STIBO SYSTEMS
MASTER DATA MANAGEMENT

USER GUIDE

Data Preparation

Release 11.1-MP4 (March 15, 2023)

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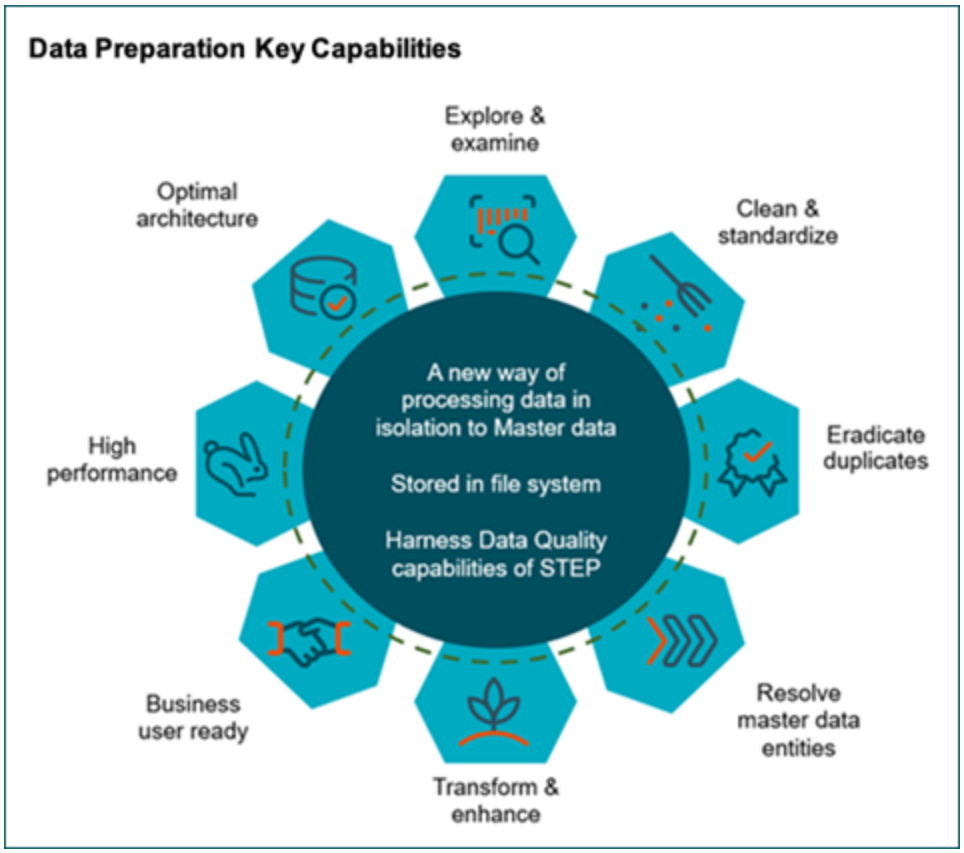
Data Preparation

Data preparation is a process of exploring, combining, cleansing, deduplicating, and transforming data prior to business utilization or consumption.

Stibo Systems Data Preparation provides the ability to preprocess data, in isolation, before it becomes master data, in support of several use cases, including:

- Indirect customer processing – Resolve indirect customer master data entities from transactional data provided by direct customers (distributors), enabling Consumer Packaged Goods (CPG) customers and manufacturers to gain insight into their customers' customers.
- Prospect list processing optimization – Allow marketers to qualify and prepare prospect lists, thus reducing marketing campaign costs and speeding time to market. For more information, refer to the **List Processing** topic.
- Mergers & Acquisition (M&A) support – Manage the deluge of data inherent with M&A activity.
- Optimal master data ingestion – Prepare master data prior to onboarding into STEP.



- **Explore and examine** – Process data to derive business insight and assess data quality by understanding what problems exist and what corrective actions need to be taken. Data profiling provides useful insights such

as which values are frequently used, which are missing, and which are rare, metric scores, patterns in data, and other points of interest. These data points help users better understand data and what needs to be done to prepare that data for ingestion.

- **Clean and standardize** – Correct data errors and validate data against authoritative sources (such as address verification) ensuring data is accurate, up to date, and fit for purpose.
- **Eradicate duplicates** – Remove duplicates from a single data set, across multiple data sets and compare against master data.
- **Resolve master data entities** – Reconcile and augment master data entities.
- **Transform and enhance** – Transform and enhance list(s) by filtering, transforming, and enriching lists.
- **Business user ready** – Enable business users to leverage STEP data quality capabilities without the involvement of IT.
- **High performance** – Use heavy parallel processing, lightweight to delete, simple to retry.
- **Optimal architecture** – Process data in isolation from master data. Because data is stored on the app server file system (not in memory), the architecture helps drive performance.

List Processing

The list processing component allows users to leverage STEP functionality to process lists of entities without having to add the entities as master data. List processing can help responsible parties, such as marketing personnel, to prepare lists of prospects by processing large rented customer lists and help CPG and manufacturing companies to process and analyze lists of indirect customers provided by their direct customers, such as distributors.

With the list processing component, users can:

- Import lists of records
- Assess quality of the list records using data profiling
- Remove records of poor data quality
- Bulk update records
- Deduplicate records
- Export processed lists

Important: Lists can contain anywhere from a few records with very few attributes up to hundreds of millions of records, each with a large number of attributes. Processing time depends on the size of a list. Lists are processed in Background Processes to manage time-consuming operations and use parallel processing. Users can monitor the progress of a background process and/or perform other duties, while the list processing executes.

Configurations and Use

The following setup is required:

- Configuring List Processing in Workbench
- Configuring List Processing in Web UI

Working with list processing includes information defined in the following topics:

- Creating Lists
- Processing Lists
- Exporting a Processed List

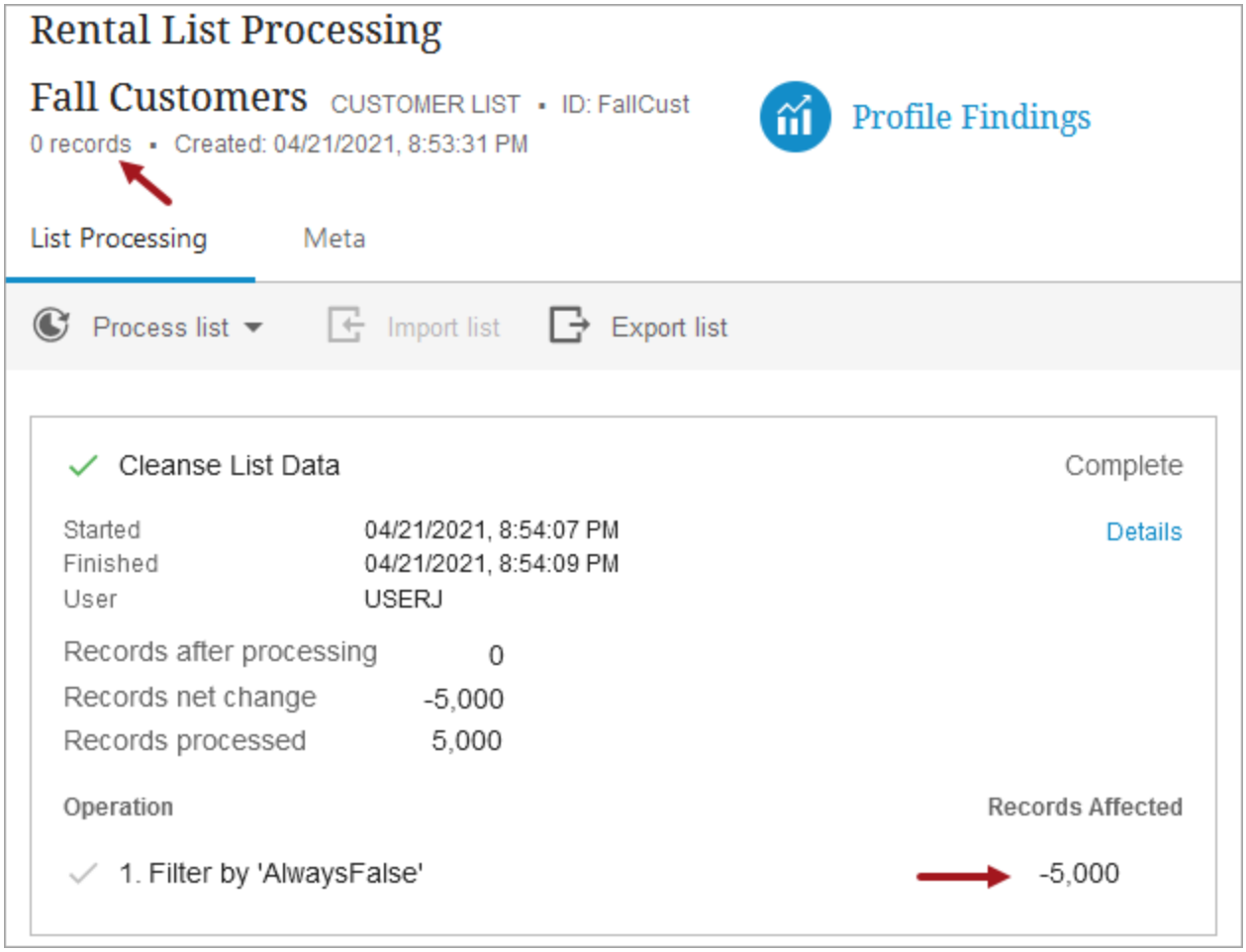
Considerations

Be aware of the following information before processing lists:

- List processing cannot be reverted
- Background process logs include statistics, warnings, and errors

List Processing Cannot Be Reverted

Users should use caution when creating the list process configurations. In the following example, a business rule that always returns a value of false, purges the entire dataset. Since the business condition was valid on the record object types, the process proceeded without errors.

