Talend User Component tPostgresqlConnectionPool*

Purpose

This component provides a data source to normal jobs as well as to services made in DI technology.
The idea is to have a connection pool wth following advantages:

1. The pool can be used in normal DI jobs, especcially in use cases where worker job needs a database connection and these jobs are called very frequently
2. The pool can be configured with normal context variables and can therefore can be configured with the same configuration file as the DI batch jobs.

Talend-Integration

You find these components in the palette under Databases/PostgreSQL

Basic settings

Property	Content
Operational Mode	**Create Connection Pool**: Creates a connection pool for the PostgreSQL database If a pool already exists with this name, **Close Connection Pool**: Closes the pool. *Next next modes are independent from the kind of the database.* **Provide pooled DataSource in child job**: This causes every database component which is configured to use the data source gets its own connection. Otherwise ALL components works with the SAME connection. **Workaround let connection work with datasource:** Let the connection get its own connection from the data source. It is a workaround for the bug TDI-36765. The function is inactive in the case the mentioned bug will be solved in any way. (see example at the end of this documentation)
Host	Database host
Port	Database port
Database	Database instance
Schema	Database schema
User	Database user
Password	Database users password
DataSource alias	The alias of the connection pool (JNDI name)
Auto Commit	Set the new connctions auto commit

Advanced settings

Property	Content
Addional JDBC Parameters	Set here the addional JDBC properties. The parameters are key=value pairs separated by a semikolon or &
Test on borrow	If true all connction requested by the job will be checked before delivered
Test while idle	These settings are for the a background check for idle connections
Validation SQL	Set here a cheap SQL to check the connection. Avoid time consuming SQL here!
Time between checks	The time between 2 checks automatically performed in ms
Max idle time	The maximum milliseconds a connection can be idle before it will be removed from the pool
Number checked connection	The number of the connections checked whithin a background check cycle
Initial Size	The initial number of connection made at the start of the pool
Maximum Pool Size	The maximum number of connecxtion within the pool. If this size is reached all next attempts

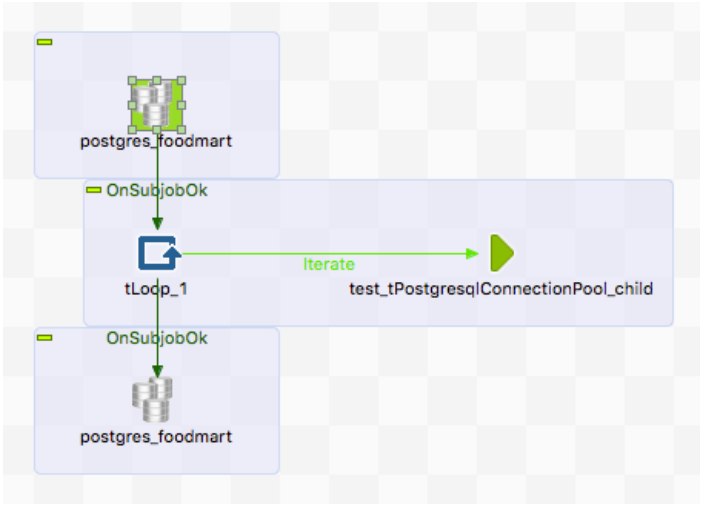
	to get a connection will wait for the next free connection
Max. time to wait for a connection	The max. time a request hase to wait until releasing the thread. The return connection is null – this will in most cases cause an exception. Leaf is blank to avoid the timeout. In this case the job will wait here until a connection becomes free.
Intial SQL	For some reason it is necessary to run special SQL code just at the time when the connction is newly created.
Debug	Cause debug output

Return values

Return value	Content
ERROR_MESSAGE	Last error message. Unfortunately, this is not the error message from the actually running job. This message is build from the tRunTask component. The current TAC web service does not provide this message.
DATABASE	The name of the connected database

