MTM Tool
User guide

Senla Inc. 2024

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Introduction

Who is this guide intended for?

'MTM Tool' is a solution created to simplify working with data and improve the management of records linked by many-to-many relationships. (*Hereafter, the term "Solution" will be used to refer to 'MTM Tool'.*)

This guide is intended for both regular Salesforce CRM users and system administrators who would like to explore the capabilities of the Solution and learn how to apply it in their daily work.

Contents of the guide

The "How to use the Solution" section describes the areas where the Solution can be used in Salesforce CRM, its functionality, and how it helps create and delete records.

The "How to configure the Solution" section is dedicated to the technical aspects of setting up and using the Solution. It explains how the settings affect functionality, describes the setup methods (manual and wizard-based), and lists the technical limitations.

How to use the guide

There is no strict order for reading the manual. Regular users typically only need to read the "How to use the Solution" section. The "How to configure the Solution" section is primarily intended for system administrators. However, it is recommended that administrators first read the "How to use the Solution" section to gain an understanding of its functionality, leading to more meaningful configuration.

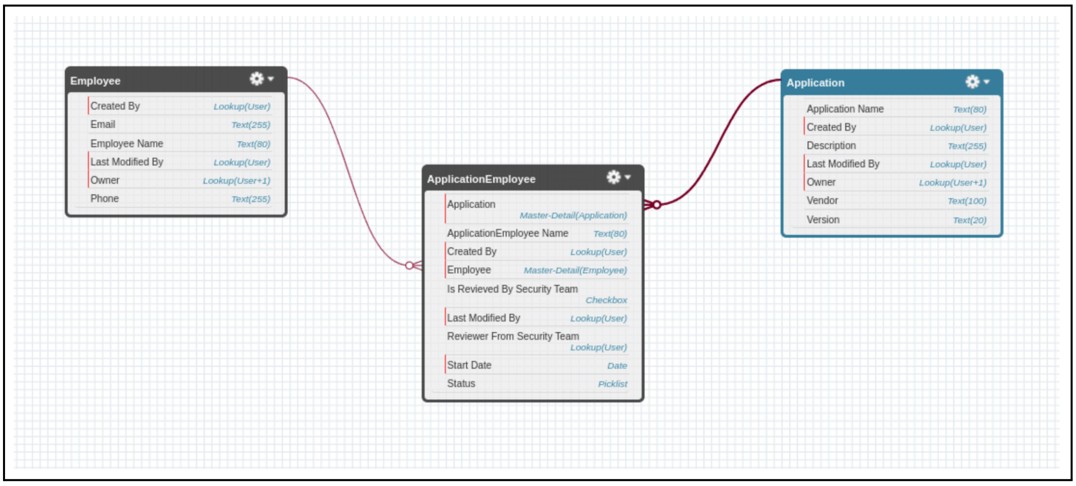
Specifics of material presentation

To provide the clearest explanation of how to configure and use the Solution, the guide uses the following data model:

The data model describes two entities: Application and Employee. The entities are connected by a many-to-many relationship using the ApplicationEmployee junction object.

The ApplicationEmployee object, in addition to the mandatory fields (master-detail) for the Application and Employee objects, has several auxiliary fields:

- Status (picklist);
- StartDate (date);
- Reviewer For Security Team (user lookup);
- Is Reviewed By Security Team (checkbox).



With this data model, a Salesforce CRM user often needs to:

- link Application and Employee records by creating ApplicationEmployee junction object records;
- unlink Application and Employee records by deleting ApplicationEmployee junction object records.

All examples and illustrations in the guide are based on this data model.

How to use the Solution

Areas of use and functionality

About the Solution

MTM Tool simplifies the work of CRM users managing records in a many-to-many relationship.

Functional problem: users spend a lot of time performing repetitive tasks when processing data.

Solution: MTM Tool, with its user-friendly interface, speeds up these processes by reducing the number of required actions, suitable for both individual and bulk record processing. The Solution can be added to the Lightning record page.

Functional benefits

Works with standard and custom objects: no restrictions on object type — users can work with both standard and custom objects.

Supports lookup and master-detail relationships in various combinations: no limitations on the relationship type — users can work with objects linked by either type of relationship.

Respects security settings (access to fields and records): users only have access to objects, fields, and records based on the organization's security settings.

Allows creation and deletion of junction records, both in bulk and individually.

Allows adding fields, beyond the links to parent records, when creating junction records: simplifies and speeds up the process.

Search records required for processing: allows filtering the list of records and processing only the necessary ones.

Fine-tuning for each object: separate configurations for different objects, customizable based on the specifics and fields of each object.

Lightning Ready: the Solution works with the Lightning Experience interface — a modern Salesforce UI.

Mobile support: works in Salesforce's mobile version, enabling users to manage data on the go.

Drag-and-drop interface: simplifies tasks for users accustomed to this interaction method.

Solution is:
Free: no additional cost to the client.

Easy to install, configure, and use: no need to involve specialists. A simple procedure for training colleagues.

Supplemented with user instructions and a demo video: helps users get started without external support.

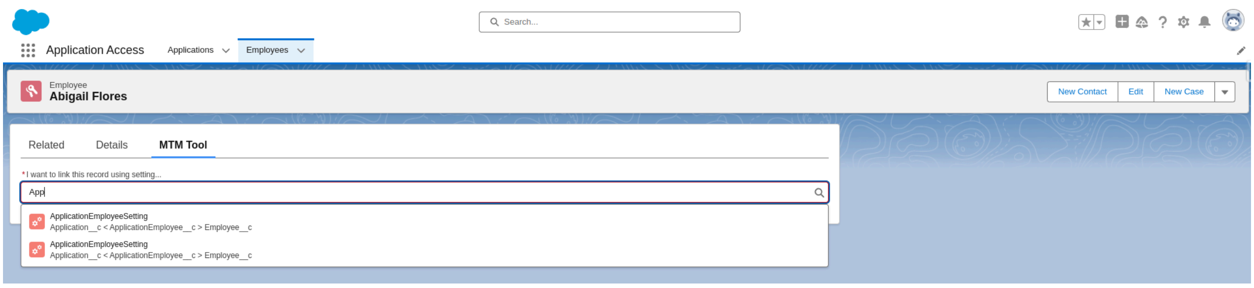
Linking records

Let’s imagine a user needs to link an Employee record to several Application records using the Solution.

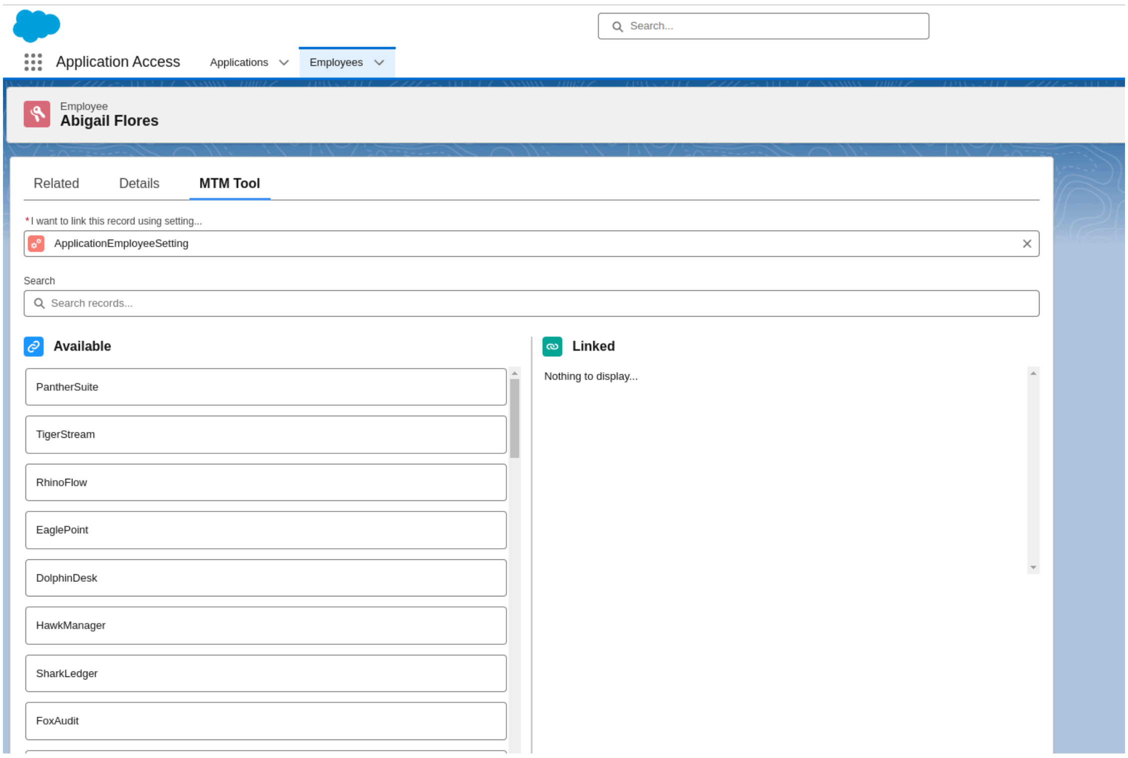
Precondition: the Solution must be distributed by the admin to the Employee Lightning record page.

Navigate to the required page

First, the user goes to the Employee Lightning record page and starts typing the name of the setting in the "I want to link this record using setting..." input field. Optional items include hints describing which records need to be managed, simplifying the task.