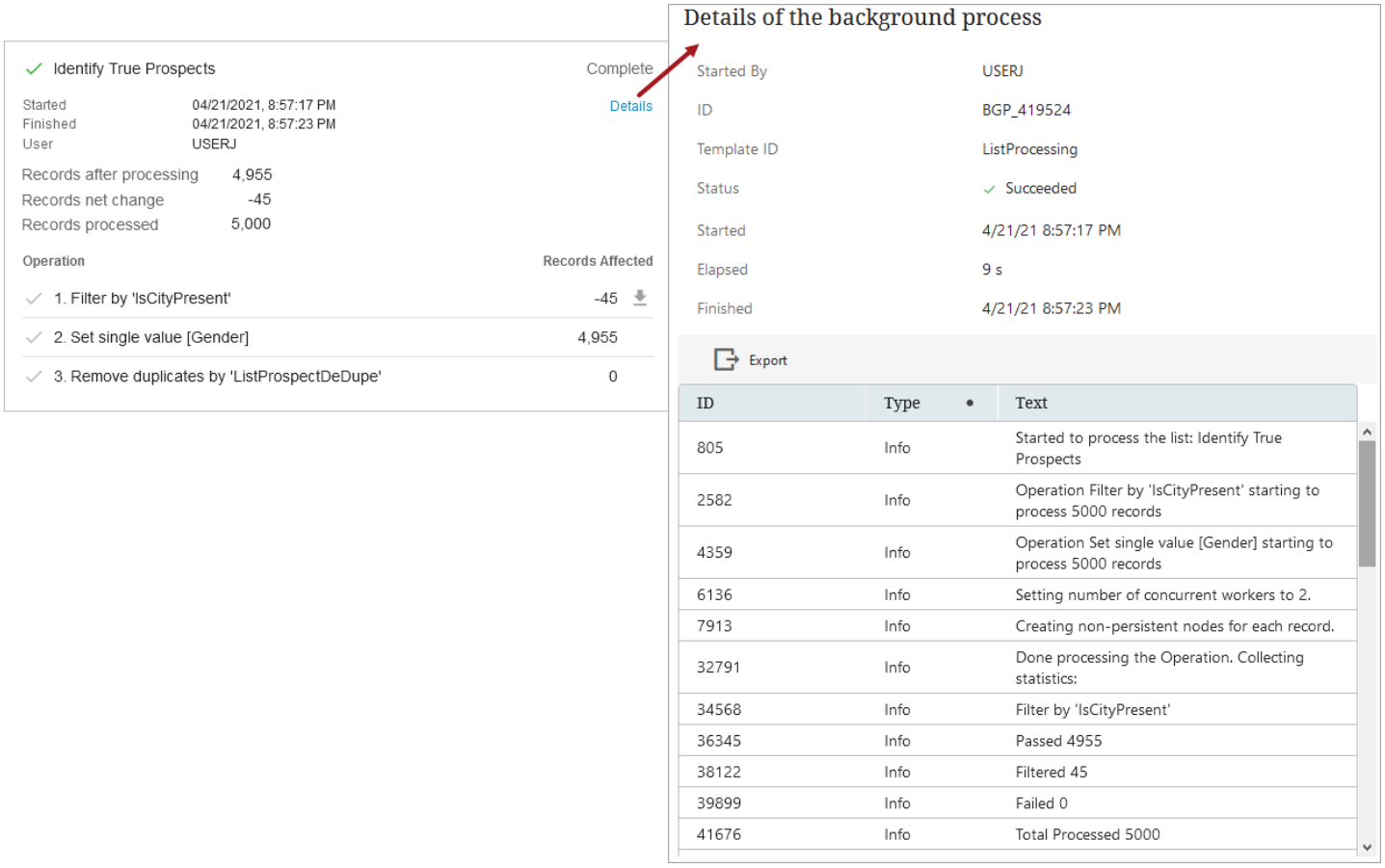


Important: While there is no method to revert a list processing operation after it has been completed, you can upload the original file to a new list entity and apply all processing operations again.

Background Process Logs Include Statistics, Warnings, and Errors

When a list process operation fails or completes with errors, review the BGP logs by clicking the Details link on the process. Users with a successful list process may also view useful information in the logs. For more information, refer to the **Background Process Node Details Screen** in **Web User Interfaces**

documentation.

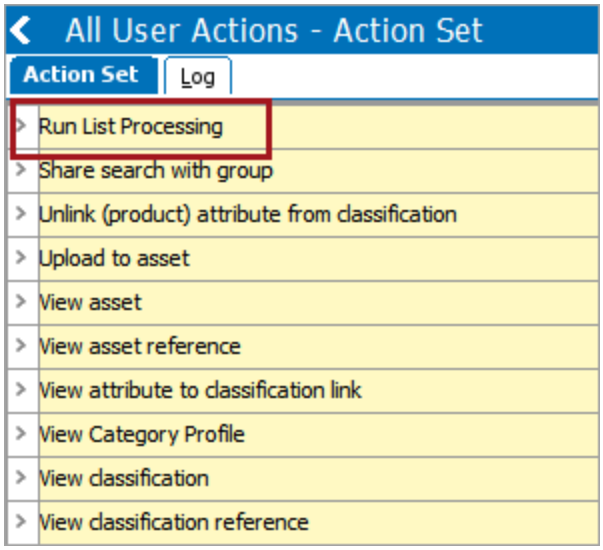


Configuring List Processing in Workbench

Using List Processing includes the following prerequisites and configuration steps.

Prerequisites

1. Activate the list processing commercial license on your system. Contact your Stibo Systems account manager or partner manager for assistance.
2. Configure the 'Run List Processing' user action for the group of users who will run List Processing. For information on adding user actions, refer to the **Maintaining Action** topic in the **System Setup** documentation.



3. Define import and export configurations to handle the inbound and outbound list files. For more information, refer to the **Maintaining a Saved Import Configuration** topic and the **Maintaining a Saved Export Configuration** topic in the **Data Exchange** documentation.

Configuration

To use the list processing functionality users must provide the workbench configuration defined in the following topics:

- **List Processing Lists and Records** - create the list processing object types and default data profile
- **List Processing Component Model** - define the object types allowed for processing
- **List Processing Configuration** - define which list operations to use in a reusable list processing

configuration

- **List Processing Operations** - includes filters, bulk updates, deduplication and external processing

List Processing Lists and Records

Setting up an entity object type hierarchy structure for list processing includes:

- A **list** entity object type. There can be multiple list types defined in the system, each with their own unique set of attributes. Lists must be organized in the primary hierarchy, as with any other entity.
- A **record** child entity object type under the list object type. There can be records of multiple object types in a list. A record may have references to master data entities in the system. There cannot be references from master data entities to a record in a list. A record in a list must be globally revised.

Any ID pattern provided on the object type of a record in a list is ignored. A universally unique identifier (UUID) is assigned to each record, as it is imported into a list. The record's UUID remains stable throughout the lifetime of the list. The assigned record UUID can be exported.

Important: If an object type of a record in a list is deleted, the following processing or export of the list will fail. If the object type is created again, it will again be possible to process and export the list.

If attributes, reference types, or data container types of values of records in lists are deleted, the processing of lists with such data will still be possible, but that data will be removed from the records the first time those records are updated.

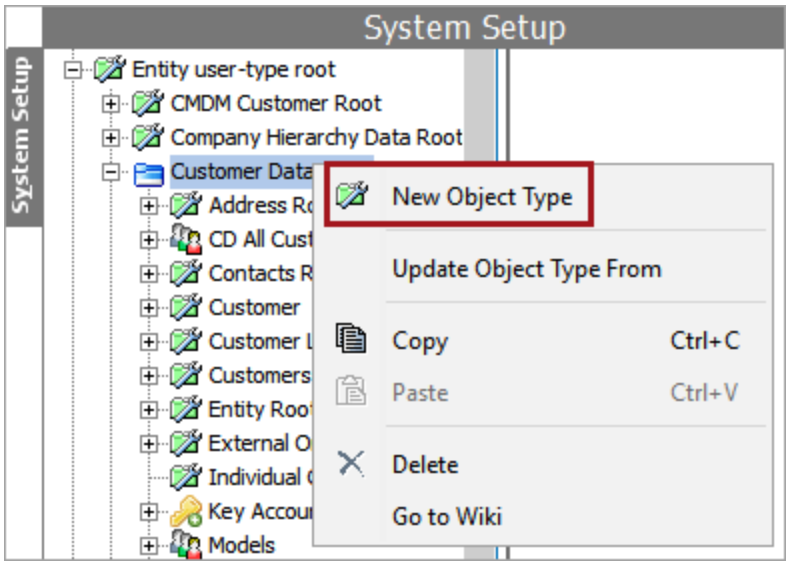
Should a given attribute, reference type, or data container type be deleted and recreated while there are records in lists with the same values, those values will remain.

For more information, refer to the **Object Types and Structures** topic in the **System Setup** documentation.

