":"deleteEsbTask",
"taskId":"34",
"authPass":"admin",
"authUser":"admin@company.com"
}
```

The response from the *Talend Administration Center* server is displayed in the command lines:

```
C:\Users\Talend\Desktop\apache-tomcat-7.0.63\webapps\org.talend.administrator\WEB-INF\classes>MetaServletCaller.bat -tac
-url=http://localhost:8080/org.talend.administrator -json-params={"actionName":"deleteEsbTask","taskId":"34","authPass":
"admin","authUser":"admin@company.com"}
{"executionTime":{"millis":8,"seconds":0},"returnCode":0}
```

The task deleted from the **ESB Conductor** page of *Talend Administration Center*.

For more information about how work with ESB execution tasks from the **ESB Conductor** page, see *Executing Services, Routes, and data service Jobs, and applying Profiles from ESB Conductor*.

Appendix C. Theory into practice: Executing and monitoring a data integration Job

This appendix aims at users of *Talend Administration Center* who seek real-life use cases to help them take full control over the product.

This appendix provides some basic example on how to schedule and monitor the execution of a data integration Job.

For more information on how to publish and execute a Service, a data service Job or a Route, see *Theory into practice: Executing a Service, a data service Job, a Route and monitoring a Service*.

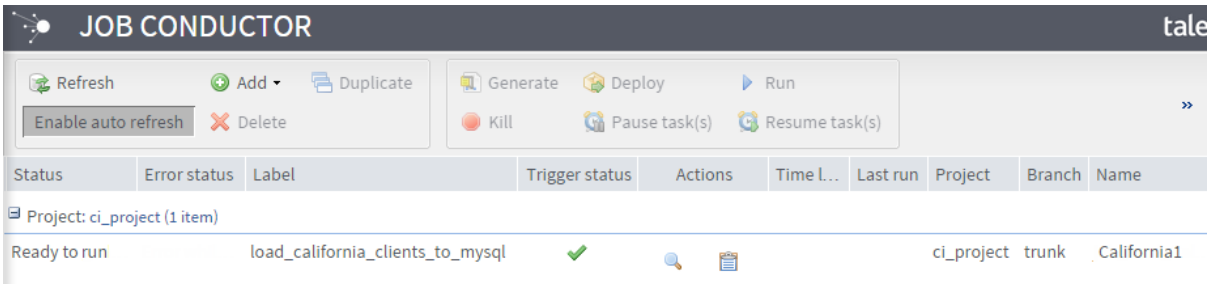
C.1. Prerequisites

Before starting the use case, make sure that:

- an execution server is up and running and is registered on the **Servers** page. For more information, see *Configuring execution servers*,
- the CommandLine application is started and its connection parameters are filled on the **Configuration** page. For more information, see *Setting up the CommandLines' parameters*,
- the **Job Conductor** parameters are filled on the **Configuration** page. For more information, see *Setting up the Job Conductor parameters*,
- the **Svn** parameters are filled on the **Configuration** page, to avoid errors during the code generation of the data integration Job due to missing external libraries. For more information on these parameters, see *Setting up SVN or Git parameters*, and for more information on external libraries, see the *Talend Installation Guide*,
- you have created the *California1* Job from the Studio, that is documented in the *Appendix Theory into practice: Job examples* of the *Talend Studio User Guide*, or you have created another Job from the Studio that you want to execute via *Talend Administration Center*.

C.2. Scheduling the execution of a Job

To schedule the execution of a Job you have created from *Talend Studio*, you have to create an execution task based on this Job on the **Job Conductor** page. This task will then be scheduled to be generated, deployed and executed at a certain time.



How to add a task on a Job

1. On the top toolbar of the **Job Conductor** page, click **Add** to display the configuration panel of the task.
2. In the **Label** field of the panel, type in the name of the task, here it is *load_california_clients_to_mysql*.
3. Click the  icon and select the Job you created in the *Talend Studio*, here it is *California1*.
4. In the **Execution server** field, select the server you registered on the **Servers** page.
5. In the **Timeout (s)** field, type in how long to wait, in seconds, before the task is being killed, here it is *240* (4 minutes).