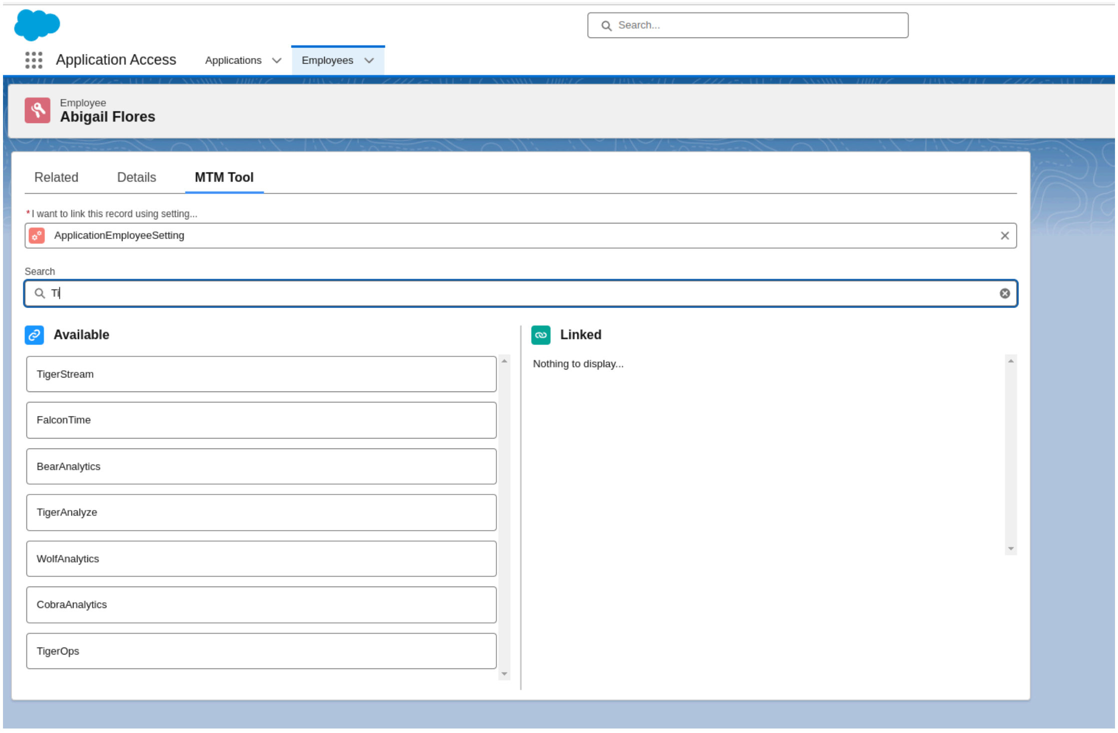


After selecting the setting, the user sees a list of Application records available for linking:



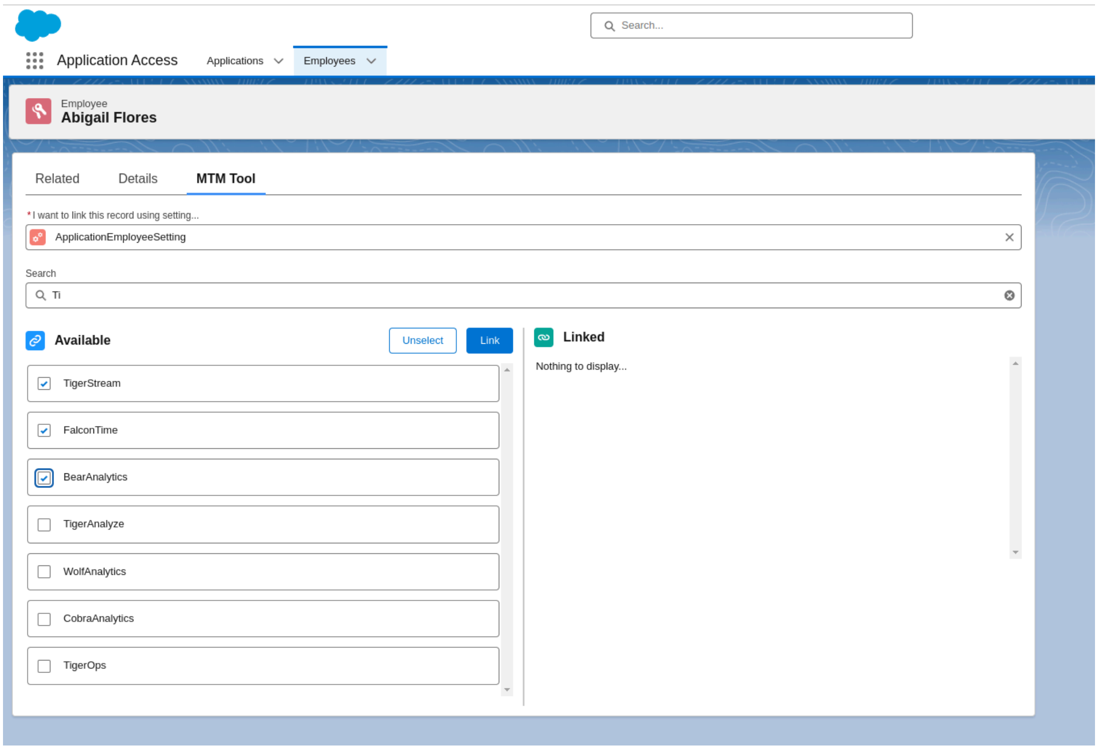
Search for records to link

The user can search for records using the "Search" field:



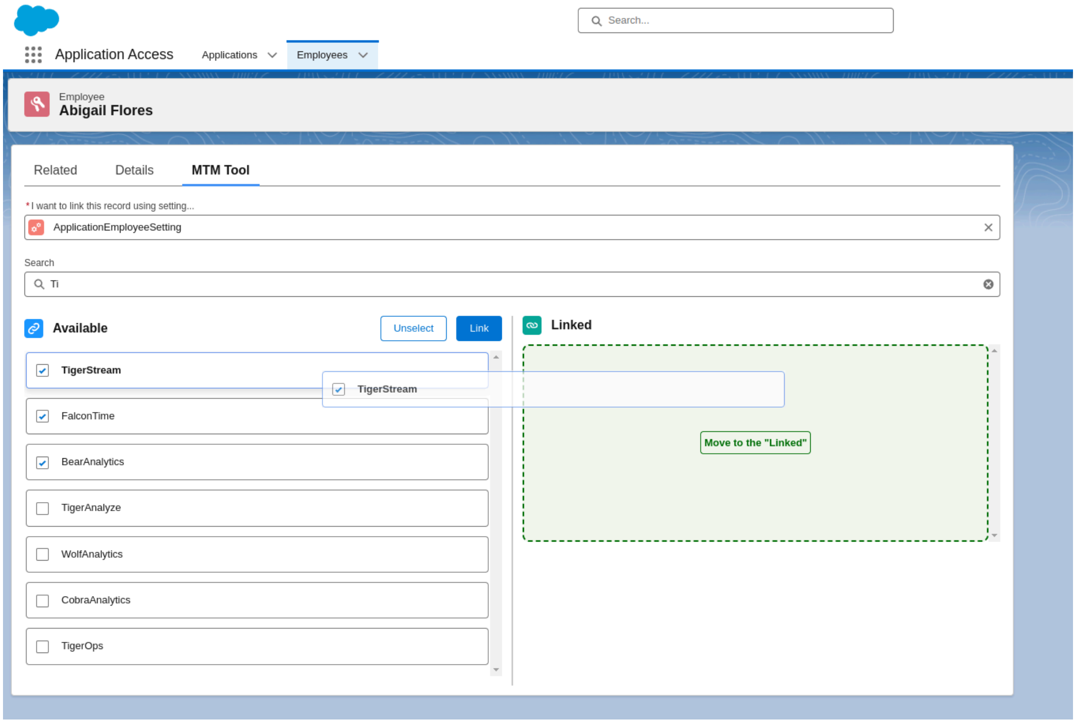
Selecting records for linking

To link Employee records to Application records, the user selects the checkboxes next to specific records.



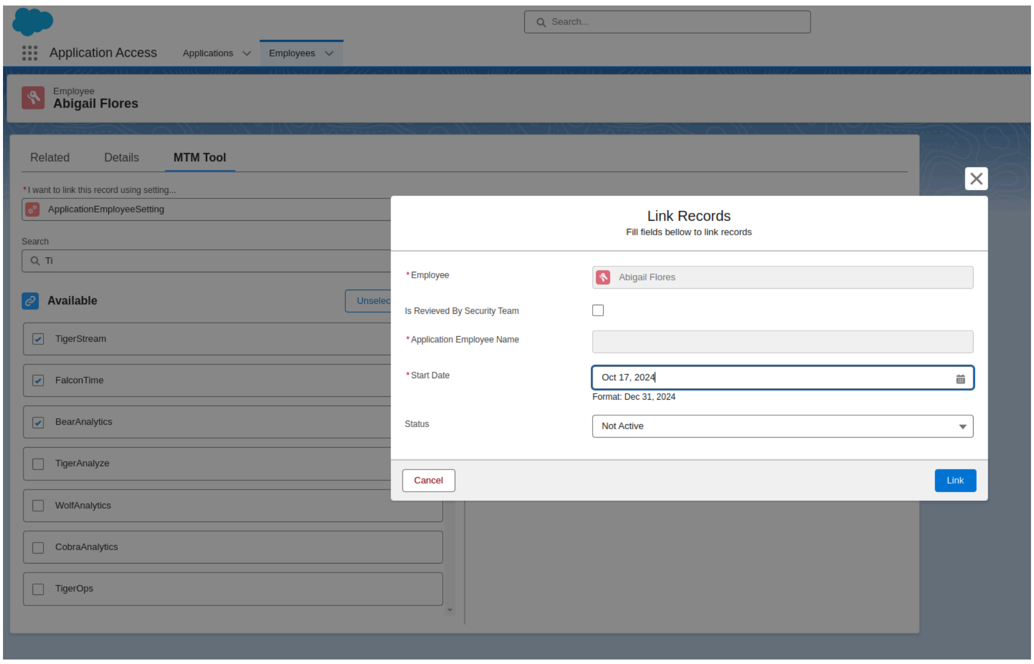
Start linking

To proceed, the user clicks the "Link" button, which appears only after selecting records. Alternatively, the user can use the drag-and-drop interface.



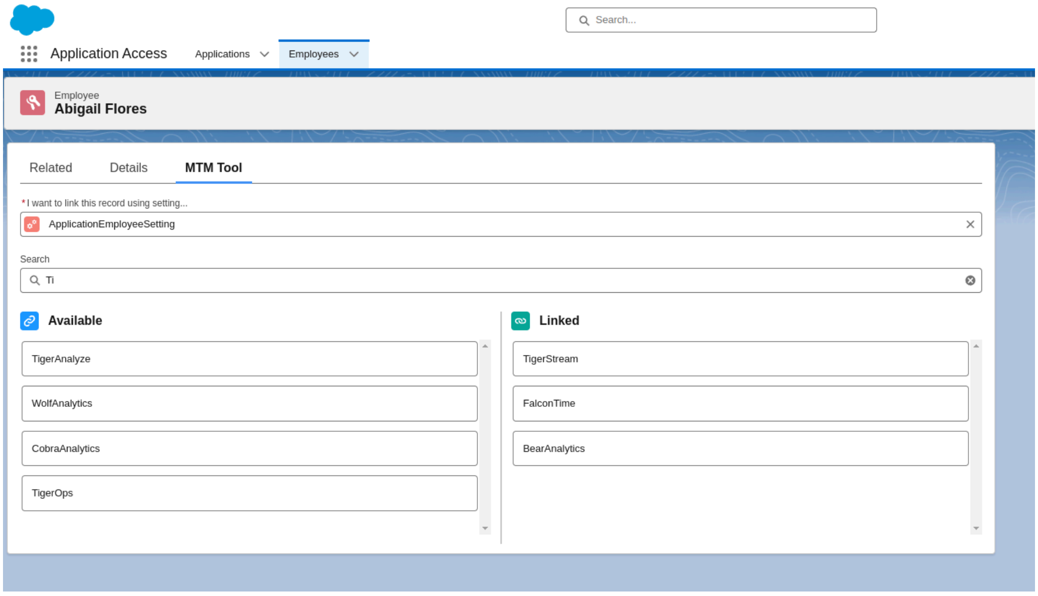
Additional actions during linking

The following form appears. The user is prompted to fill in the required fields (defined during the “Junction Fields” step) and click the "Link" button.