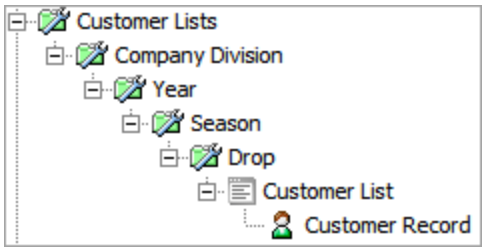
Configure List Object Types and Default Data Profile

The following set up provides the required objects for the Component Model:

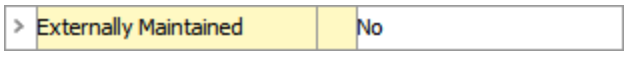
1. On the System Setup tab, under 'Object Types & Structures,' right-click on the desired parent node and select 'New Object Type.' In this guide, the parent node 'Entity user-type root' holds the 'Customer Data Root' node. This second parent will hold the new object type.



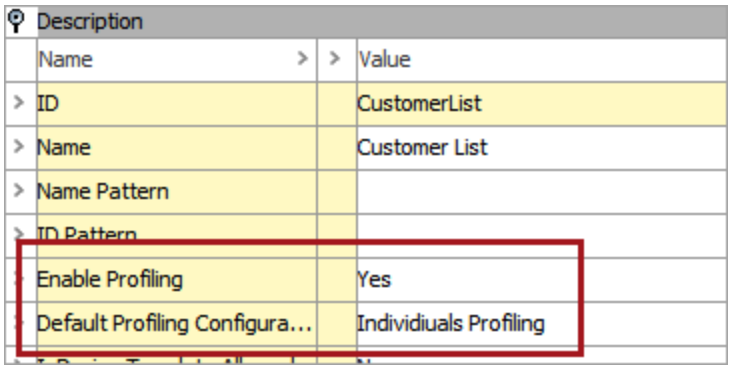
2. In the Create Object Type dialog box, enter a value for the ID and Name text fields. In the screenshot below, the structure shown is used for a business hierarchy. Customer Lists, Company Division, Year, Season, Drop, and Customer List were all created as ways to structure a list processing instance. The Customer Record object was made valid for the Customer List object type.



3. Ensure attributes on records in a list are set as 'No' for the 'Externally Maintained' parameter. List processing cannot process externally maintained attributes on records in the list.



4. Define a default profiling configuration on the newly created object type. For more information, refer to the **Data Profiling** documentation.



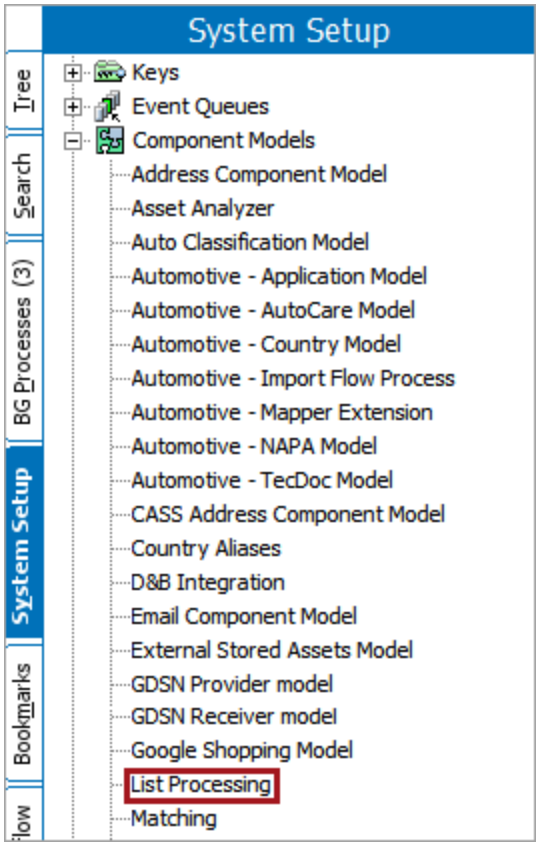
5. Configure the component model as defined in the **List Processing Component Model** topic to select which of the created object types can hold lists.

List Processing Component Model

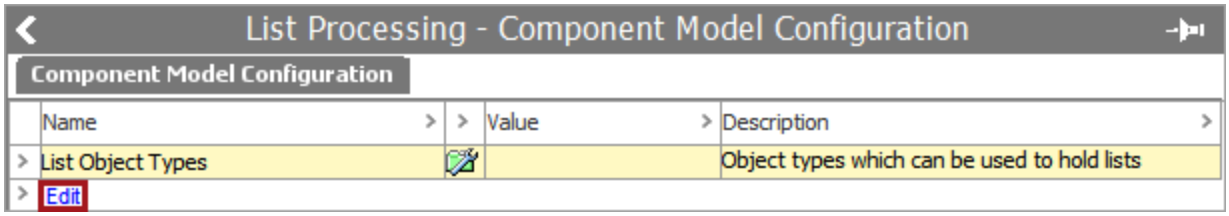
The List Processing component model allows users to set the object type(s) that may hold lists. Users must complete this one-time setup for list processing to function correctly.

Configure List Processing Component Model

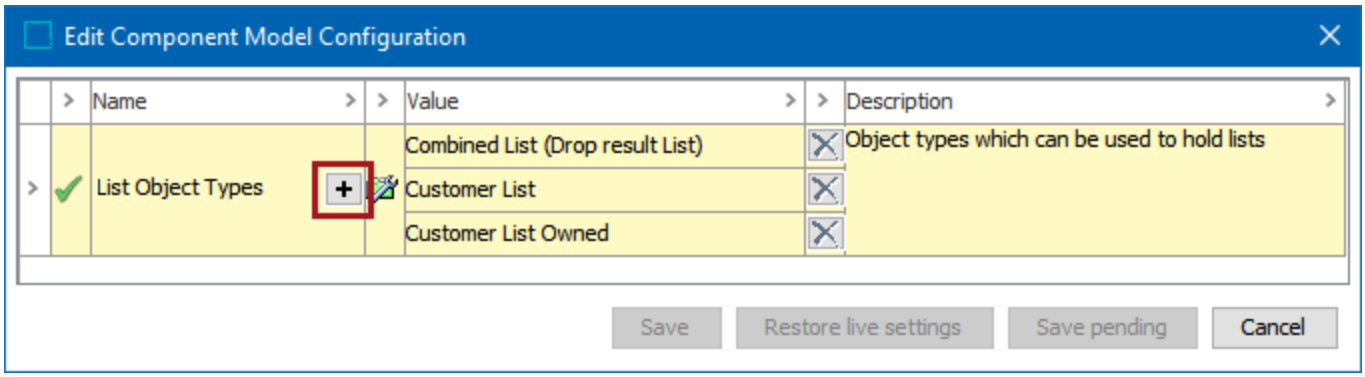
1. From the System Setup tab, select the 'Component Models' node, then select the 'List Processing' option.



2. Click the 'Edit' button below the List Object Types entry on the component model to display the 'Edit Component Model Configuration' dialog.



3. On the 'Edit Component Model Configuration' dialog, click the plus button (+) to choose the object type(s) that can hold a list. In this example, the list object types are shown in the 'Value' column since they are valid list processing object types.

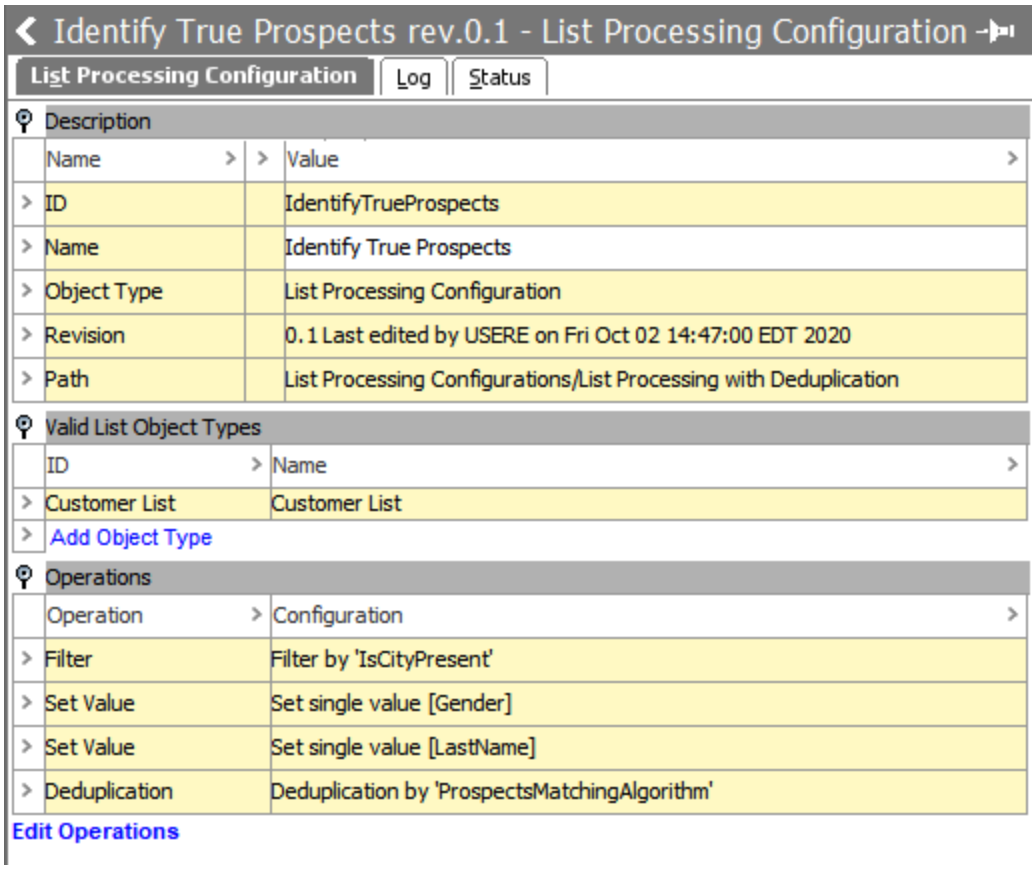


4. Click the **Save** button to save the selected object type(s) and close the dialog.
5. Configure a List Processing Configuration object to work with the component model as defined in the **List Processing Configuration** topic.