6. Fill in other fields if needed then save your task. The *load_california_clients_to_mysql* task is created.

   To perform this action via the MetaServlet application, use the `createTask` command. For more information about the MetaServlet parameters, see *Parameters and actions in metaServlet*.

How to add a trigger on a task

1. In the task list of the **Job Conductor**, select the task to which you want to add a trigger, here it is *load_california_clients_to_mysql*.
2. Click the **Triggers** button at the bottom of the page. The corresponding panel opens.
3. Click **Add trigger**, then select **Add simple trigger** in the list to add a time-based trigger on the task.
4. In the **[Add simple trigger]** panel that opens on the right, fill in the relevant information:

   In the **Label** field, type in the name of your trigger, here it is *trigger_california_job*.

   Fill in a description in needed.

   Select the time at which the triggering takes place and is ended in the **Start time** and **End time** fields.

   In the **Number of repetitions** field, type in the number of executions that should occur in addition to the first execution. Type in *3* in order to trigger three executions: one to generate the code of your Job, one to deploy your Job and one to run your Job.

   In the **Time interval (s)** field, type in (in seconds) the time interval between triggerings, here it is *240* (4 minutes).
5. Save your changes. In the **Trigger status** column, you can see that the trigger is added and is ready to be launched at the specified time.

How to generate, deploy and run your Job manually

Alternatively, if you did not add a trigger to your execution task, you can execute it manually.

1. In the task list of the **Job Conductor**, select the task you want to execute, here it is *load_california_clients_to_mysql*.
2. Click **Generate** on the top toolbar and wait a few seconds. The code of your Job is generated with the CommandLine application and the task status changes from **Ready to generate** to **Ready to deploy**.

   To perform this action via the MetaServlet application, use the `requestGenerate` command. For more information on the MetaServlet parameters, see *Parameters and actions in metaServlet*.
3. Click **Deploy** on the top toolbar and wait a few seconds. The Job is deployed and the task status changes from **Ready to deploy** to **Ready to run**.

   To perform this action via the MetaServlet application, use the `requestDeploy` command. For more information on the MetaServlet parameters, see *Parameters and actions in metaServlet*.
4. Click **Run** on the top toolbar and wait a few seconds. The Job is executed on the server that you registered on the **Servers** page.

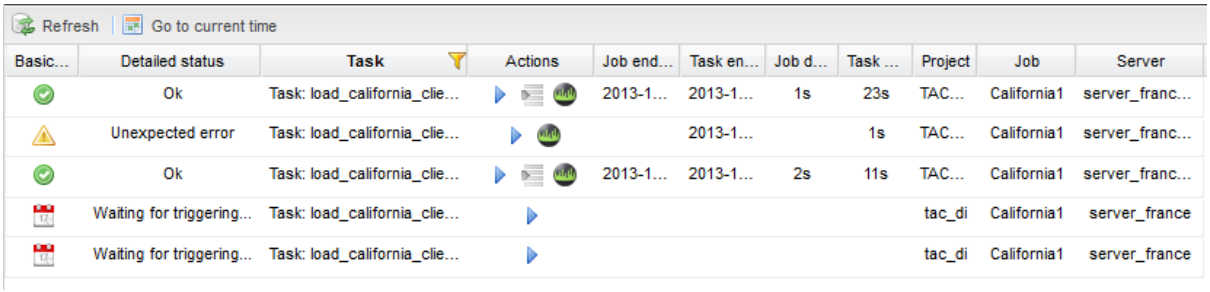
   To perform this action via the MetaServlet application, use the `runTask` command. For more information on the MetaServlet parameters, see *Parameters and actions in metaServlet*.

For more information on how to monitor the executions of your Job, see *Monitoring the execution of a Job* .

C.3. Monitoring the execution of a Job

Once you have executed your Job several times via the **Job Conductor** page of *Talend Administration Center*, you can monitor its executions (monitoring grid, statistic information and execution logs).