Completion of linking

Once completed, junction records are created, and the linked Application records move to the "Linked" list:



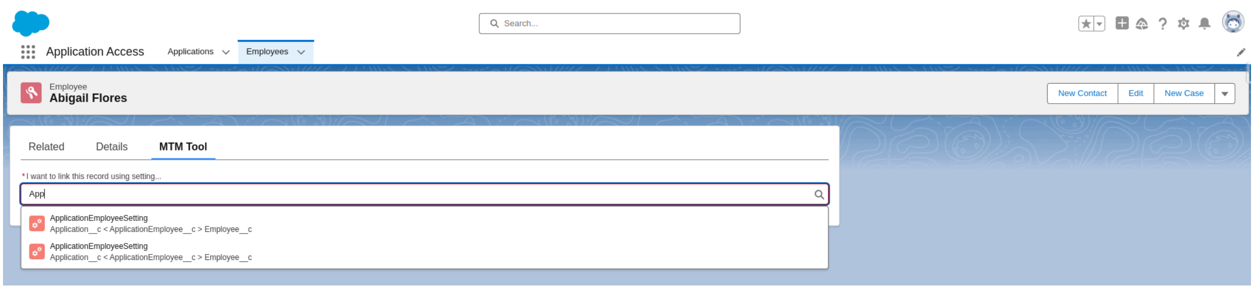
Unlinking records

Let's imagine a user needs to unlink an Employee record from two Application records using the Solution.

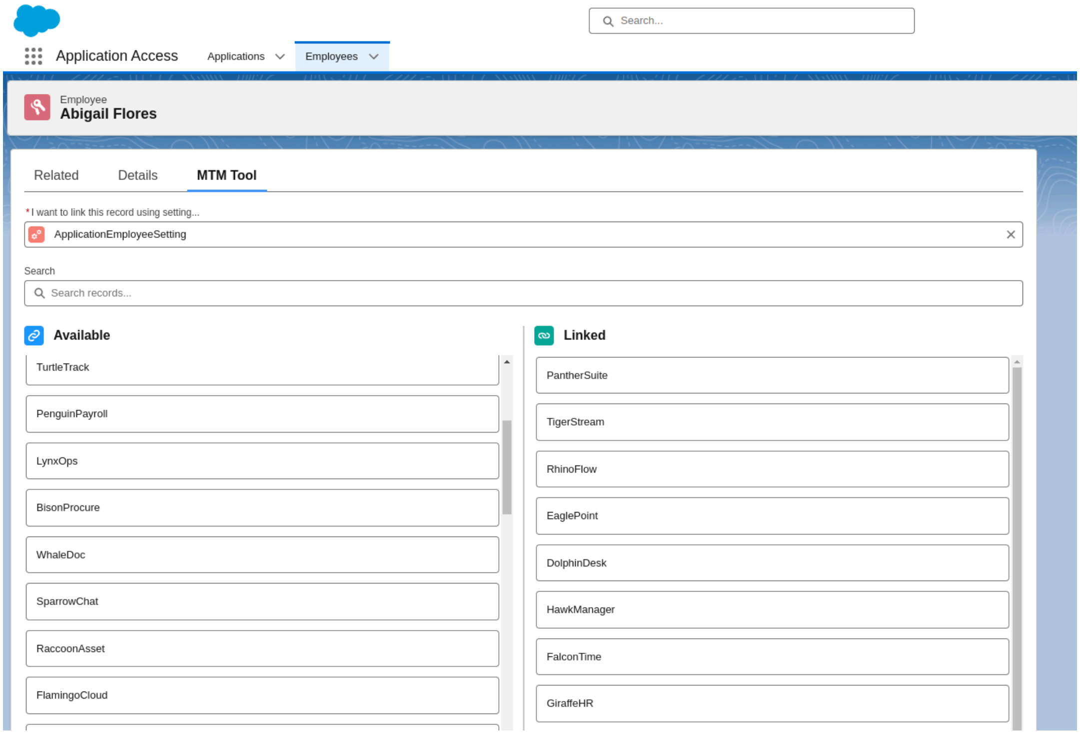
Precondition: the Solution must be distributed by the admin to the Employee Lightning record page, and the Employee must already be linked to several Application records.

Navigate to the required page

First, the user navigates to the Employee Lightning record page and types the name of the setting in the "I want to link this record using setting..." input field. Optional items include hints describing which records need to be managed, simplifying the task.

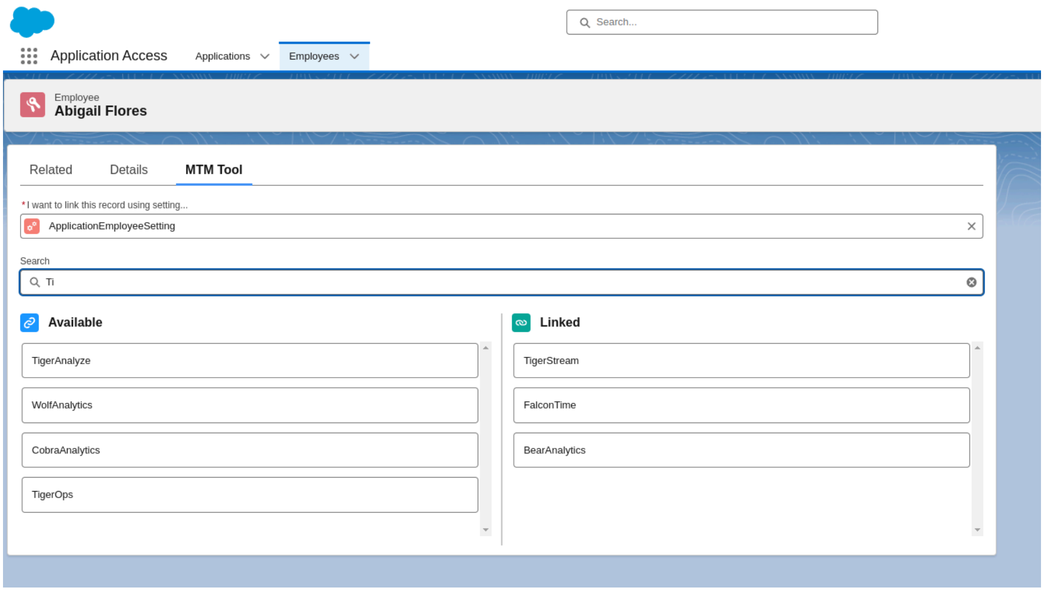


After selecting the setting, the user sees a list of linked Application records on the right side of the table:



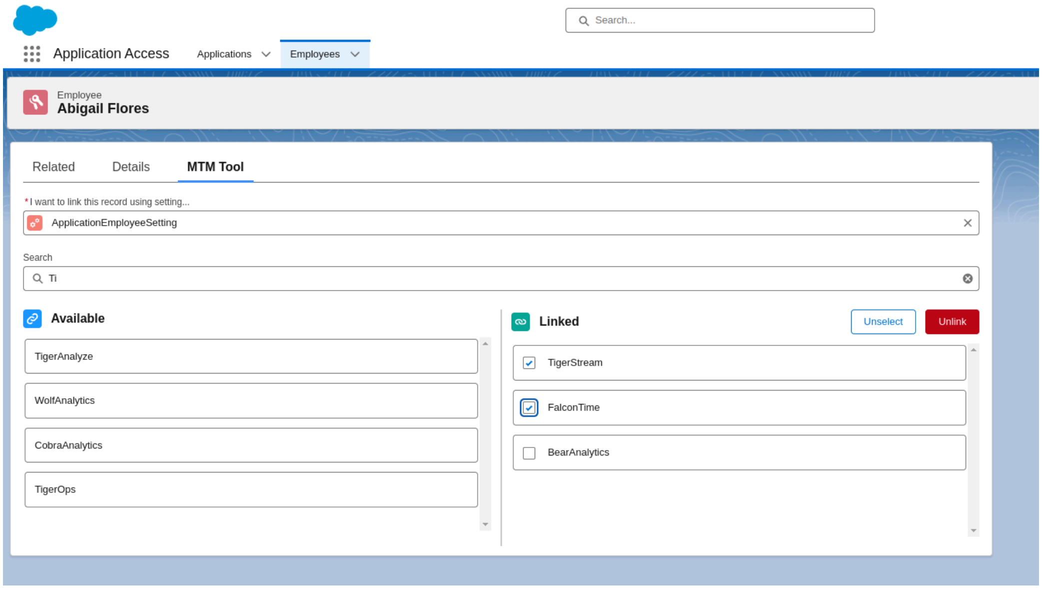
Search for records to unlink

The user can search for records using the "Search" field:



Selecting records for unlinking

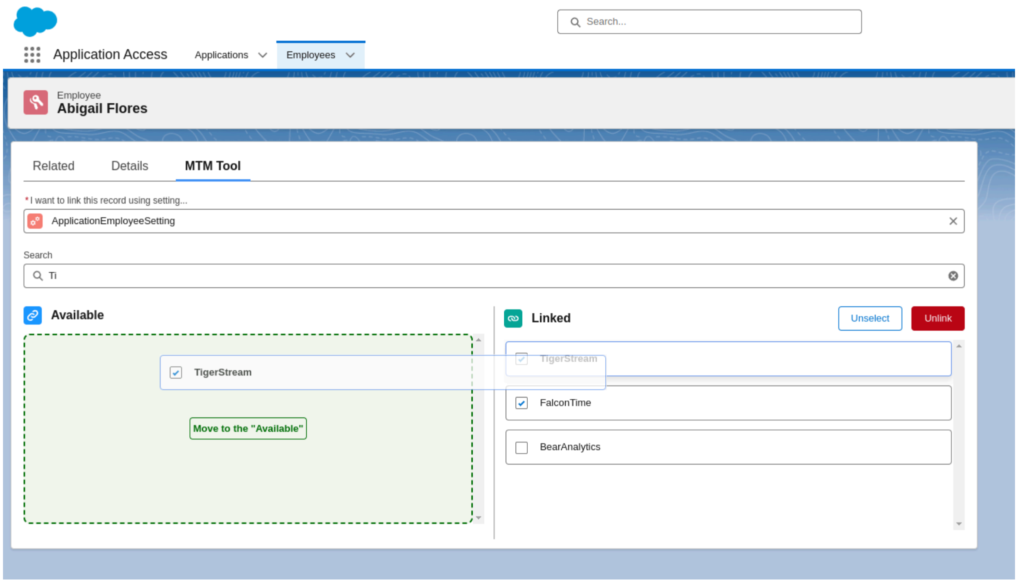
To unlink Application records from the Employee record, the user selects the checkboxes next to the relevant records in the “Linked” column:



Start unlinking

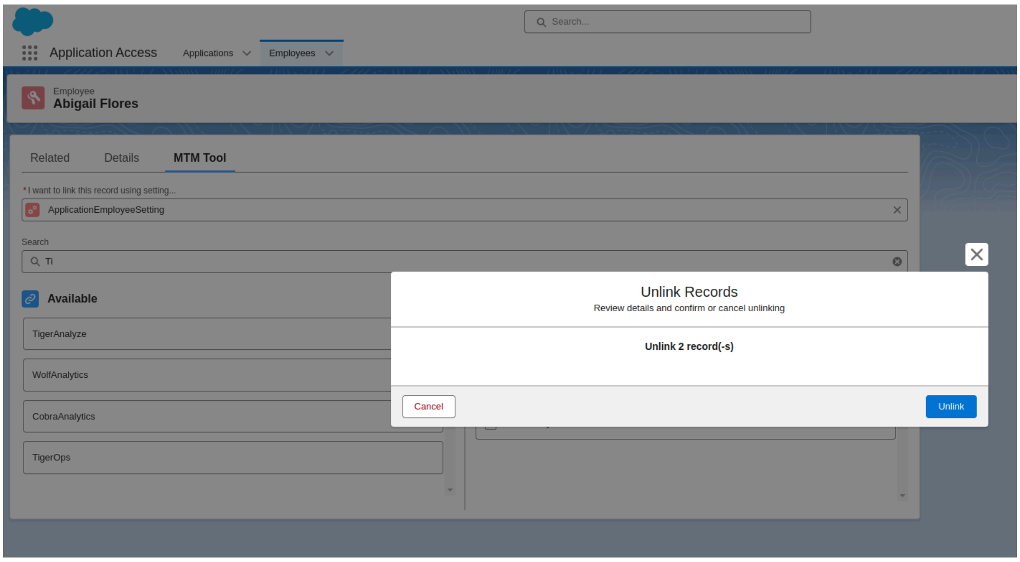
To proceed, the user clicks the "Unlink" button, which only appears after selecting records.

Alternatively, the drag-and-drop interface can be used.



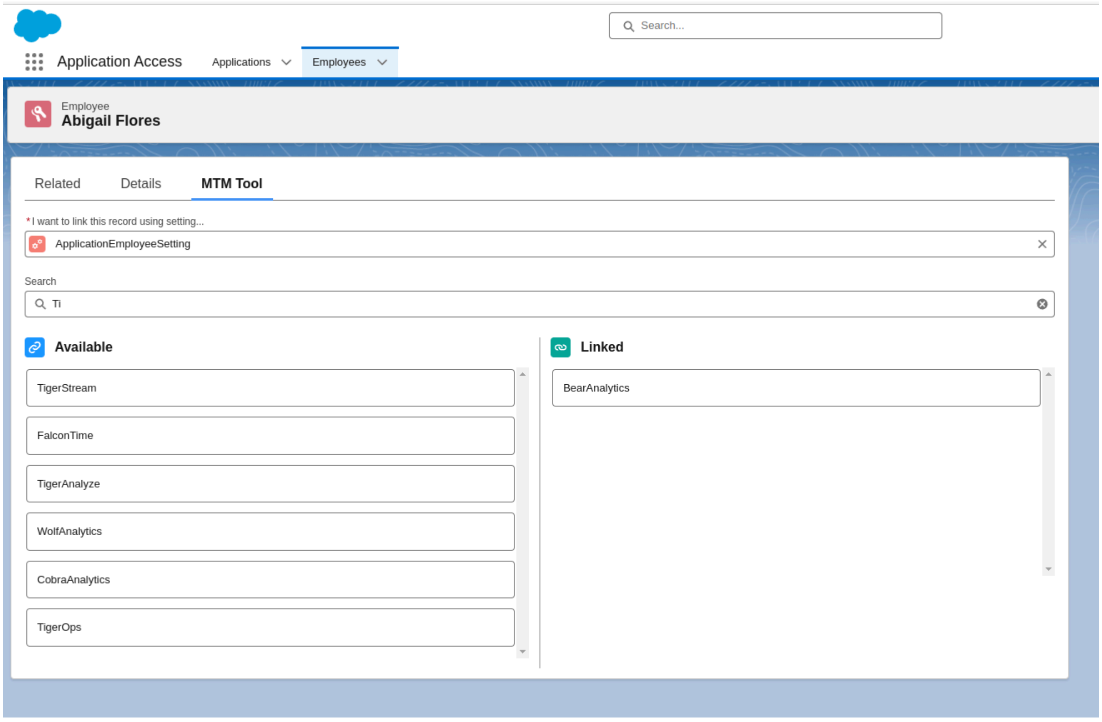
Additional actions during unlinking

The following confirmation screen appears. The user needs to confirm the unlinking action.



Completion of unlinking

Once completed, the junction records are deleted, and the unlinked Application records move back to the "Available" list:



How to configure the Solution

Areas of use and technical capabilities

Technically, the Solution is implemented using Lightning Web Components.

The Solution can be placed on the Lightning record page of either or both objects involved in the many-to-many relationship (Application or Employee).

After navigating to the AppBuilder -> Section Components -> Custom-Managed - Custom LWC ‘MTM Link Tool’ is available.

The main technical characteristics of the Solution include the following:

- supports operations on junction objects, including creating and deleting records;
- works with both standard and custom objects;
- functions with lookup and master-detail relationships in various combinations;
- respects security settings, including access to fields and records;
- allows for fine-tuning on a per-object basis;
- fully Lightning Ready, compatible with the Lightning Experience;
- includes mobile support for use on mobile devices;
- supports drag-and-drop interface.

Wizard

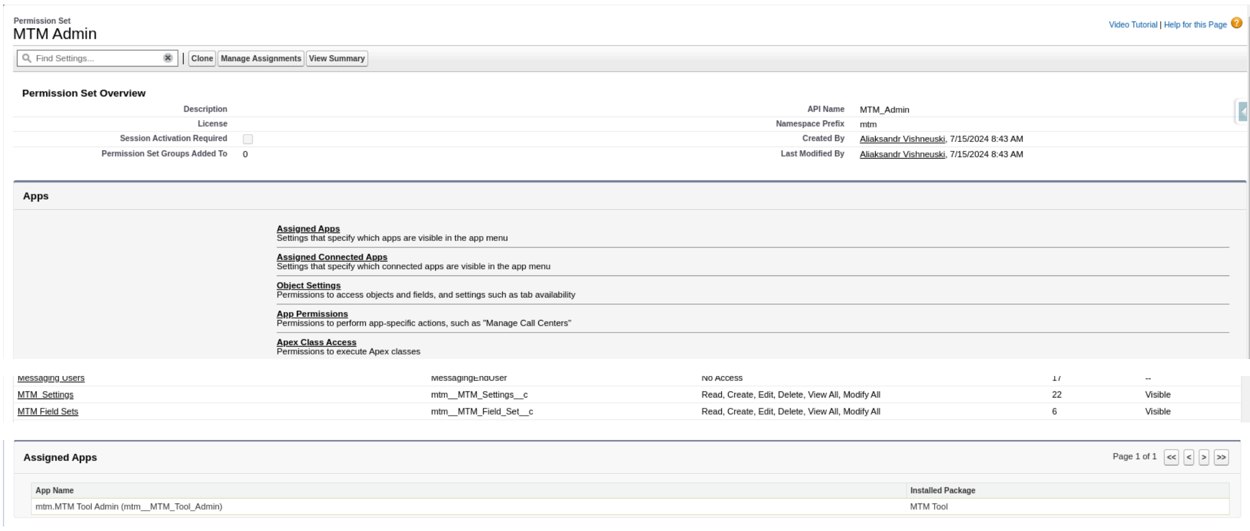
Although manual configuration is possible, automatic configuration is recommended.

The Solution includes the “MTM Tool Admin” application with a built-in creation wizard. It automates the process of creating configuration records, helping to avoid errors and making the configuration process more convenient.

Precondition: the package must be successfully installed.

Granting access to Solution administration

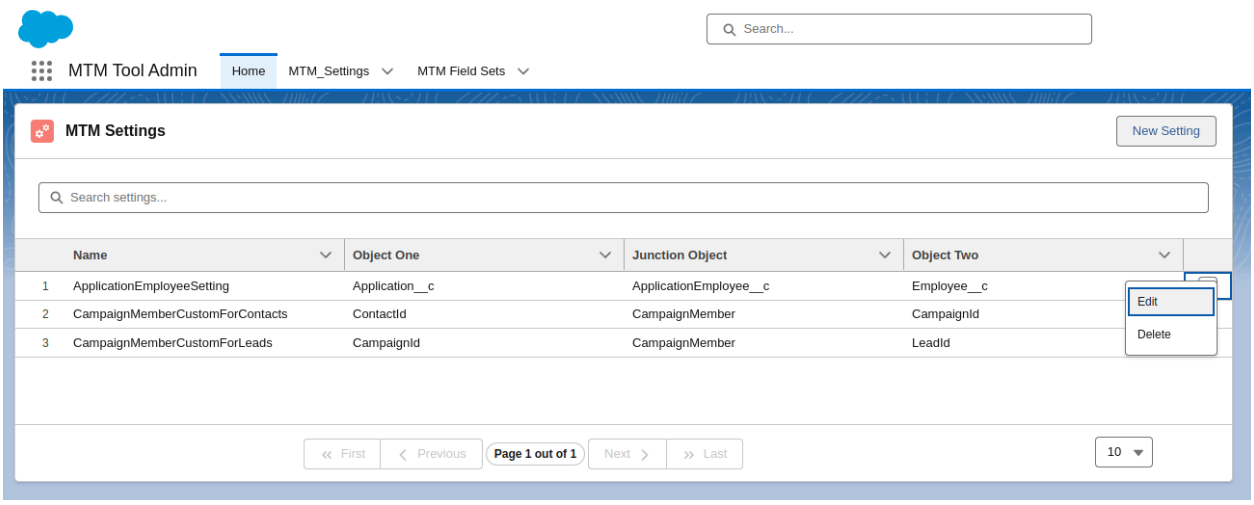
To access the “MTM Tool Admin” application, the admin user must have the "MTM Admin" permission set. This permission grants access to several package objects and the application.