List Processing Configuration

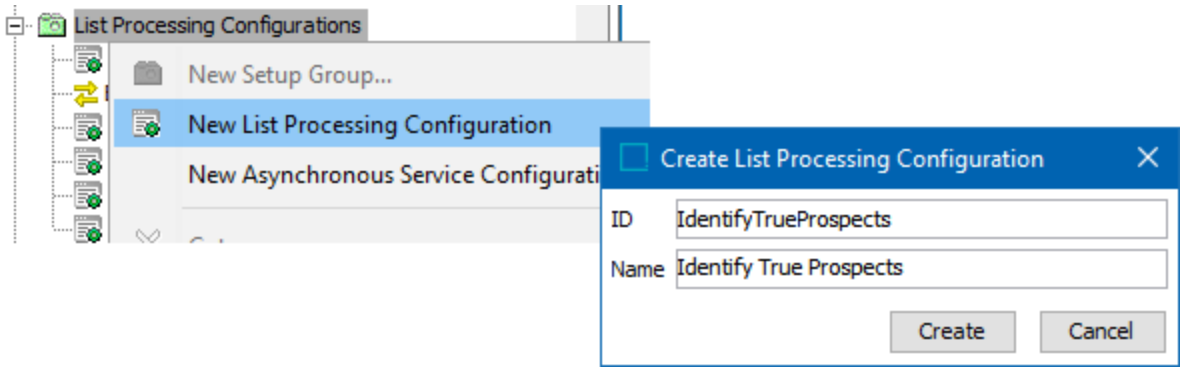
Processing of lists is based on a List Processing Configuration which defines a sequence of operations that can be applied to a specific list. Each operation is applied to records in the list using the order defined in the configuration. When an operation is applied to a record, the record is an entity. The parent of a record in a list is always the list entity to which it belongs.

The following completed and functional List Processing Configuration (also shown fully in the **Processing Lists** topic) filters out records with no city value present, sets values for 'Gender,' then sets a value for 'Last Name,' and using the 'ProspectsMatchingAlgorithm,' deduplicates the list of redundant records.



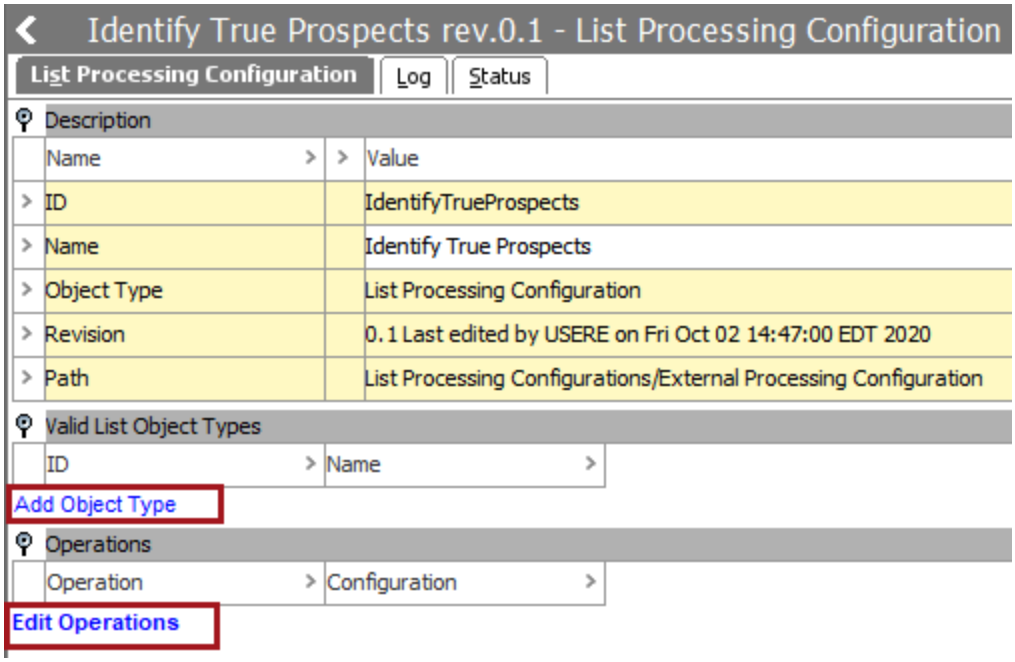
Create a List Processing Configuration

1. From the System Setup tab, create a valid parent type for the List Processing as set during the object type creation.
2. Right-click on the List Processing parent node and select 'New List Processing Configuration' to open the 'Create List Processing Configuration' dialog.



3. Provide an **ID** and **Name** and click the **Create** button.
4. Open the Valid List Object Types flipper, click the **Add Object Type** link and choose the object type(s) set in the list component model. Refer to the **List Processing Component Model** topic.

> **Note:** This list processor configuration can only be executed on selected list object types. Without an object type value, the List Processing Configuration is not a selectable option in the Web UI 'Process list' dropdown.



5. In the Operations flipper, click the **Edit Operations** link and select the relevant operations.

   Refer to the **List Processing Operations** topic for explanations of the available operations.

Important: The order of operations in this configuration will be the order that they are performed on the list. This consideration is important because if values are changed before unwanted records are filtered, it will cause a longer processing time with no added benefit.

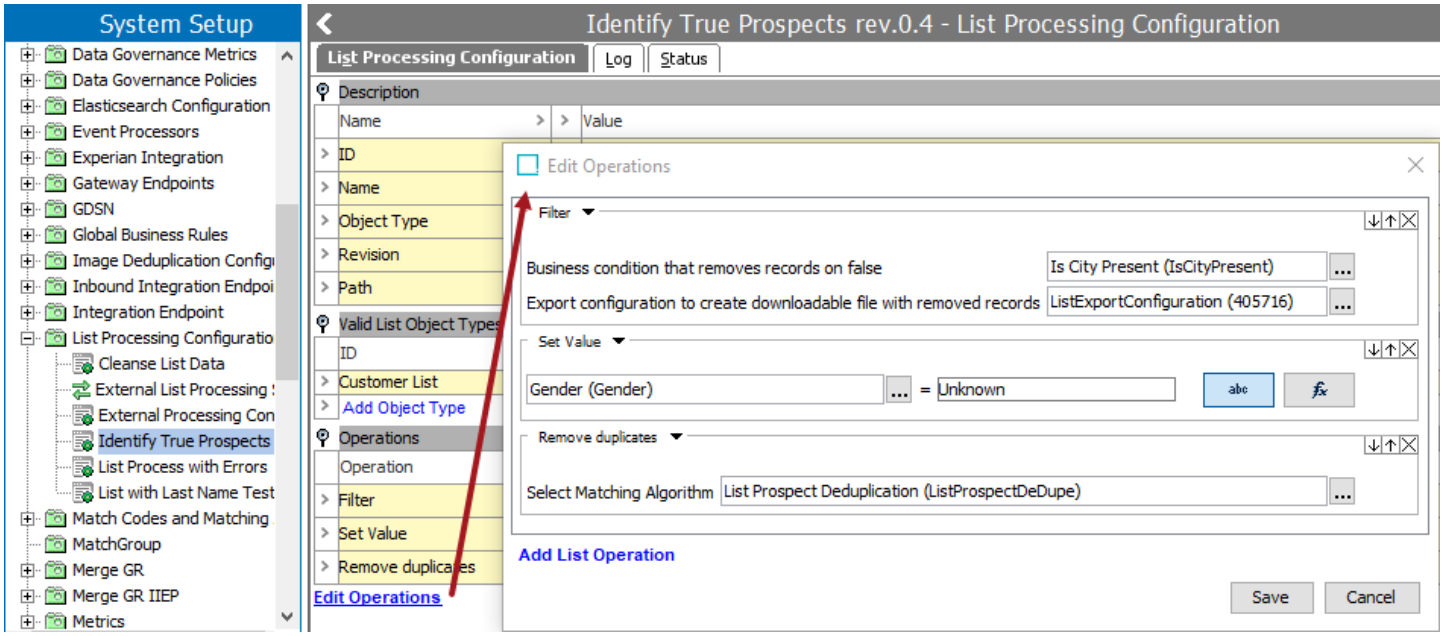
6. Continue the required configuration as defined in the **Configuring List Processing in Web UI** topic.

List Processing Operations

A **List Processing Configuration** includes one or more operations for processing a list.

The majority of the list processing operation types use existing bulk update operations supported by STEP, while the Remove Duplicates, External Processing, and Filter operation types are designed specifically for list processing. There is no limit to the number of operations that can be executed per list.