How to display the Job execution history



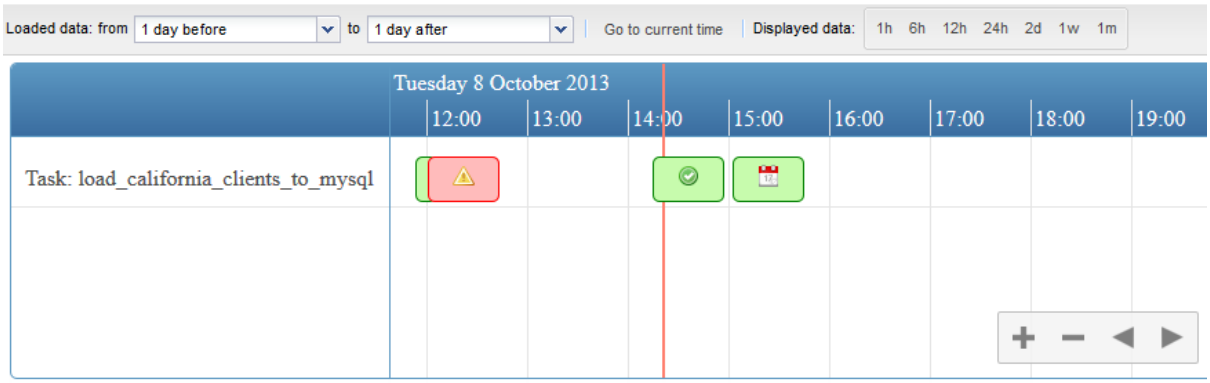
1. In the task list of the **Job Conductor**, select the task you want to monitor, here it is *load_california_clients_to_mysql*.

2. In the **Actions** column, click the icon to open the **Execution History** page which is filtered on the selected task.

For example here, you can see that the second execution ended with an error while the other executions succeeded, and that two executions are not started yet.

From the **Actions** column of the **Execution History** page, you can either execute the task in its current status, open the **Error Recovery Management** page where you can recover a Job which execution failed, or show the statistic view of the corresponding execution.

Alternatively, to open a graphical view of this Job history, click **Timeline** in the *Talend Administration Center* menu to open the corresponding page.

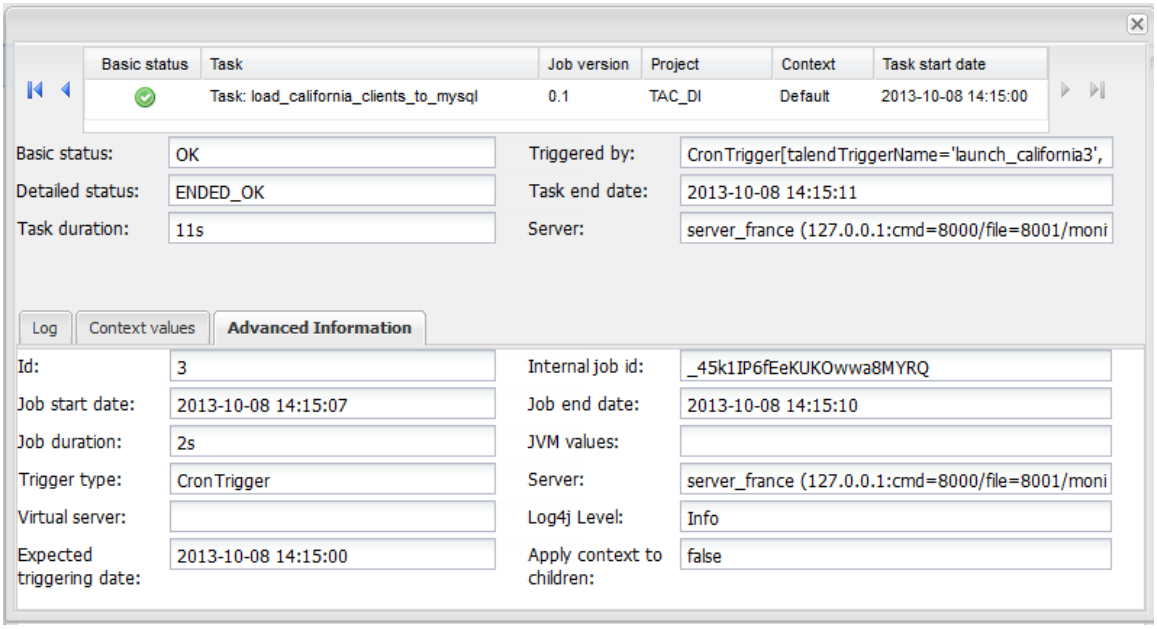


How to display the Job execution statistic information

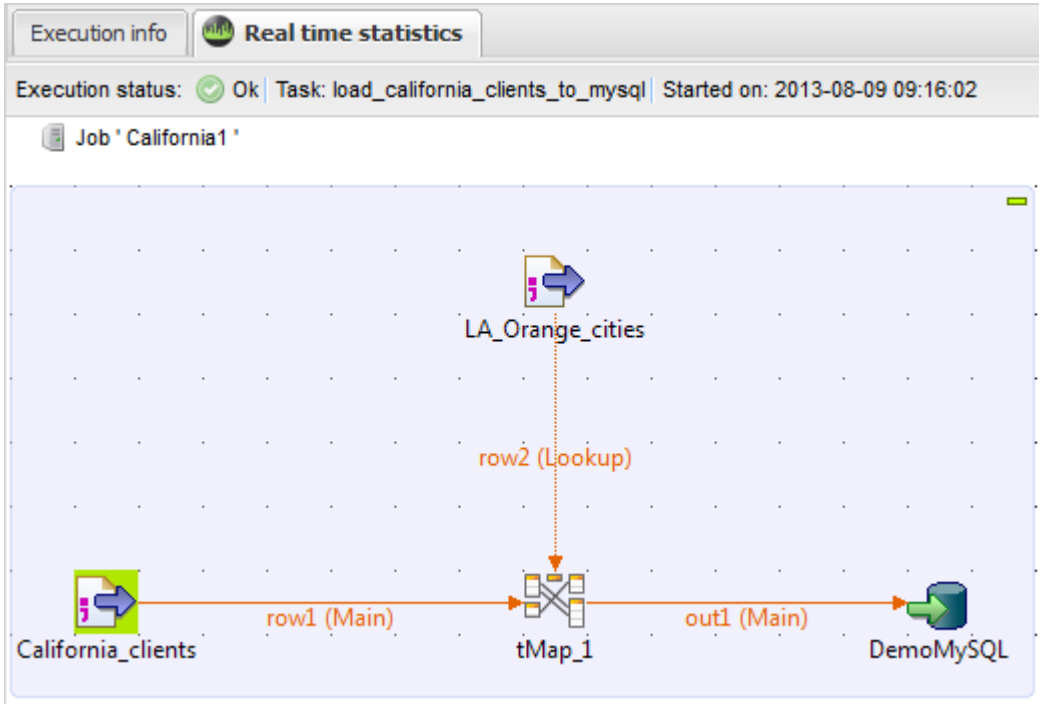
From the **Execution History** page or directly from the **Job Conductor** page, you can show the execution information and statistics.

1. On the **Job Conductor** page, select the task for which you want to display the statistic view and click the icon in the **Actions** column.

   The information regarding the last execution of the task is summarized in the window that opens.



2. To show the real-time statistics of the Job execution, select your task and click the icon on the top toolbar of the **Job Conductor** page.



How to display the Job execution logs

1. To see the log corresponding to the execution of your Job from the **Job Conductor** page, select the task in the list and click the icon in the **Actions** column.
2. In the window that opens on the details of the last execution of the Job, click **Log** to open the corresponding tab and view the logs generated during the Job execution.

   To display the log via the MetaServlet application, use the `taskLog` command. For more information about the MetaServlet parameters, see *Parameters and actions in metaServlet*.

Appendix D. Theory into practice: Executing a Service, a data service Job, a Route and monitoring a Service

This appendix aims at users of *Talend Administration Center* who seek real-life use cases to help them take full control over the product.

This appendix provides some basic examples on how to publish and execute of a Service, a data service Job and a Route, and how to monitor the Service endpoints and Service activities.

For more information on how to execute and monitor a Job, see *Theory into practice: Executing and monitoring a data integration Job* .