Configuration

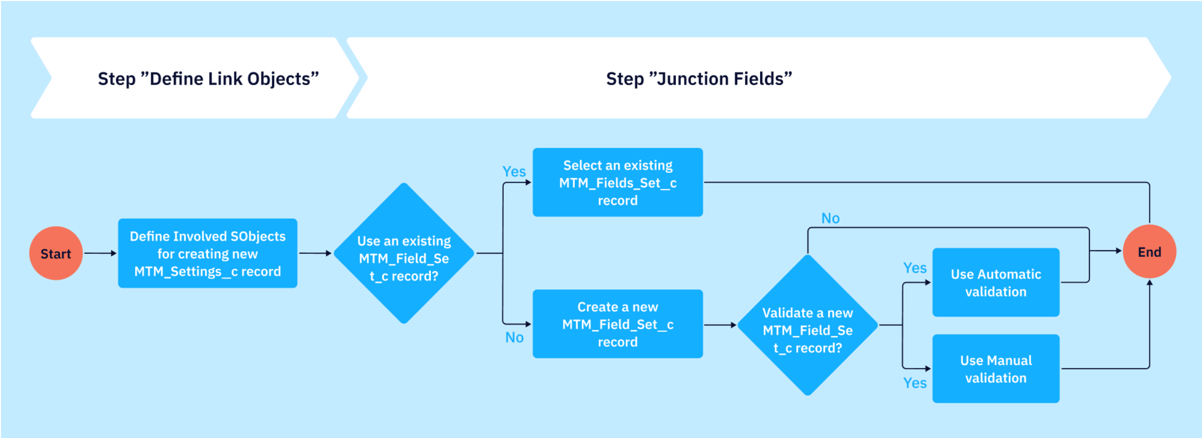
The “MTM Tool Admin” application can be accessed via the AppLauncher and includes the following tabs: Home, MTM_Settings and MTM Field Sets.

From the Home Tab, the admin can create, edit, or delete MTM_Settings__c records, which define how the Solution interacts with junction records.



Create configuration records

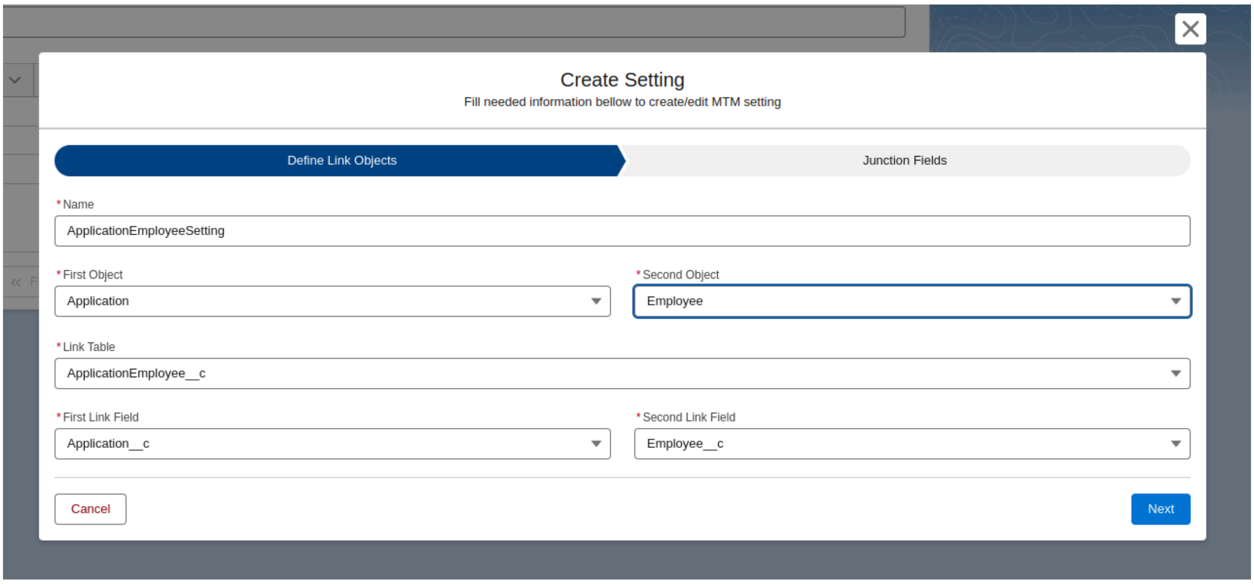
To create an MTM_Settings__c record, click the “New Setting” button and follow the two-step “Create Setting” wizard.



Step “Define Link Objects”

In the first step, “Define Link Objects” you need to fill in the following mandatory fields:

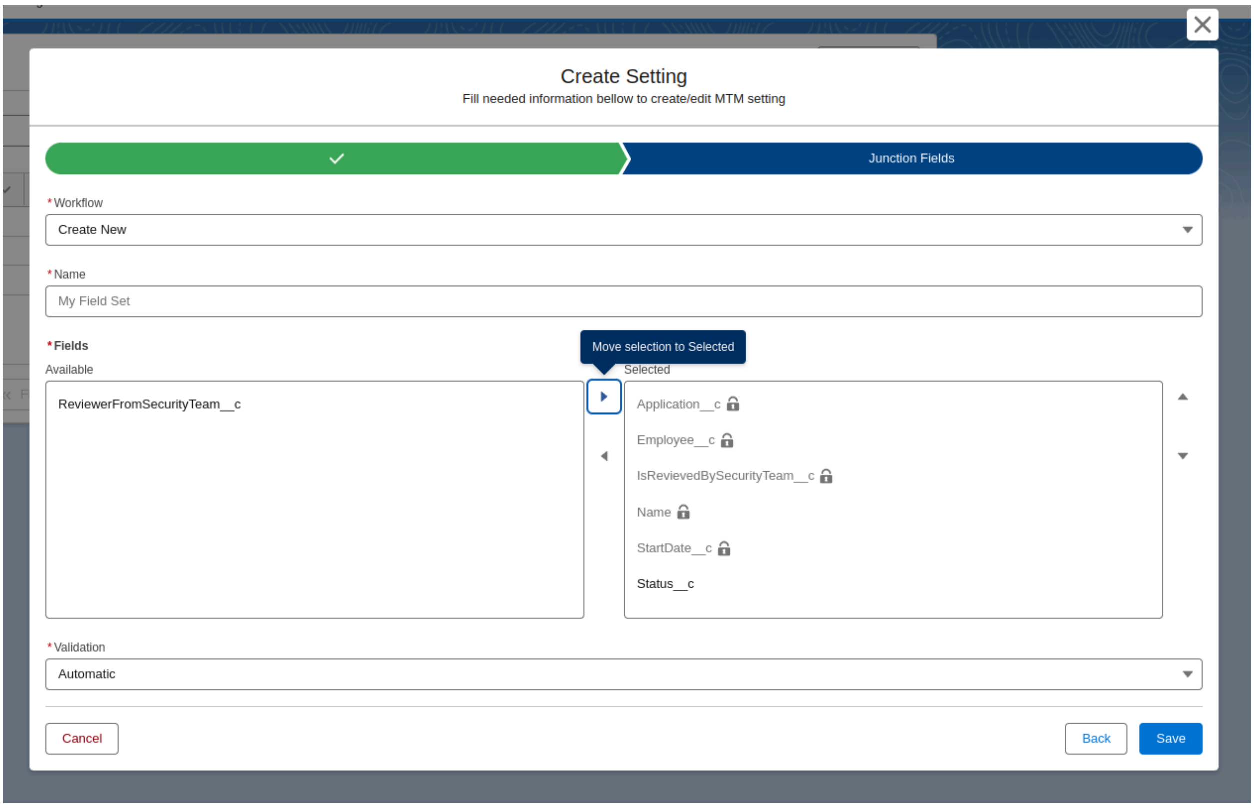
- **Name**: the name of the setting;
- **First Object, Second Object**: the objects being linked;
- **Link Table**: the name of the junction object;
- **First Link Field, Second Link Field**: the fields on the junction object that reference the target objects.



Step "Junction Fields": Overview

After clicking “Next”, the “Junction Fields” step is reached. This step allows the admin to define which fields the Solution should display during the creation of junction records.

Fields in the "Available" list are from the junction object, and fields in the "Selected" list will be displayed during the creation of junction records. Mandatory fields are marked with a lock icon and are automatically added to the "Selected" list.



At this step, there are two options to proceed (as indicated by the **Workflow** field):

- “Create New” Workflow;
- “Use Existing” Workflow.

From a technical point of view, the set of fields is stored in the MTM_Field_Set__c configuration object. The “Create New” workflow allows for building a new set of fields, which is then saved in a new MTM_Field_Set__c record. The “Use Existing” workflow, on the other hand, enables the reuse of previously created field sets by selecting from existing MTM_Field_Set__c records.

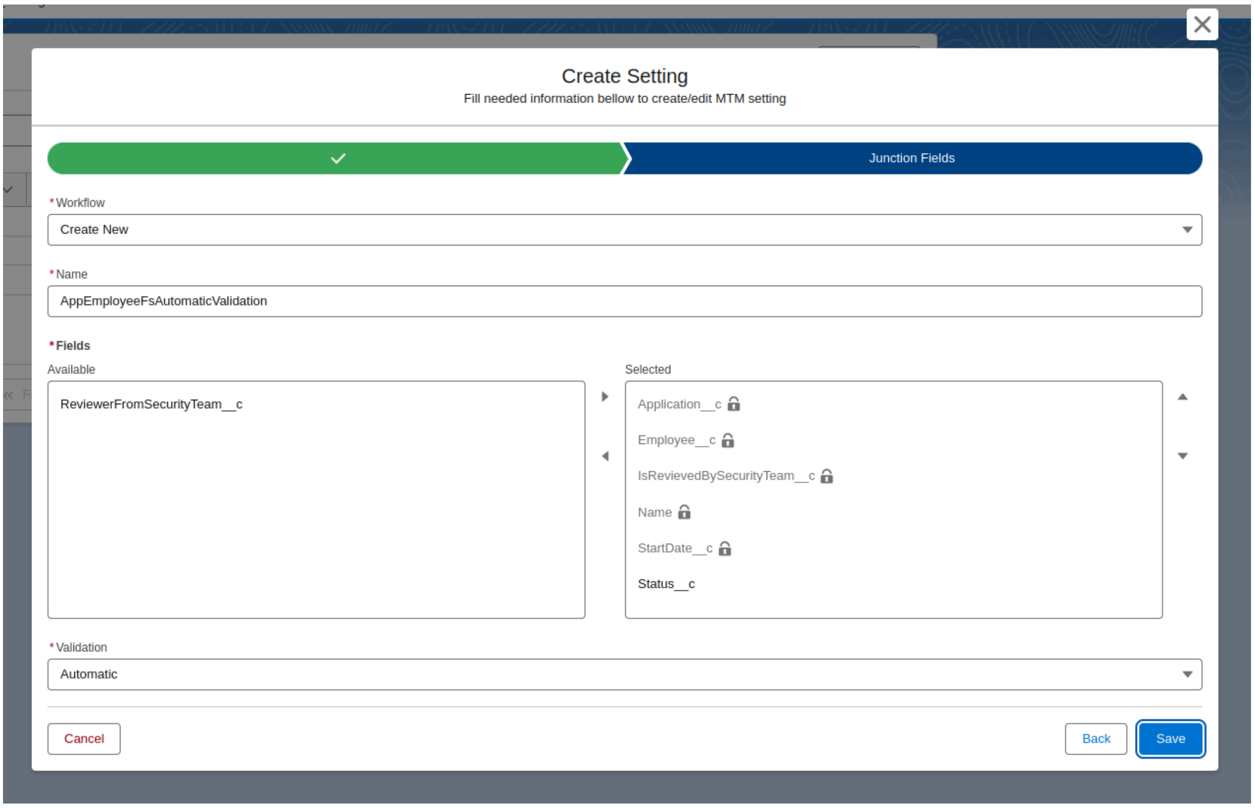
Step "Junction Fields": “Create New” Workflow