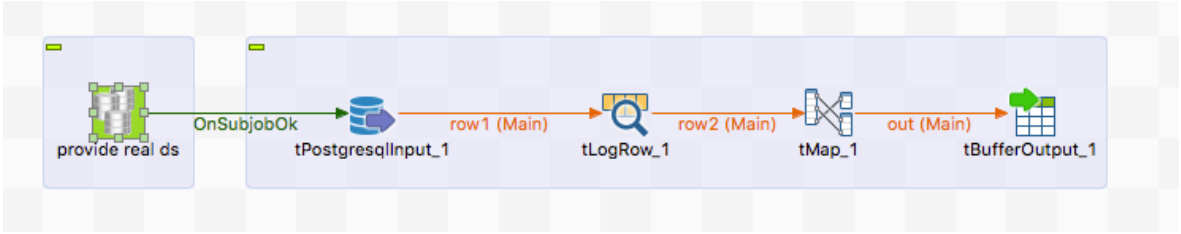
Scenario 1: Using the pool in a batch DI job

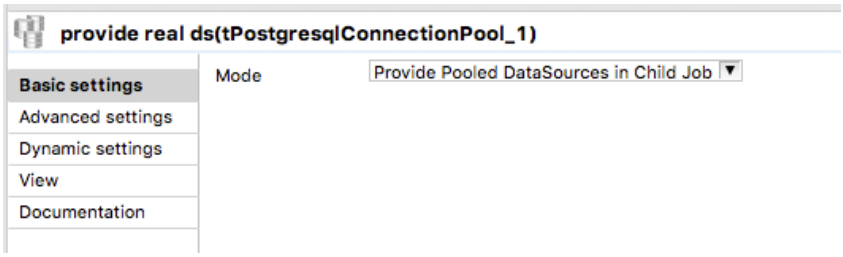
Data-Integration Job which calls very rapidly a job using database connctions.



The loop simulates the call trigger for the embedded job.

In the embedded job this pool can be used as usual. If you want to habe a standard conform behavior of the DataSource (unfortunately Talend in release up to 6.1.1 provides) you can improve the embedded job by adding the component here again with the mode: “Provide pooled DataSource to child job”