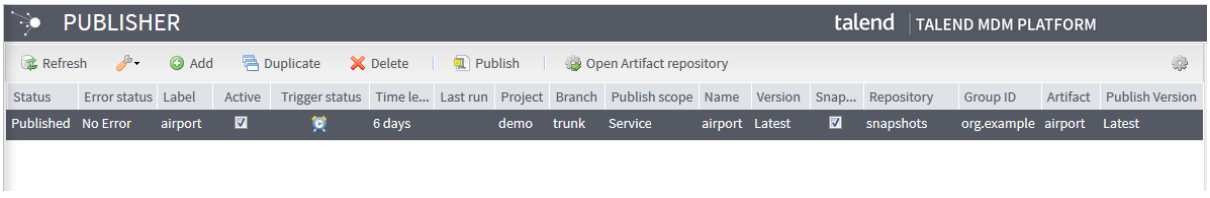
D.1. Prerequisites

Before starting the use case, make sure that:

- an execution server is up and running and is registered on the **Servers** page. For more information, see *Configuring execution servers*,
- the CommandLine application is started and its connection parameters are filled on the **Configuration** page. For more information, see *Setting up the CommandLines' parameters*,
- the Nexus Artifact Repository is started (ships with Talend Administration Center). For more information on how to install the artifact repository, see the *Talend Installation Guide*.
- the Artifact Repository parameters are filled on the **Configuration** page. For more information, see *Setting up the Artifact Repository parameters*,
- the endpoint repository and the Service Locator feature are set up. For more information regarding how to set up the Service Locator module, please refer to the *Talend ESB Infrastructure Services Configuration Guide*.
- the Agent and Monitoring Server are set up in order for the Service Activity Monitoring module to be fed with event information. For more information regarding how to set up the Service Activity Monitoring server and agent, please refer to the *Talend ESB Infrastructure Services Configuration Guide*.
- the ESB Service Locator and SAM parameters are filled on the **Configuration** page. For more information, see Setting up the ESB Service Locator and Service Activity Monitoring parameters.
- the **Svn** parameters are filled on the **Configuration** page, to avoid errors during the code generation of the data service Job due to missing external libraries. For more information on these parameters, see *Setting up SVN or Git parameters*, and for more information on external libraries, see the *Talend Installation Guide*,
- you have created the *airport* service, the *airportJob* Job, and the *airportRoute* Route from the Studio, that are documented in the *Appendix Theory into practice: Data service and routing examples* of the *Talend Studio User Guide*, or you have created other Service, data service Job and Route from the Studio that you want to execute via *Talend Administration Center*.

D.2. Publishing a Service, a data service Job and a Route

Before you can execute any Service, data service Job or Route you have created in *Talend Studio* from *Talend Administration Center*, you need to publish them from *Talend Studio* to an Artifact Repository. To publish a Service, a data service Job and a Route you have created from *Talend Studio* into an Artifact Repository, you have to create a publishing task based on each of them on the **Publisher** page. This task can be scheduled to be published at a certain time or executed manually.



How to add publishing tasks on the Service, the data service Job and the Route

Follow these steps to add a publishing task on the Service first.

1. On the top toolbar of the **Publisher** page, click **Add** to display the configuration panel of the task.
2. In the **Label** field of the panel, type in the name of the task. Here it is *airport*. Fill a description in the **Description** field if needed.
3. Select the project and the branch that holds the service in the **Project** and the **Branch** fields.
4. Select **Service** in the **Individual** list and then in the **Name** list select the service you created in the *Talend Studio*, here it is *airport*. Select **Latest** in the **Version** list.
5. Select the **Publish as Snapshot** check box.
6. Keep the default settings of the other fields and save your task. The *airport* task is created.

Repeat these steps to add a publishing task on the data service Job and the Route in the same way. When creating the publishing task on the data service Job, select **Job** in the **Individual** list, For the Route, select **Route**.

How to add triggers on the publishing tasks

Follow these steps to add a trigger on the Service first.

1. In the task list of the **Publisher**, select the task you created for the Service, here it is *airport*.
2. In the **Trigger** view at the bottom of the page, click **Add trigger...** and then select **Add CRON trigger** in the list. The configuration panel opens.
3. In the **[Add CRON trigger]** panel that opens on the right, fill in the relevant information:

   In the **Label** field, type in the name of your trigger, here it is *trigger_airport_service*.

   Fill in a description if needed.