To create a new MTM_Field_Set__c record, select the "Create New" option and fill in the mandatory fields:

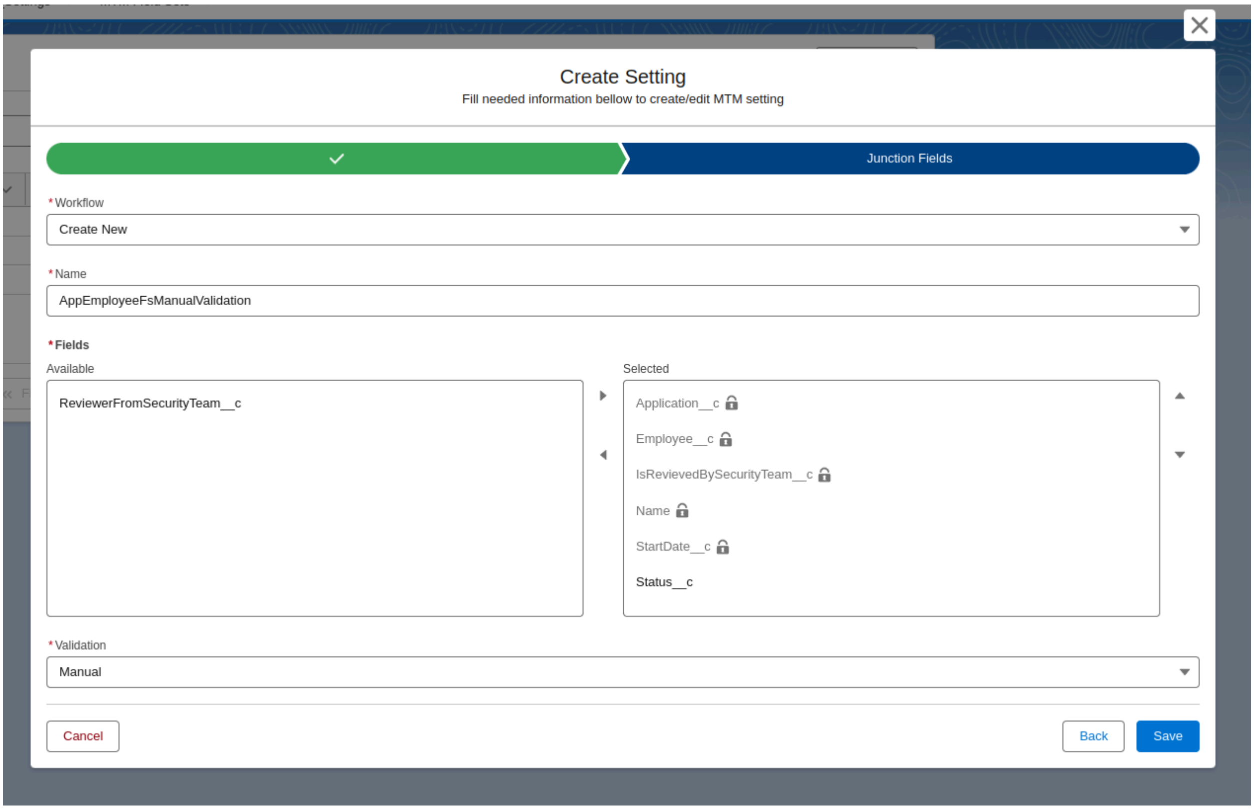
- **Name**: the name of the field set;
- **Fields**: choose the fields to be displayed during the creation of junction records; mandatory fields will be automatically added to the right column;
- **Validation**: the system creates the junction record and attempts to insert it for validity checks before rolling back the transaction; allows to choose between three types of validation:
    - **Automatic**: automatically validates the junction record creation;
    - **Manual**: requires the user to manually fill in mandatory fields for record creation;

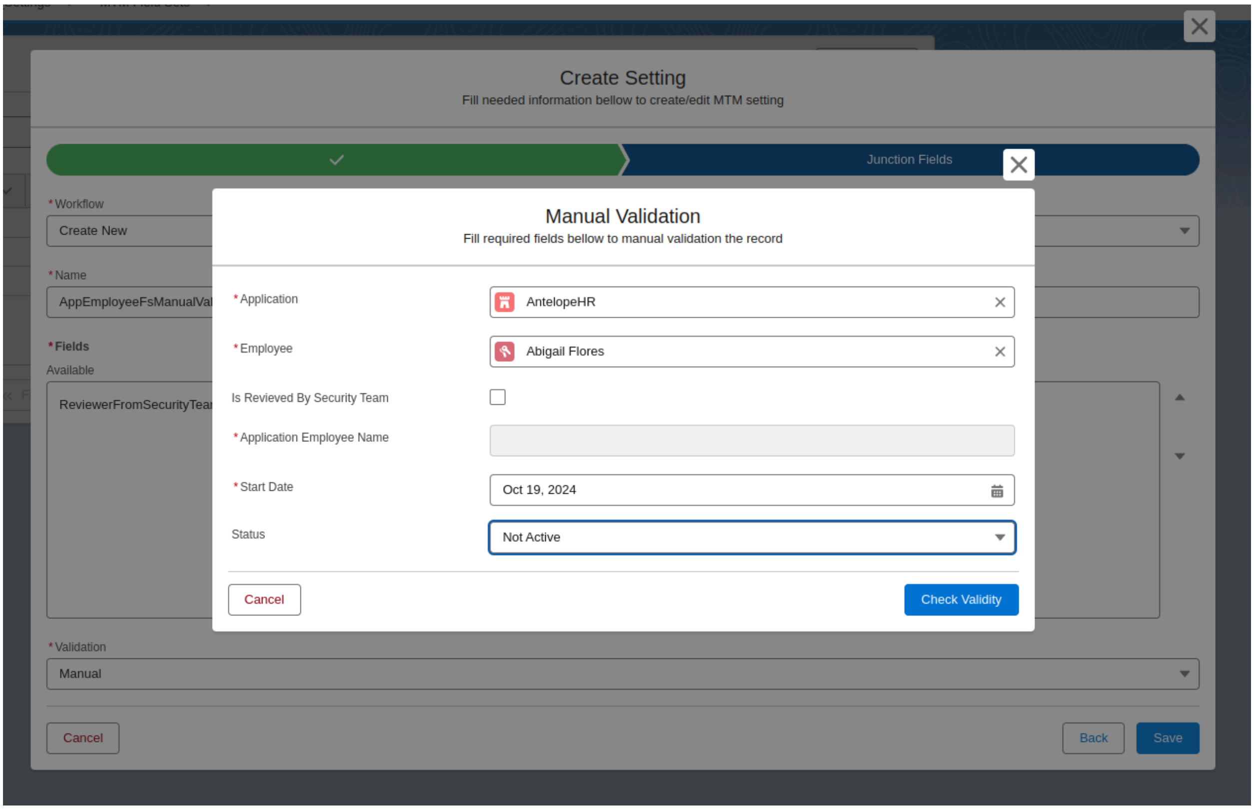
- **Disabled**: skips validation completely.

Example of the "Junction Fields" step with **Automatic** validation:

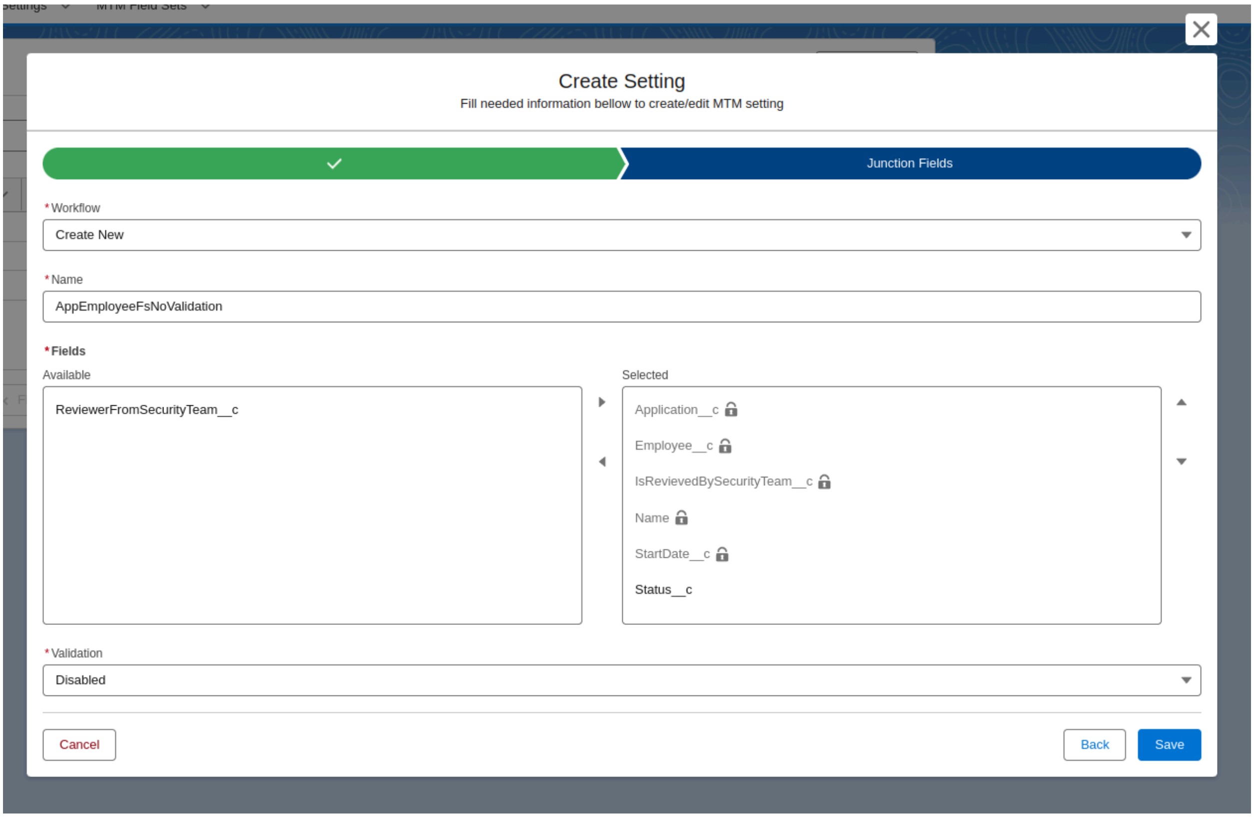


Example of the "Junction Fields" step with **Manual** validation:



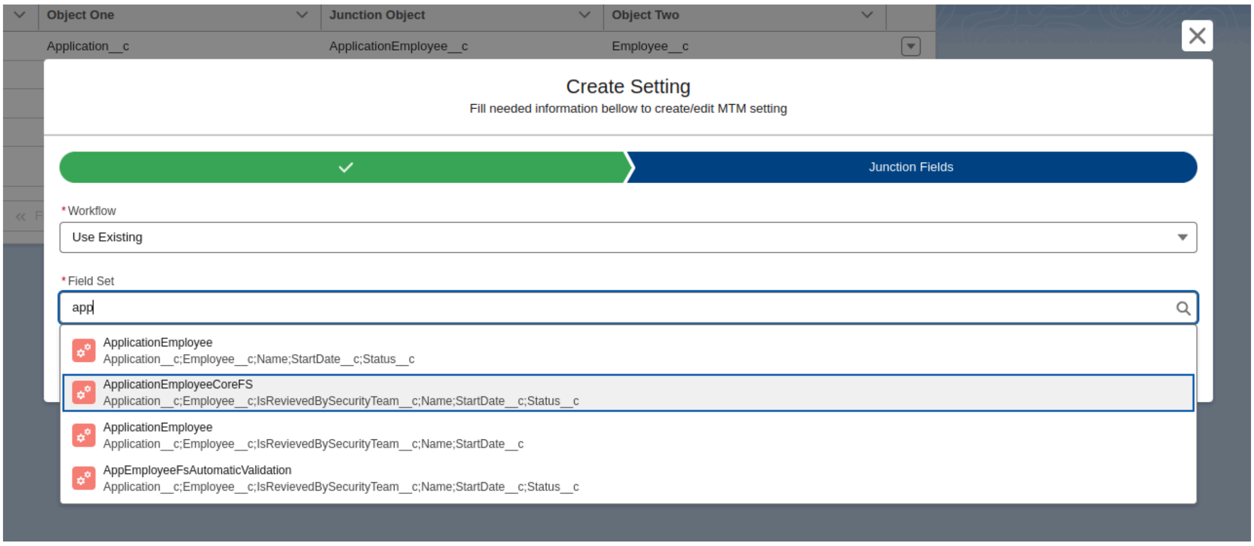


Example of the "Junction Fields" step with validation **Disabled**:



Step "Junction Fields": “Use Existing” Workflow

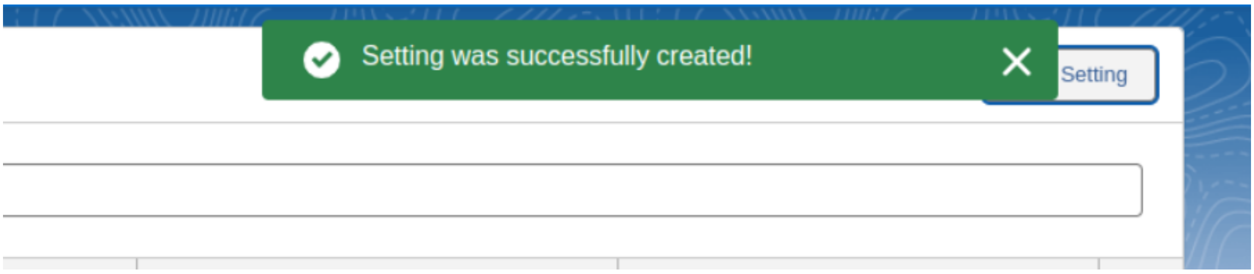
To use an existing MTM_Field_Set__c, select "Use Existing" and choose the desired MTM_Field_Set__c record from the "Field Set" input field:



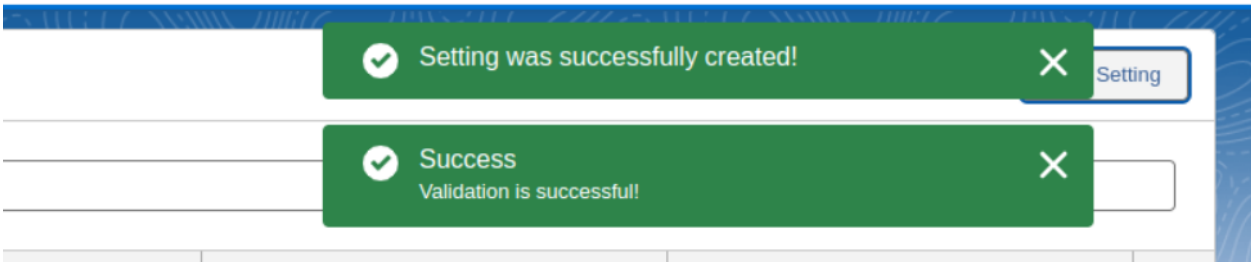
Step "Junction Fields": Creating MTM_Settings__c record

Once all fields are selected, click the "Save" button to create the configuration setting. If Manual validation is used, click the "Check Validity" button to ensure that the junction record can be created successfully.

If the record is created successfully, the following message will appear:



If Manual validation is being used, two messages will appear:



Update configuration records

In Edit mode, the following fields on MTM_Settings__c records can be modified:

- **Name:** this field is editable in the “Define Link Objects” step;
- **Fiel Set:** this field is editable in the "Junction Fields" step.

Delete configuration records

To maintain a clean data structure, remove any unused configuration entries.

The impact of Solution configuration on functionality

The key objects of the Solution are MTM_Settings__c and MTM_Field_Set__c. By creating configuration records for these objects, the Solution understands how to work with business data.

The following tables describe the purpose of each configuration object field.

MTM_Settings__c fields design

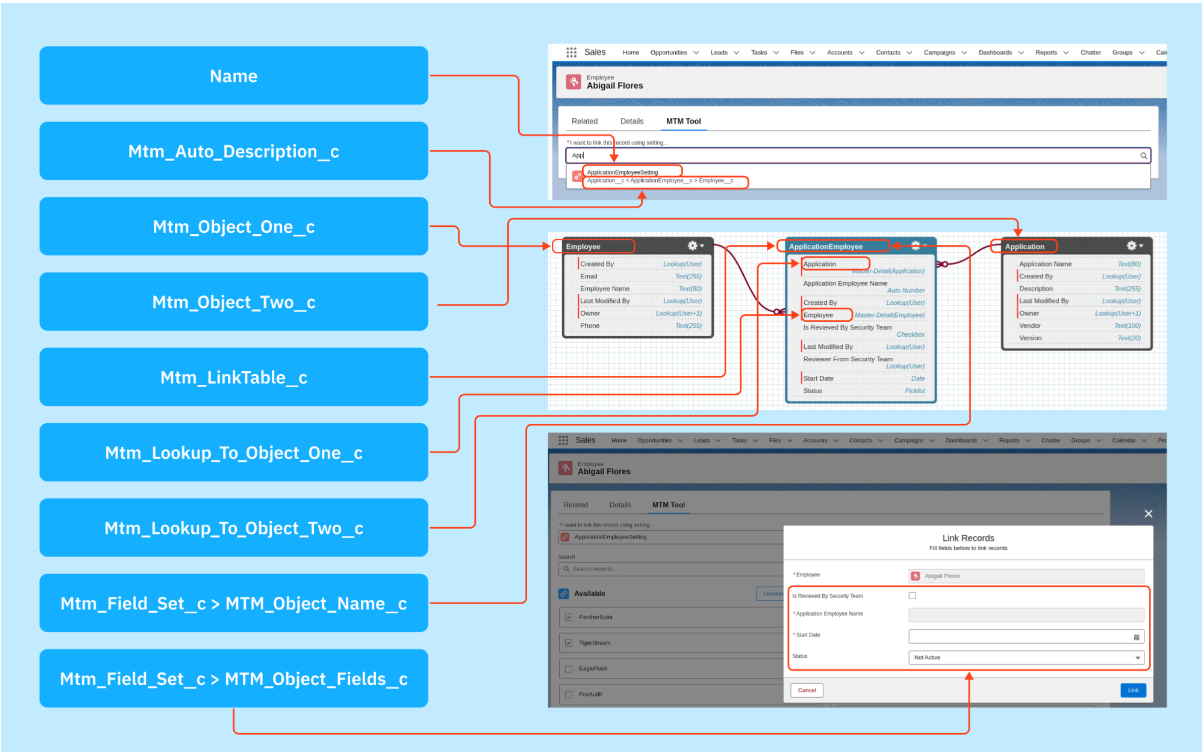
№	Field API Name	Field design
1	Name	A meaningful record name. It is recommended to use the names of the two objects being linked or the name of the junction table.
2	MTM_Auto_Description__c	Formula (text). Provides a description of the API names of the objects involved, assisting in the selection of a setting.
3	MTM_Object_One__c	TextArea. API Name of master object 1.
4	MTM_Object_Two__c	TextArea. API Name of master object 2.
5	MTM_LinkTable__c	TextArea. API Name of junction object .
6	MTM_Lookup_To_Object_One__c	TextArea. API Name of the field on the junction object that references master object 1.
7	MTM_Lookup_To_Object_Two__c	TextArea. API Name of the field on the junction object that references master object 2.
8	MTM_Field_Set__c	Lookup to the MTM_Field_Set__c record, which stores a list of fields separated by semicolons (“;”) in the junction table. These fields are displayed when linking.