Important: While list operations are executed in parallel when possible, they are still applied to each record in the list in the order configured in the Edit Operations dialog, starting from the top.



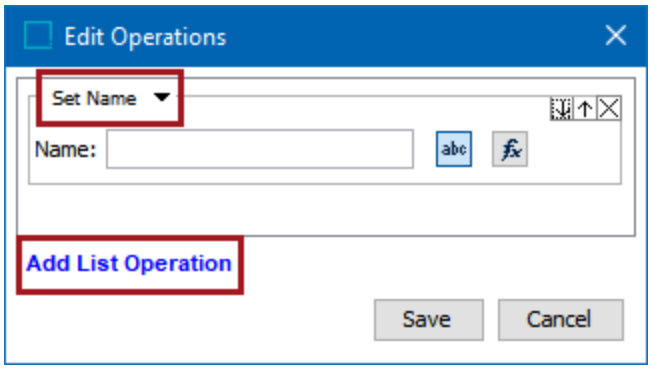
To add an operation on a List Processing Configuration:

1. On the Operations flipper click the 'Edit Operations' link.
2. On the Edit Operations dialog click the 'Add List Operation' link.

   Available operations are defined in the following topics:

   - **List Processing Bulk Update Operations**
   - **List Processing External Processing Operation**
   - **List Processing Filter Operation**

- **Find Similar Master Data**
- **List Processing Remove Duplicates Operation**
- **List Processing Import from Other List Operation**



3. Select the desired operation (each is defined below) from the dropdown menu and complete the necessary parameters.
   - Click the **Add List Operation** link again if more operations are required.
   - Click the up or down arrow buttons (↓↑) to reorder the operations.
   - Click the X button (☒) to remove an operation.
4. Click the **Save** button or **Cancel** button to return to the List Processing Configuration tab.
5. Continue the required configuration as defined in **Configuring List Processing in Web UI** topic.

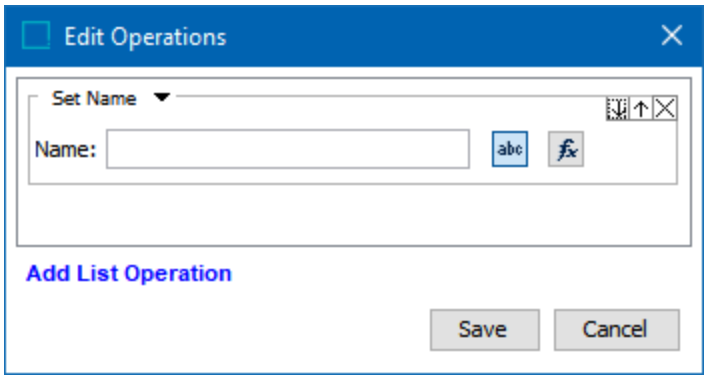
List Processing Bulk Update Operations

The bulk update operations listed below are available in List Processing. Details are included in the Bulk Updates documentation which can be accessed as shown below.

After adding all necessary operations, continue with Web UI setup as defined in the **Configuring List Processing in Web UI** topic.

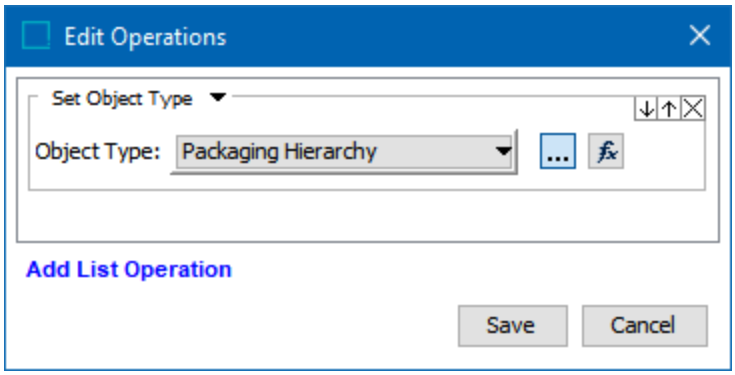
Set Name

The 'Set Name' operation sets the name of records in the list. For more information, refer to the **Set Name Operation** topic in the **Bulk Updates** documentation.



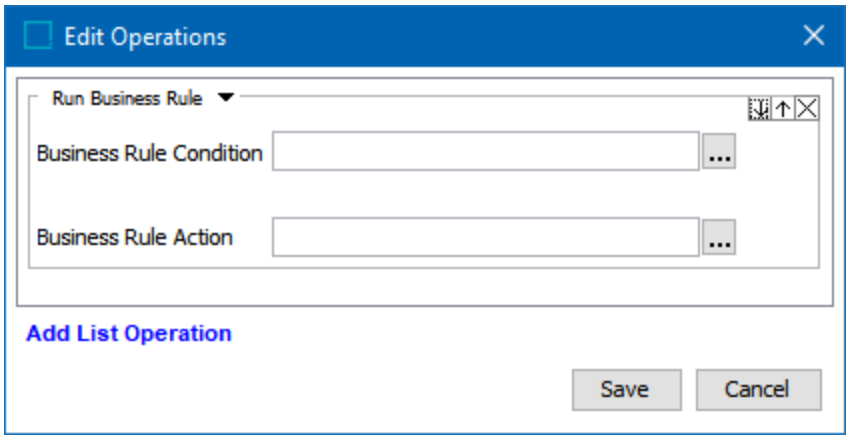
Set Object Type

The 'Set Object Type' operation changes the object type of the records in the list. For more information, refer to the **Set Object Type Operation** topic in the **Bulk Updates** documentation.



Run Business Rule

The 'Run Business Rule' operation allows users to specify an optional condition and/or a mandatory action that will be evaluates based on the list records with the limitations noted below. For more information, refer to the **Run Business Rule Operation** topic in the **Bulk Updates** documentation.



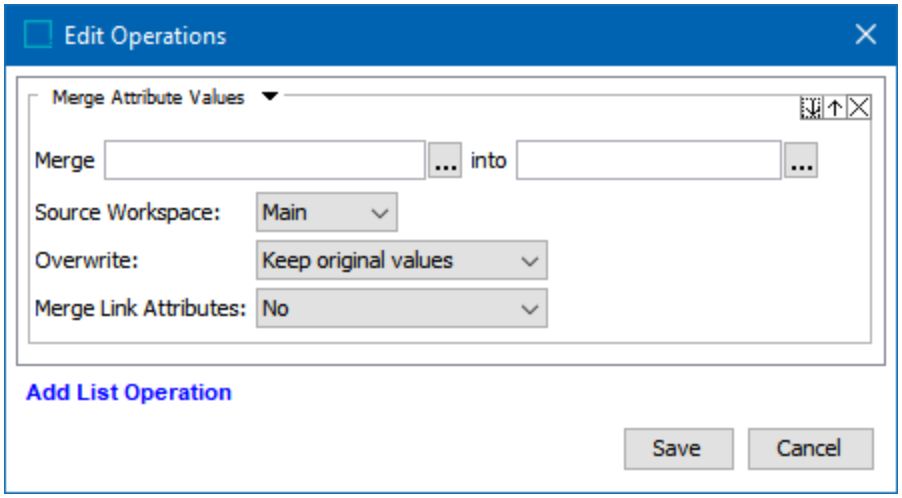
The following business actions are supported:

Parent Menu Name	Operation	Supported	Comments
Attribute Values	Merge Attribute Values	Partially	Attribute links and workspaces are not supported
Data Quality	Standardize Address	Yes	
References and Links	Add Reference	Partially	Only with entity references
References and Links	Automatic Classification	Partially	Only with entity references
References and Links	Remove Reference	Yes	
Value Generator	Release a Value	Yes	
Value Generator	Assign a Value	Yes	
	Execute JavaScript	Yes	
	Reference another Business Action	Yes	
	Send Email	Partially	Not supported with workflows

Parent Menu Name	Operation	Supported	Comments
	Set Attribute	Yes	
	Set Name	Yes	
	Set Object Type	Yes	

Attribute values > Merge Attribute Values

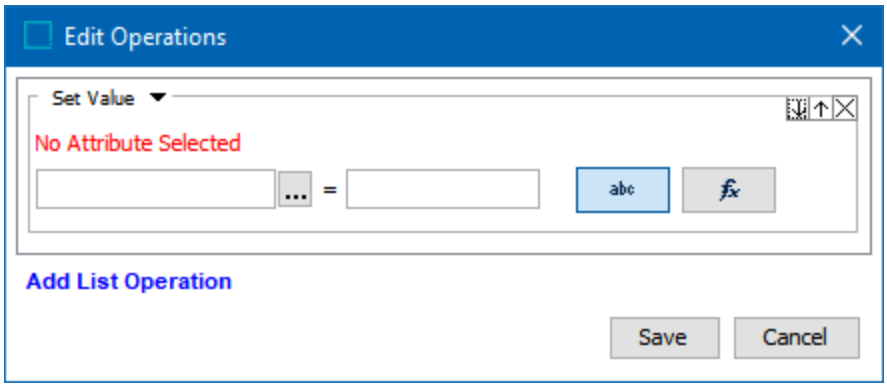
The 'Merge Attribute Values' operation combines the values of a set attribute value into a specified destination attribute. For more information, refer to the **Attribute Values: Merge Attribute Values Operation** topic in the **Bulk Updates** documentation.