   Click **Open UI configurer** to open the **[Cron UI trigger configuration]** dialog box.

   Select time items at which you want the task to be executed. For the **Days of Month** and **Days of week** fields, select one or more week days OR one or more dates. The other fields are mandatory. For multiple selection, press **Ctrl + click**.
4. Save your changes. In the **Trigger status** column, you can see that the trigger is added and is ready to be launched at the specified time.

Repeat these steps to add a trigger on the data service Job and the Route.

How to execute the publishing tasks manually

Alternatively, if you did not add triggers to the publishing tasks, you can execute them manually.

To execute the publishing task on the Service:

1. In the task list of the **Publisher**, select the task you created for the Service, here it is *airport*.
2. Click the **Publish** button on the top toolbar and wait a few seconds. The code of your Service is generated with the CommandLine application and the task status changes from **Ready to publish** to **Publishing** and then **Published**.

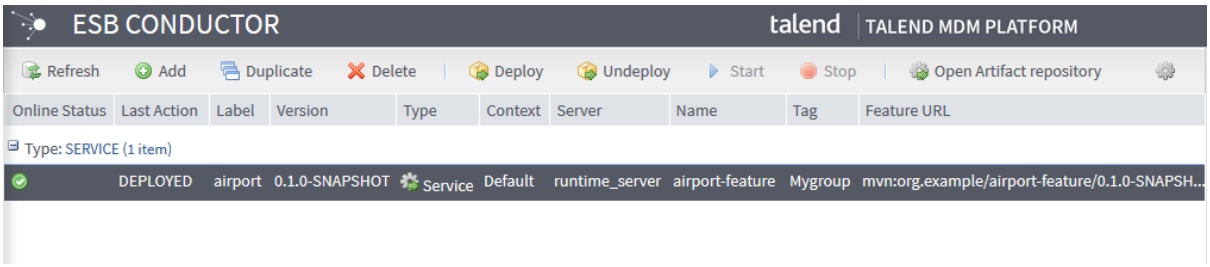
Repeat these steps to publish the data service Job and the Route.

For more information on how to execute the Service, the data service Job and the Route, see *Executing a Service, a data service Job and a Route* .

D.3. Executing a Service, a data service Job and a Route

To execute the Service, the data service Job and the Route you have created from *Talend Studio* and published into an Artifact Repository, you have to create an execution task based on each of them on the **ESB Conductor** page. This task will then be launched to deploy and start the Service, the data service Job and the Route.

For more information on how to publish the Service, the data service Job and the Route, see *Publishing a Service, a data service Job and a Route* .



How to add execution tasks on the Service, the data service Job and the Route

Follow these steps to add an execution task on the Service first.

1. On the top toolbar of the **ESB Conductor** page, click **Add** to display the configuration panel of the task.
2. In the **Label** field of the panel, type in the name of the task, here it is *airport*. Fill a description in the **Description** field if needed.
3. In the **Tag** field, type in the name of the group in which you want to group your task, here it is *Mygroup*.
4. In the **Feature** area, click the **Select Feature** button to select from the Artifact Repository the artifact you want to deploy and start. A wizard named **[Select Feature from Nexus repository]** opens.
5. In the **[Select Feature from Nexus repository]** wizard, select the Repository in the **Repository** list.

   Browse through the tree structure and select the artifact you want to deploy and start. Here it is *airport-feature*. Click **OK** to close the wizard.