MTM_Field_Set__c fields design

№	Field API Name	Field design
1	Name	Text. A meaningful record name. It is recommended to use the names of the two objects being linked or the name of the junction table.
2	MTM_Object_Name__c	Text. The name of the junction object. Corresponds to the value in the MTM_LinkTable__c field of the MTM_Settings__c record that references this object.
3	MTM_Object_Fields__c	LongTextArea (32768). A semicolon-separated list of fields in the junction table, shown when linking records.

Mapping configurations > functionalities

This diagram explains how the fields in the configuration objects impact the functionality and UI/UX.



Thus, to create configuration records that will allow the Solution to work with the records of the ApplicationEmployee junction object, it is needed to execute the following script:

Note*: you do not need to run the script if you are using the Wizard for settings creation. The script is provided solely to help you understand how the Wizard operates internally. If you create settings using the script, we cannot guarantee that the Solution will work correctly.*

```
mtm__MTM_Field_Set__c fieldSetRecord = new mtm__MTM_Field_Set__c(
   Name = 'ApplicationEmployee',
   mtm__MTM_Object_Name__c = 'ApplicationEmployee__c',
   mtm__MTM_Object_Fields__c =
'Application__c;Employee__c;IsRevievedBySecurityTeam__c;Name;StartDate__c;Status__c'

);
insert fieldSetRecord;

mtm__MTM_Settings__c settingRecord = new mtm__MTM_Settings__c(
   Name = 'ApplicationEmployeeSetting',
   mtm__MTM_Object_One__c = 'Application__c',
   mtm__MTM_Object_Two__c = 'Employee__c',
   mtm__MTM_LinkTable__c = 'ApplicationEmployee__c',
   mtm__MTM_Lookup_To_Object_One__c = 'Application__c',
   mtm__MTM_Lookup_To_Object_Two__c = 'Employee__c',
   mtm__MTM_Field_Set__c = fieldSetRecord.Id
);
insert settingRecord;
```

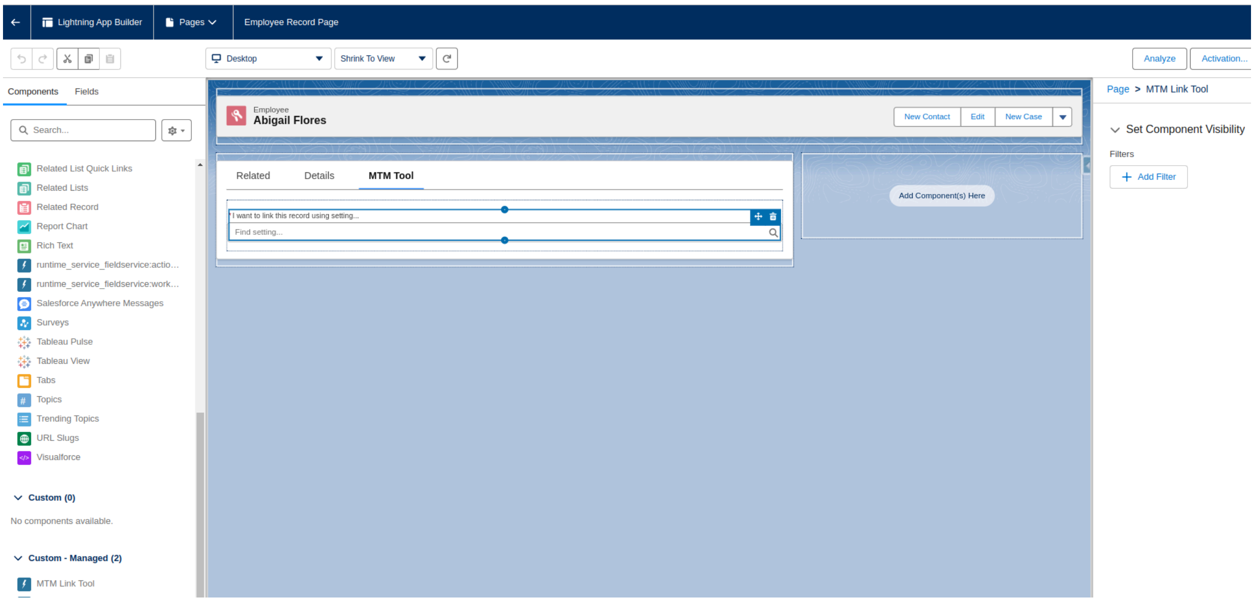
Solution Distribution

Add MTM Tool to the page

To use Solution on a Lightning record page:

1. Open the target object in the Object Manager.
2. Navigate to the "Lightning Record Pages" tab.
3. Select the required page (or create a new one).
4. On the left side of the builder, find the "MTM Link Tool" component and move it onto the page.
5. Click "Save".

In this example, the Solution is placed on a custom "MTM Tool" tab.

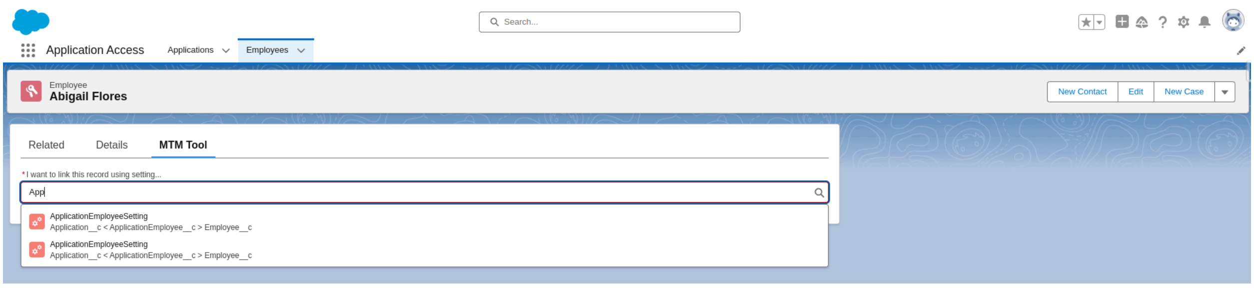


Granting access to Solution usage

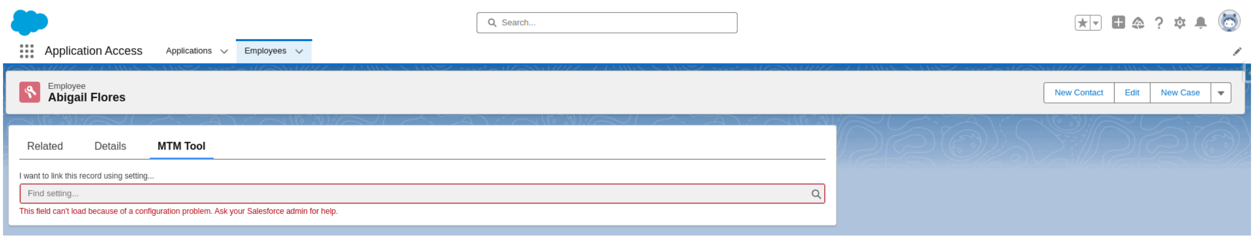
To enable regular users to use the Solution, grant “Read” access to the following objects (including fields on these objects):

- MTM_Settings__c;
- MTM_Field_Set__c.

Once everything is properly configured (Object and Field level access is granted), regular users will be able to see the following:

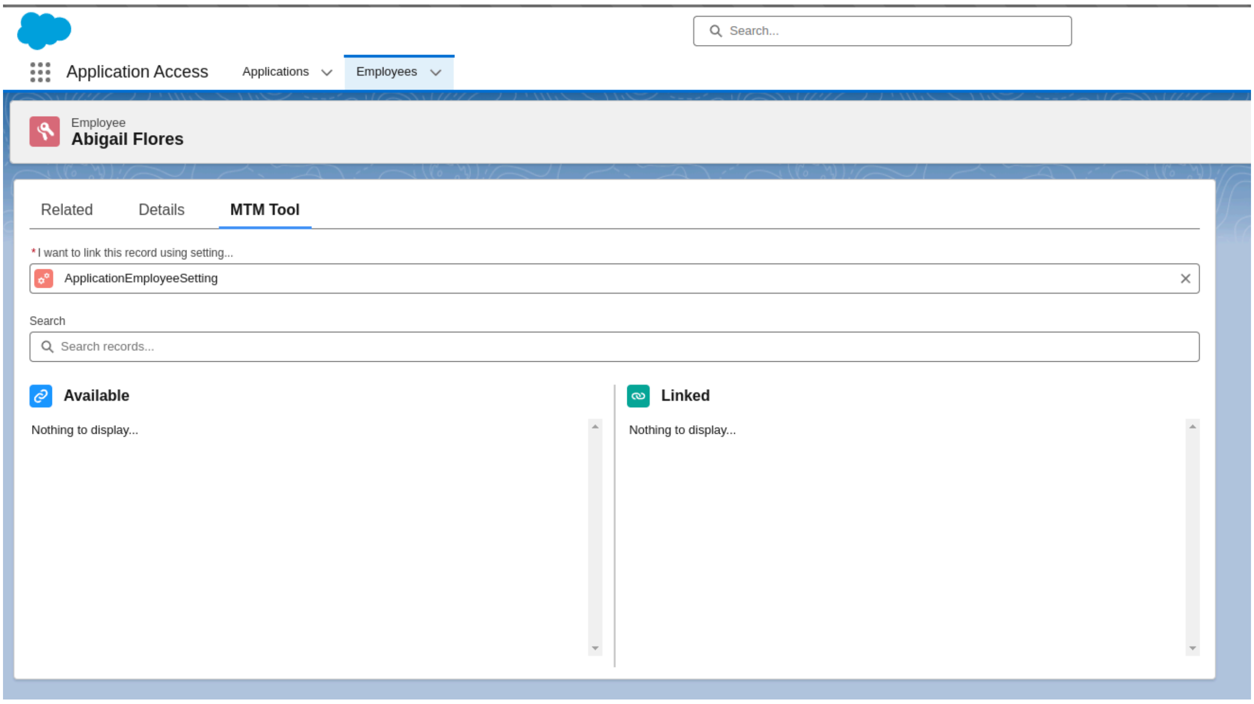


If the configuration is incorrect, users may encounter an error:



Record level security

Since the Solution respects sharing settings, a particular user may see the following screen:



This screen will appear if the user does not have access to any records due to record-level security restrictions.

Technical and functional limitations

- **Not supported in Salesforce Classic:** the Solution only works in the Lightning Experience.
- **Record limit:** the maximum number of records processed within a single action is limited to 1000.
- **Drag-and-drop not supported in mobile:** while the Solution works in the mobile version of Salesforce, drag-and-drop functionality is not available on mobile devices.
- **Unsupported field types:** certain field types, such as Address and Geolocation, are not supported by the Solution.