Important: Since workspace setting and linking attributes only make sense for master data entities in the STEP database, these settings will not affect list records as these records are stored in isolation.

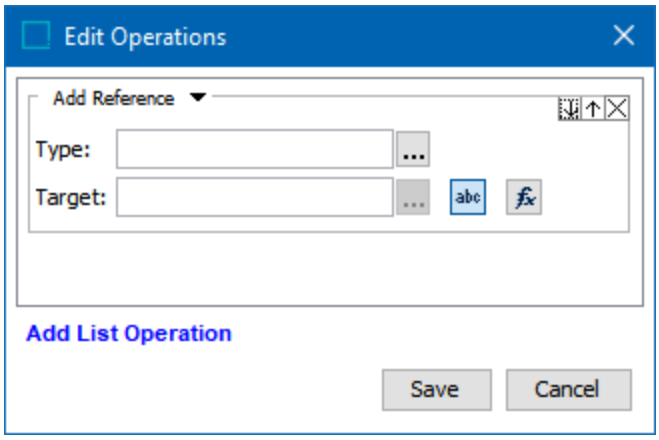
Attribute values > Set Value

The 'Set Value' operation allows users to first specify a system attribute and then apply a value to all records with that attribute in the list. For more information, refer to the **Attribute Values: Set Value Operation** topic in the **Bulk Updates** documentation.



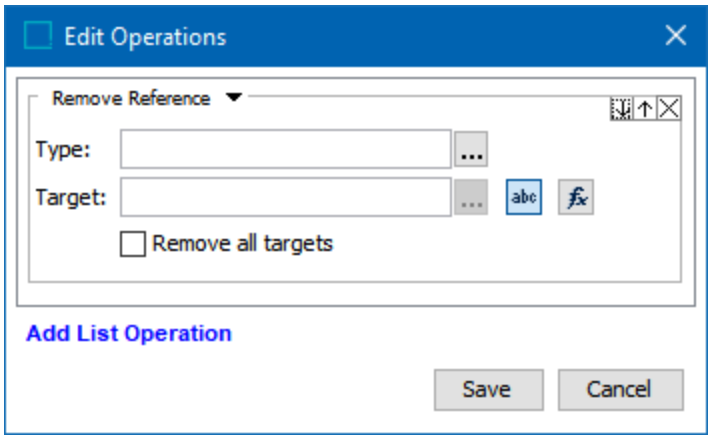
References and Links > Add Reference

The 'Add Reference' operation creates a reference between records when using a list. For more information, refer to the **References and Links: Add Reference or Add Referenced By Operations** topic in the **Bulk Updates** documentation.



References and Links > Remove Reference

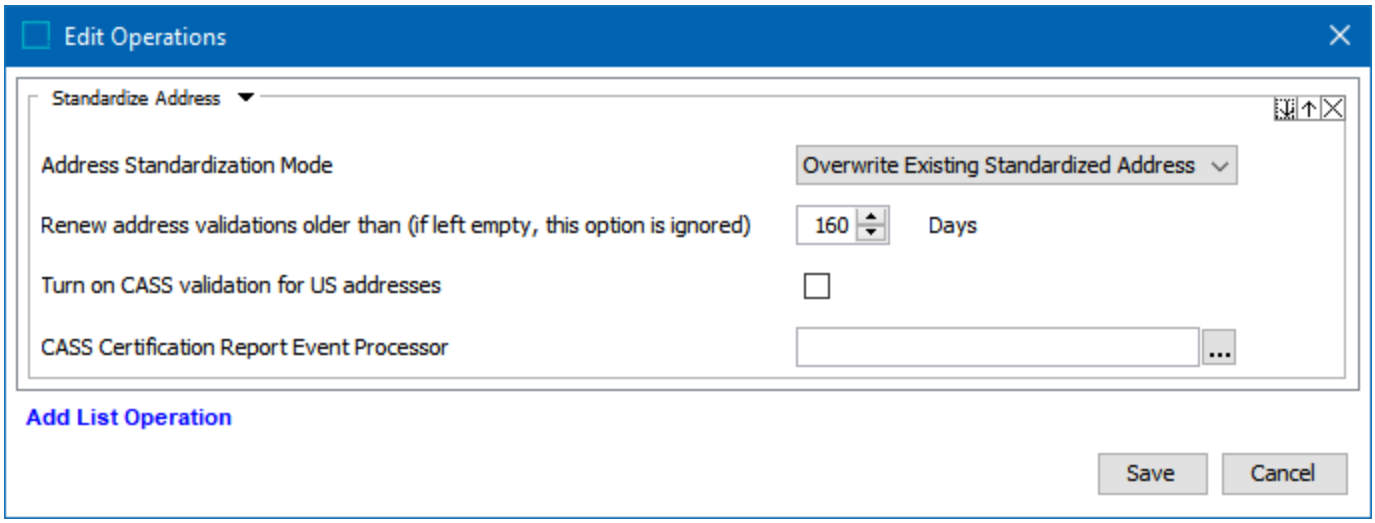
As an inverse of the 'Add Reference' operation, the 'Remove Reference' operation removes pre-populated references on records in a list. For more information, refer to the **References and Links: Remove Reference Operation** topic in the **Bulk Updates** documentation.



Data Quality > Standardize Address

The 'Standardize Address' operation ensures that the records in the list have the expected information and format of addresses. For more information, refer to the **Data Quality Standardize Address Operation** topic in the **Bulk Updates** documentation.

Important: A CASS Certification Report Event Processor must not be configured.



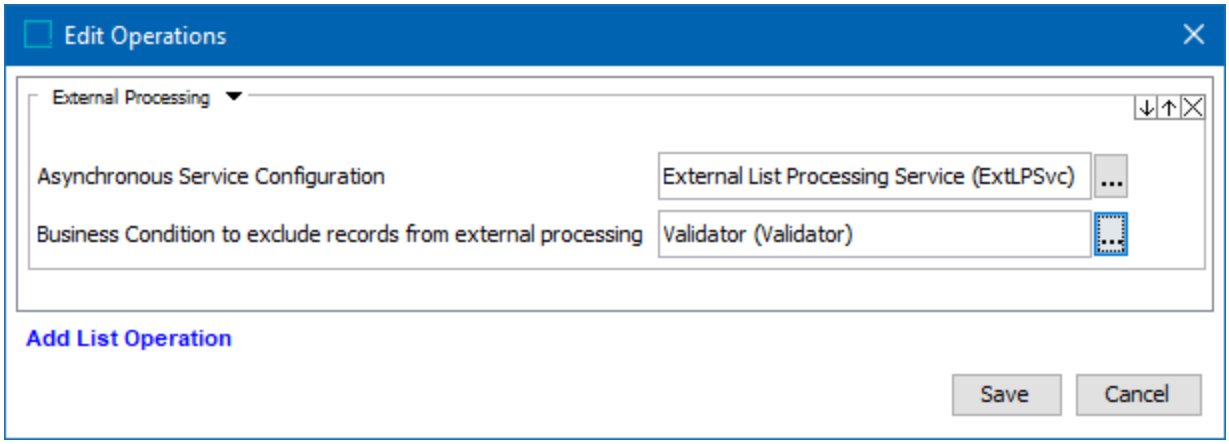
List Processing External Processing Operation

The External Processing operation is designed specifically for list processing.

After importing a list (defined in the **Creating Lists** topic), users can process the list externally via an asynchronous service configuration (ASC) and a List Processing Configuration (defined in the **Configuring List Processing in Workbench** topic).

External Processing

External processing allows list files to be exchanged with external services or applications using hotfolders. Selected records of a list are exported to an outbound hotfolder, the external service retrieves the list, processes and updates the record data, and returns the list in an inbound hotfolder. When new returned lists are detected, the record data will be imported and updated in STEP. Exported files are compressed by default. For returned files, external processing supports both compressed and uncompressed.



- **Asynchronous Service Configuration** - The Asynchronous Service Configuration (ASC) manages the external processing integration to a specific external service. The ASC defines how lists are exported, imported, updated, and which hotfolders are used to exchange lists with the external service. For details, refer to the **Create Asynchronous Service Configuration** topic.

Important: To correlate exported records with returned records, the record ID attribute must be included in the exported records as well as in the records returned by the external service.

- Ensure the record <ID> is included in the export configuration as well as is mapped to the record <ID> attribute again in the import configuration.
- Records IDs must NOT be modified by the external service, otherwise the process of updating records internally will fail.

- **Business Condition to exclude records from external processing** - An optional business condition can define records that should be excluded from the external processing.

Important: The generated export file name starts with a 'message ID' in the form of the BGP number and a hash sign (#). For example, the message ID 'BGP_416690#' is the first part of the export file named: BGP_416690#csv.csv. Files received from the external service must also include this same message ID as the first characters of the return file name.

Create an Asynchronous Service Configuration for List Processing

An Asynchronous Service Configuration (ASC) manages integration to a specific external service. The ASC for list processing defines how lists are exported, imported, updated, and which hotfolders are used to exchange lists with the external service.

Prerequisites

1. Determine the STEP application server location for your system hotfolders as defined by the `Install.HotfolderRoot` property. For more information, refer to the **Configuration** topic in the **Administration Portal** documentation.