6. In the **Type** list, select **Service**.
7. In the **Server** field, select the server you registered on the **Servers** page.
8. Keep the default settings of the other fields then save your task. The *airport* task is created.

Repeat these steps to add an execution task on the data service Job and the Route. When creating the execution task on the data service Job, select **Generic** in the **Type** list, For the Route, select **Route**

How to deploy and start the Service, the data service Job and the Route

To deploy and start the Service:

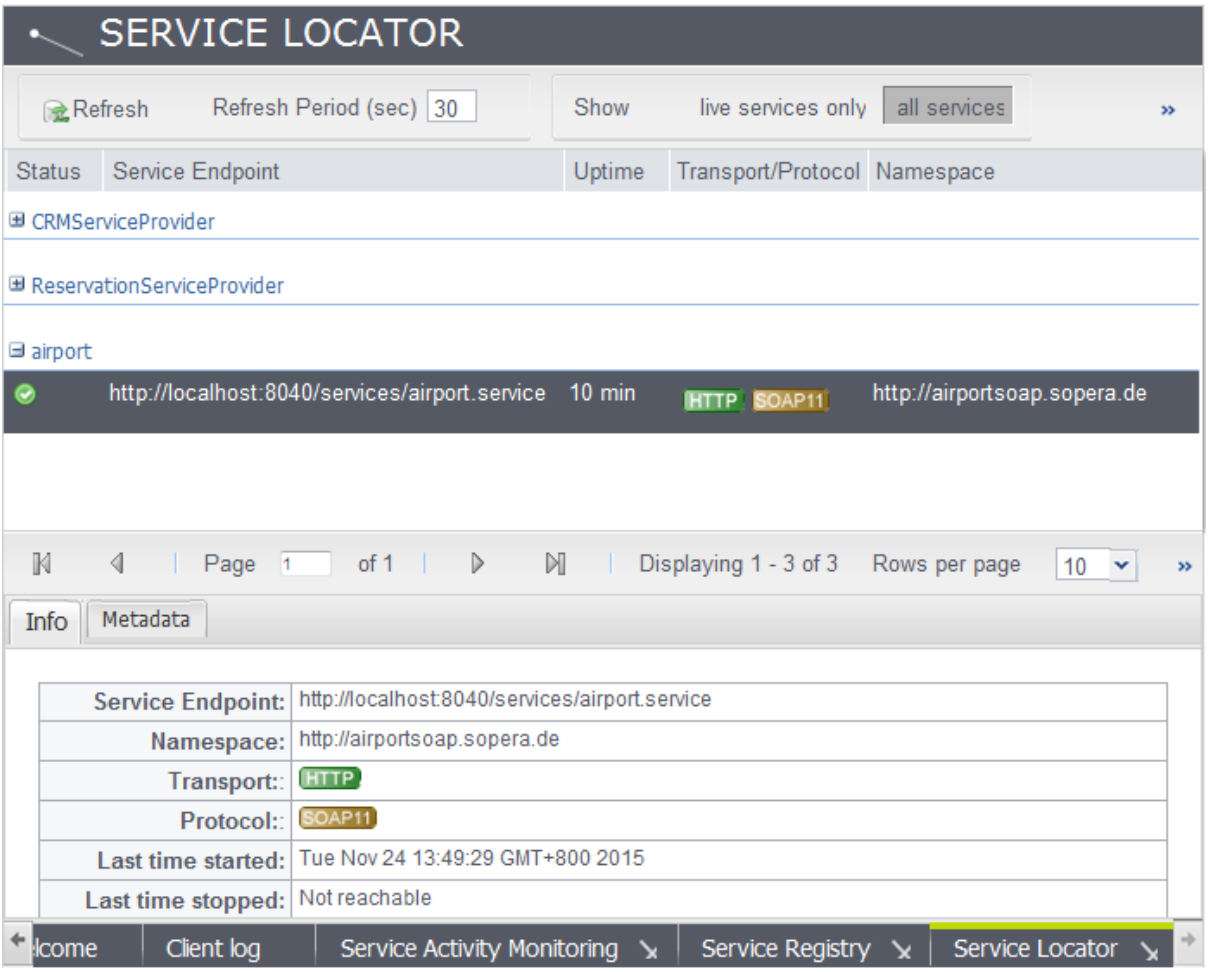
1. In the task list of the **ESB Conductor**, select the execution task you create on the Service, here it is *airport*.
2. Click **Deploy** on the top toolbar and wait a few seconds. The service is deployed and the task status changes from **Ready to install** to **Deployed and started**.

Repeat these steps to deploy and start the data service Job and the Route.

D.4. Monitoring the Service endpoints

After you executed the *airport* Service and its consumer Job and the consumer Route, you can monitor the Service endpoints status on the **Service Locator** page.

For more information on how to execute the Service, the data service Job and the Route, see *Executing a Service, a data service Job and a Route* .