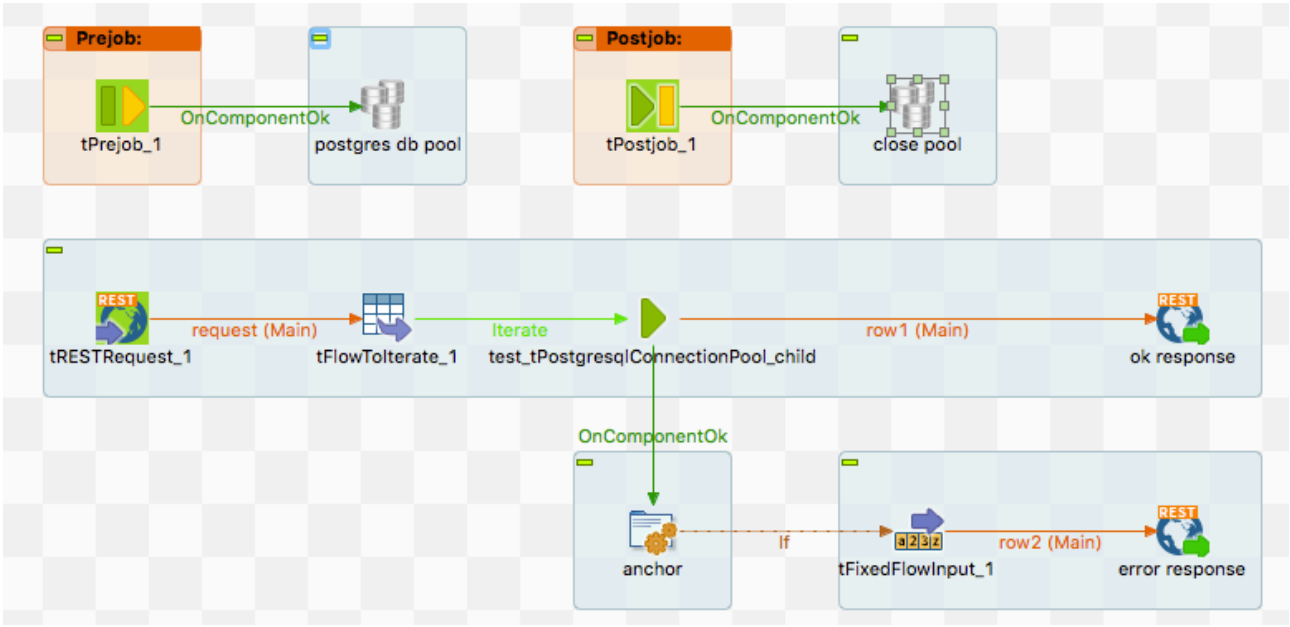




This way all database components using the DataSource settings gets their own connection – exactly what the standard recommends. If you need exactly one connection, leaf out this component or if you wish to steer it use reight at the start of the job a tPostgresqlConnection and configure here the DataSource. In all other database components choose the using of a separate connection -> your tPostgresqlConnection. Do not forget to close this connction again (it means in this case to put the connction back into the pool.

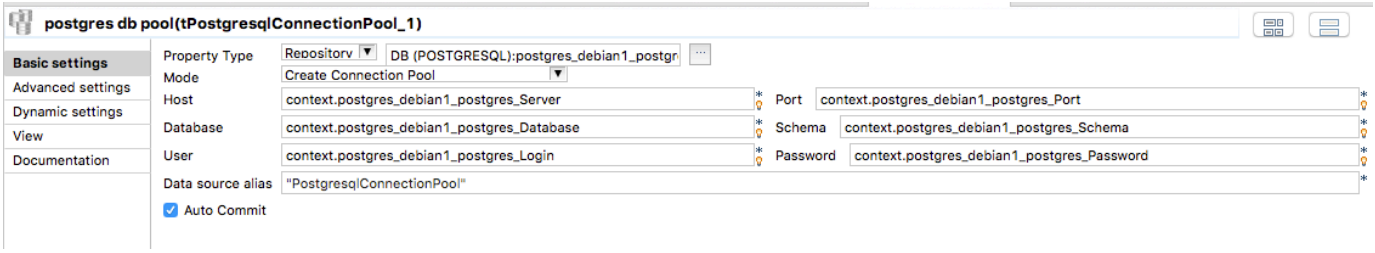
Scenario 2: Using the pool in a service job

This established the pool at the start of the service. The advantage is, you can use the normal context variables to control the pool and use e.g. the implicit context load. The disadvantage of a pool dedicated to one service is the pooled connections are dedicated to this service. Because of the idle eviction this does not lead to a unwanted high number of connections.



The service design. If the service will shut down the pool will be closed this way.

Here the settings:

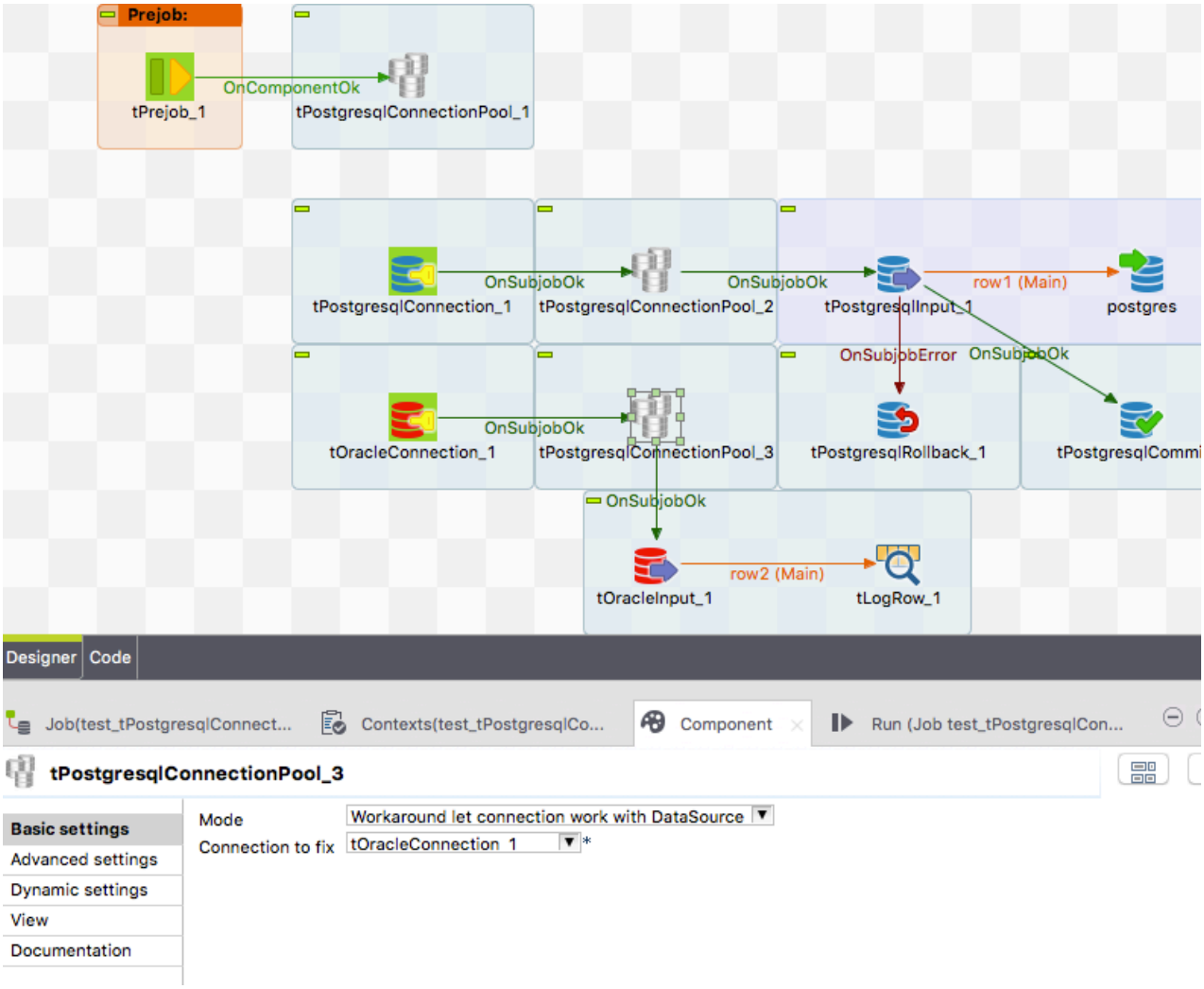


The child job is the same as in Scenario 1.

Scenario 3: Workaround for the bug TDI-36765

The mentioned bug describes the problem a connection fetched via the DataSorce settings will be handled as singleton connection. The actual connection component does not establish the connection and all components referencing to the same data source indeed get the exaclty same connection. This leads to a number of problems, especcially in case this job works within a service.
A solution is on the way but in Talend ESB 6.1.1 und 6.2.1 this bug will still exist.

It exists a workaround and with the help of this component you can enforce this workaround in your job.
You need this component twice:
Right at the start of the you need this component with the mode: **Provide pooled connections to this child job**
And right after every connection component like tOracleConnection or tPostgresqlConnection you have to set this component with the mode: **Workaround let connection work with datasource**.



The tPostgresqlConnectionPool_1 component in this job replaces the singleton connection provier with a provider allowing to have multiple connection from the same data source.
The tPostgresqlConnectionPool_2 component fixes the behaviour of tPostgresqlConnection_1 and allows to use this component to have its own connection.
The tPostgresqlConnectionPool_2 component fixes the behaviour of tOracleConnection and allows here this component to have its own connection.
In the mode: **Workaround let connection work with datasource** and **Provide pooled connections to this child job** the connection pool components works completely database type indifferent.
The workaround code is designed to not disturbing in case of the bug TDI-36765 will be solved, so do not worry about any Talend updates.