   Within the identified hotfolder directory on the STEP application server, manually create the following folders:

   - **Hotfolder** - the parent folder that houses both the In and the Out folders. Use a descriptive name, like the name of the external processing service or provider.
   - **Out folder** - the folder to hold files pending external processing. The external processing operation places export files in this folder and the external source retrieves files from this folder.
   - **In folder** - the folder to hold completed externally processed files. The external service places files in this folder and STEP retrieves files from this folder to resume processing by importing and updating record data.

   Note: Inbound hotfolders must be unique for each ASC. An ASC Poller BGP monitors the In folder of it's own ASC only and cannot resolve return files across multiple ASCs.

2. In workbench, identify or create the following elements:

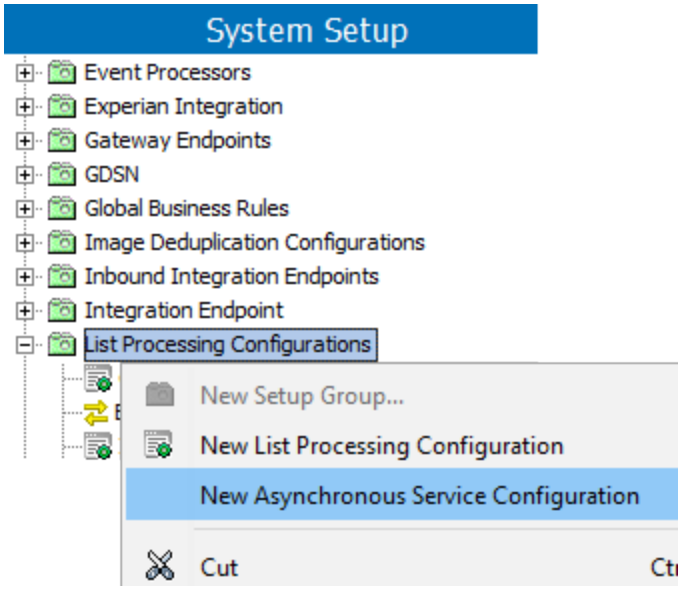
   - Verify the required one-time setup is complete for the ASC setup group root node and ASC object type. For details, refer to the **Create the Asynchronous Services Object Type** topic.
   - A list processing export configuration that includes the record <ID> attribute mapped to a record ID field in the export file.
   - A list processing import configuration that includes the record <ID> field of the return file mapped to the internal record <ID> attribute.

- A business action to update internal records using information from the corresponding returned and processed records. The JavaScript should include the **Current Object** bind and the **External Processing Response Source Object** bind, as defined in the **JavaScript Binds** topic of the **Resource Materials** section of online help.

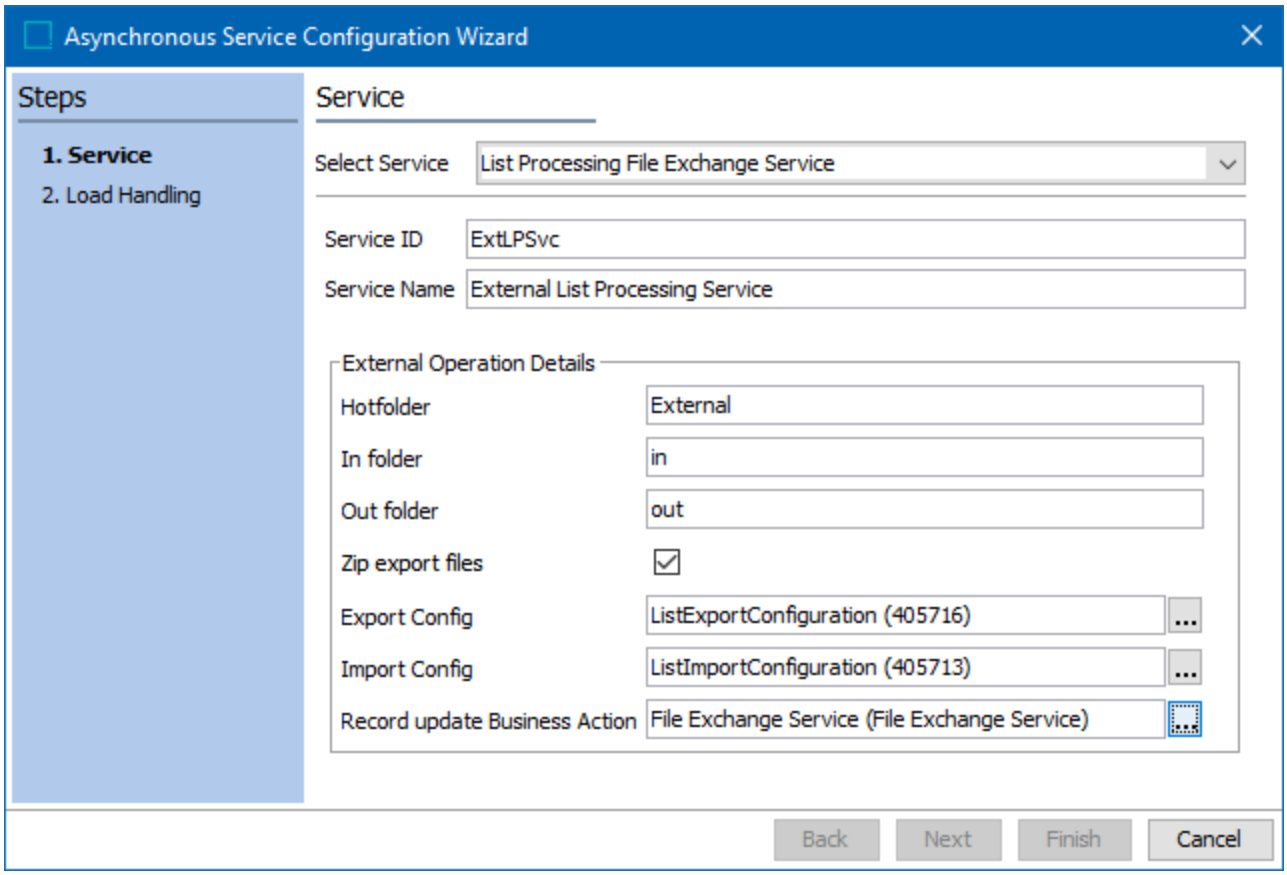
Configuration

The Asynchronous Service Configuration (ASC) stores details about how to integrate with a specific external service.

1. In workbench on System Setup, open a root node valid for ASC (such as the List Processing node or the Asynchronous Services node), right-click and choose **New Asynchronous Service Configuration**. In this example, the ASC is added to the 'List Processing Configurations' root node but your name can be different.



2. On the Asynchronous Service Configuration Wizard dialog **Service** step, complete the following parameters:



For information on a parameter, hover over the parameter field to display help text.

- For **Select Service**, choose List Processing File Exchange Service from the dropdown.
- For **Service ID** and **Name**, add text to identify the specific external service for integration with the List Processing Configuration (created above).
- For **Hotfolder**, add the path to the hotfolder used for this external service. The path must be relative to STEP's main hotfolder as configured in the sharedconfig.properties file. For details, refer to the **Prerequisites** section above.
- For **In folder**, add the inbound subfolder used by the external service to return files with processed records.
- For **Out folder**, add the outbound subfolder to place the export files containing the records to be processed externally.
- For **Zip export files**, check to use file compression on files being delivered to the external service.
- For **Export Config**, click the ellipsis button (...) and select the configuration required to generate the file sent to the external processing service. Alternatively, begin typing the ID or name of the configuration in the field and select from the available options displayed.

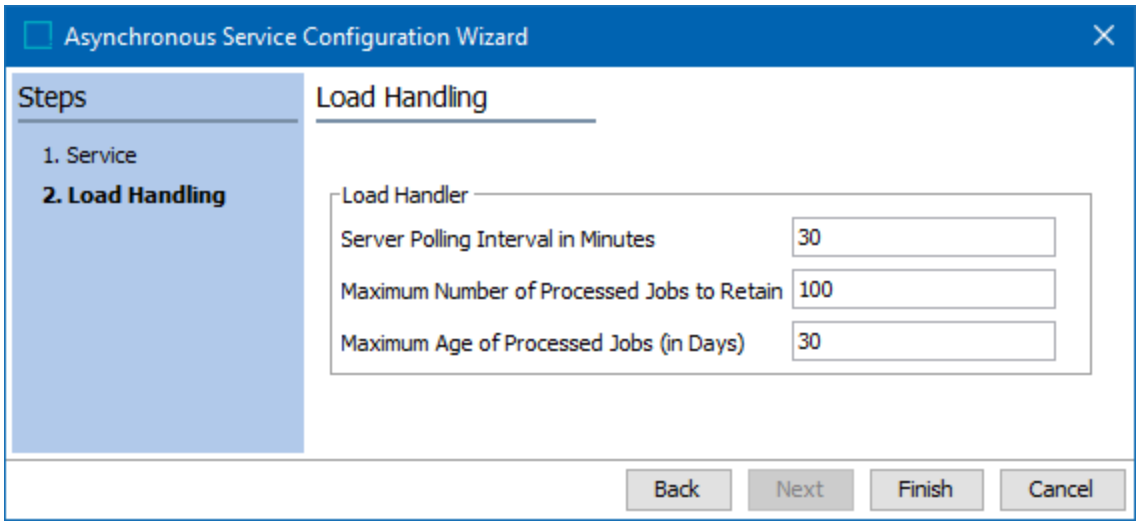
> **Note:** When completing the Map Data step for the configuration, ensure the record <ID> attribute is mapped to a record <ID> field in the export file.