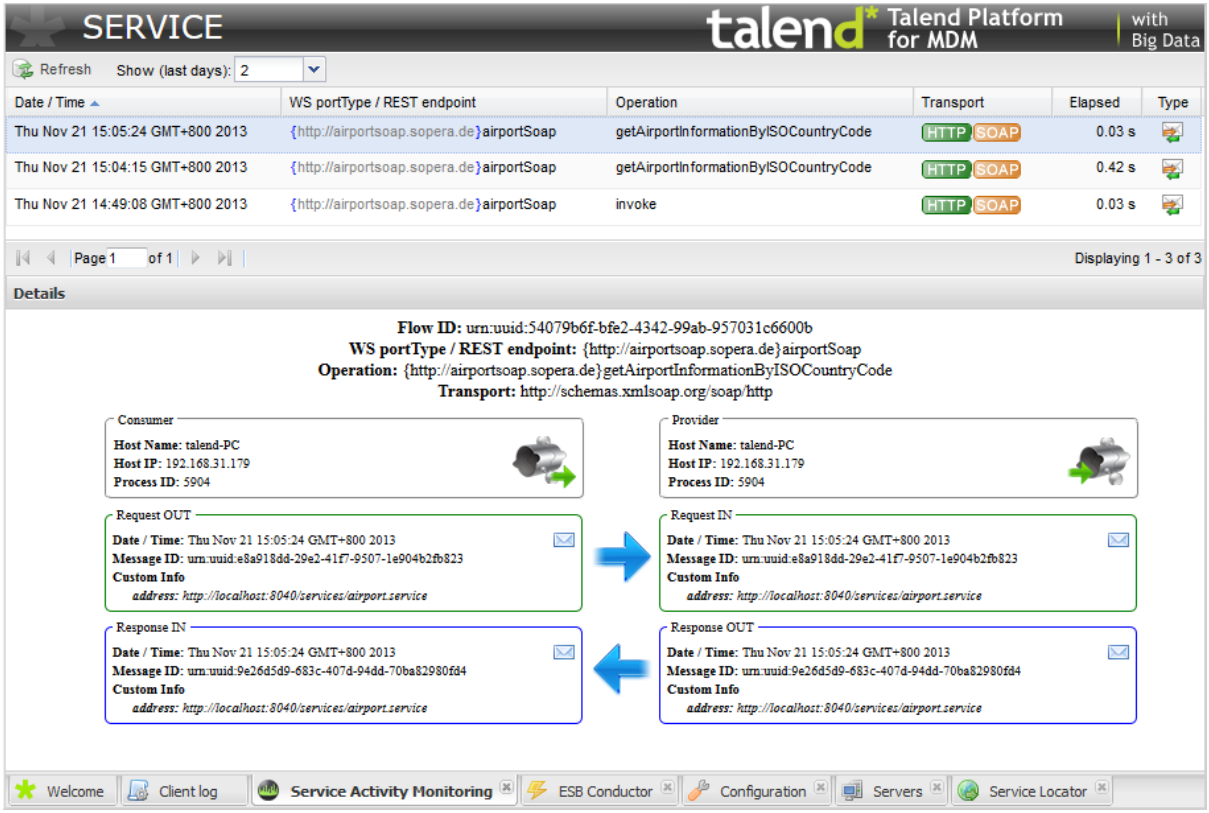
As shown in the screenshot above, the *airport* service is shown in list, with its status, service endpoint, uptime, transport/protocol, and namespace provided. The detailed information of it is shown in the **Info** tab.

For more description about the **Service Locator** page, see *Monitoring the Service endpoints*.

D.5. Monitoring the Service activity

After you executed the *airport* Service and its consumer Job and the consumer Route, you can monitor the message exchanges between the Service and its consumers on the **Service Activity Monitoring** page.

For more information on how to execute the Service, the data service Job and the Route, see *Executing a Service, a data service Job and a Route* .



The **Service Activity Monitoring** list provides aggregated information where all events related to the same message exchange are grouped together. The details of the selected event is shown on the lower half of the page.

A single request-response call is translated into 4 events, two from the consumer side (Request-OUT and Response-IN) and two from the provider side (Request-IN and Response-OUT).

For more description about the information shown in the **Service Activity Monitoring** page, see *Monitoring the Service events*.