- For **Import Config**, click the ellipsis button (...) and select the configuration required to process the file returned from the external processing service. Alternatively, begin typing the ID or name of the configuration in the field and select from the available options displayed.

> **Note:** When completing the Map Data step for the configuration, ensure the record <ID> field of return file is mapped to the internal record <ID> attribute.

- For **Record update Business Action**, click the ellipsis button (...) and select the business action used to update internal records using information from the corresponding returned and processed records. Internal records must be manipulated with a JavaScript business action using the 'Current Object' bind. The associated returned record is manipulated using the 'External Processing Response Source Object' bind. These binds are defined in the **JavaScript Binds** topic of the **Resource Materials** documentation in online help.
- Click the **Next** button.

3. On the **Load Handling** step, complete the following parameters:



For information on a parameter, hover over the parameter field to display help text.

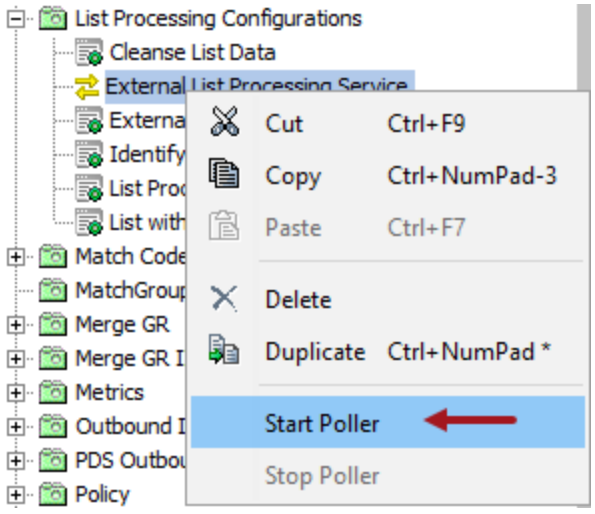
- For **Server Polling Interval in Minutes**, update from the default of 30 minutes if needed. This is the time between attempts to poll the 'In folder' for an external file that has been processed. The minimum is 1 minute.
- For **Maximum Number of Processed Jobs to Retain**, update from the default of 100 if needed. This is the number of BGPs to be retained. When the maximum is reached, the oldest job is deleted automatically.

- For **Maximum Age of Processed Jobs (in Days)**, update from the default of 30 if needed. A BGP is automatically deleted when its age reaches the maximum number of days.

> **Note:** The processed jobs are retained until either the maximum number of processed jobs or the maximum age of processed jobs limit has been met, whichever comes first.

- Click the **Finish** button.

4. Right-click the new configuration and choose **Start Poller** to activate monitoring of return files in the inbound hotfolder.



The ASC icon is green ( ) to indicate it is running on the specified directories at the specified interval.

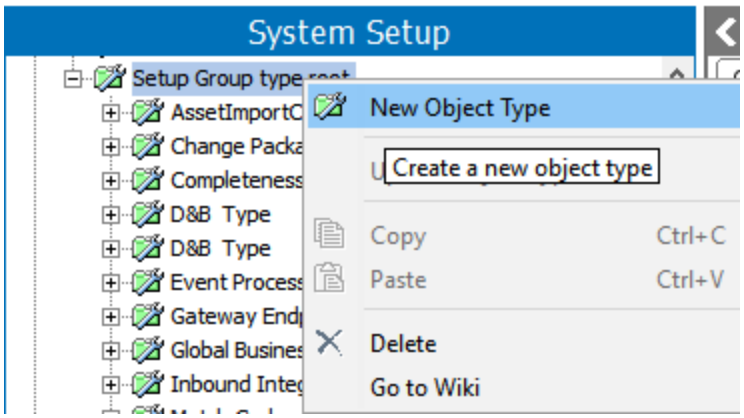
5. After adding all necessary operations, continue with Web UI setup as defined in the **Configuring List Processing in Web UI** topic.

Create the Asynchronous Services Object Type

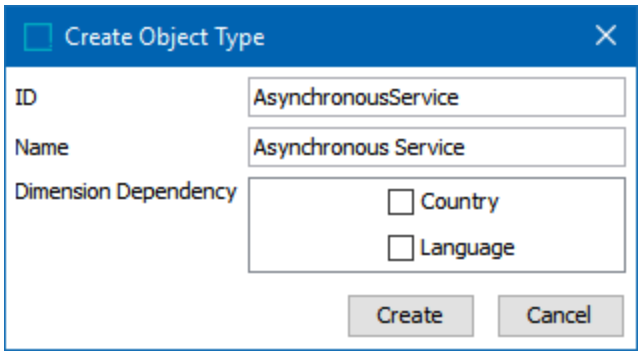
Before an asynchronous service can be set up and configured, an Asynchronous Services setup group root node and object type must be created. For more information about creating Setup Groups in general, refer to the **Setup Groups** section of the **System Setup**.

Use the following steps to create the object type.

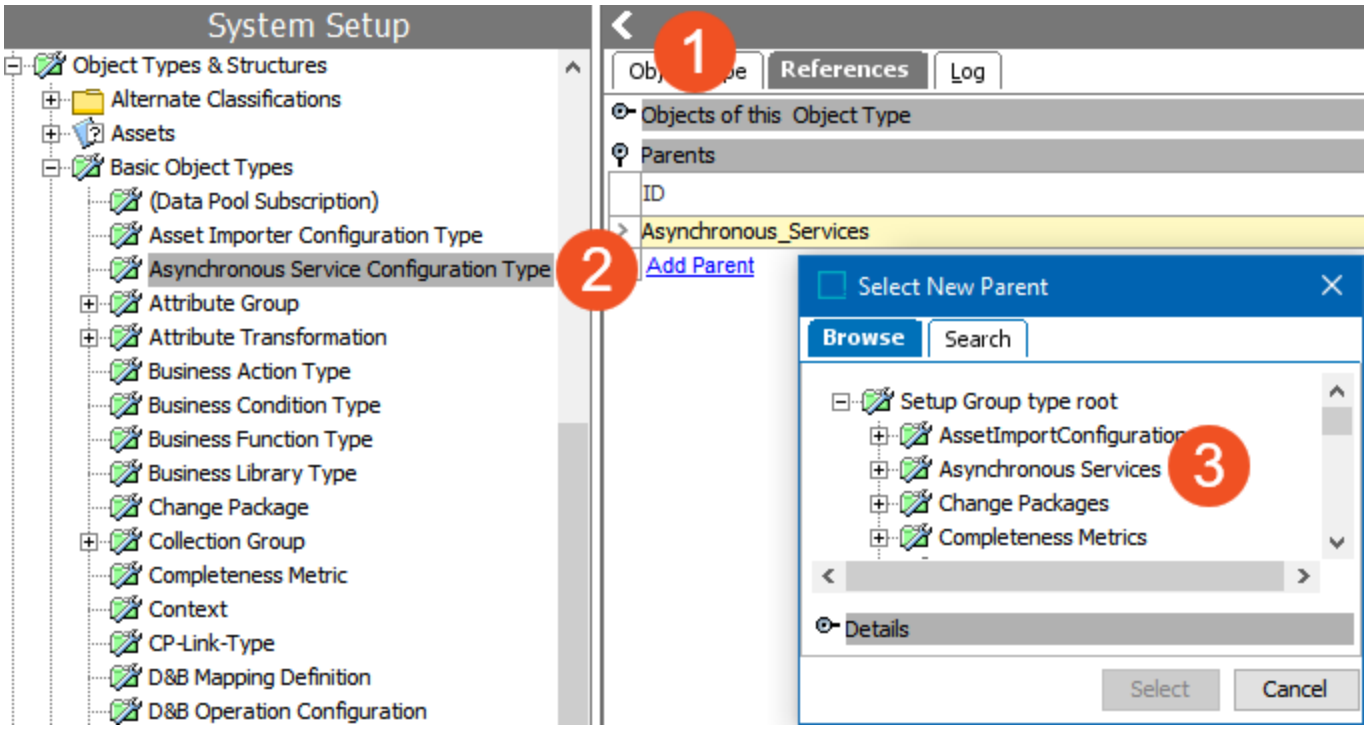
1. From 'System Setup', expand 'Object Types and Structures' and right-click **Setup Group type root**. Select **New Object Type**.



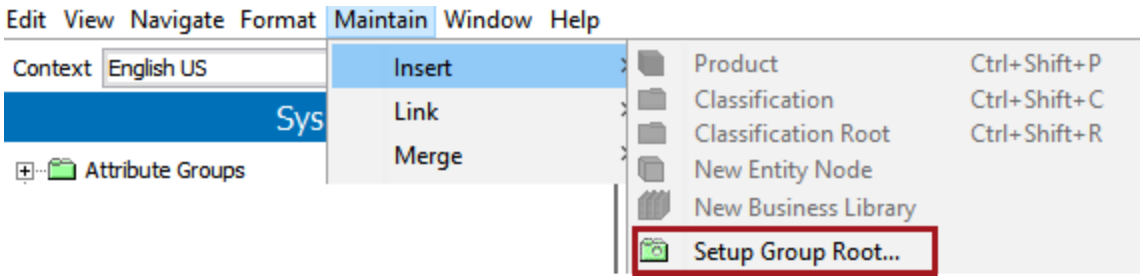
2. Enter a Name and ID in the **Create Object Type** dialog box.



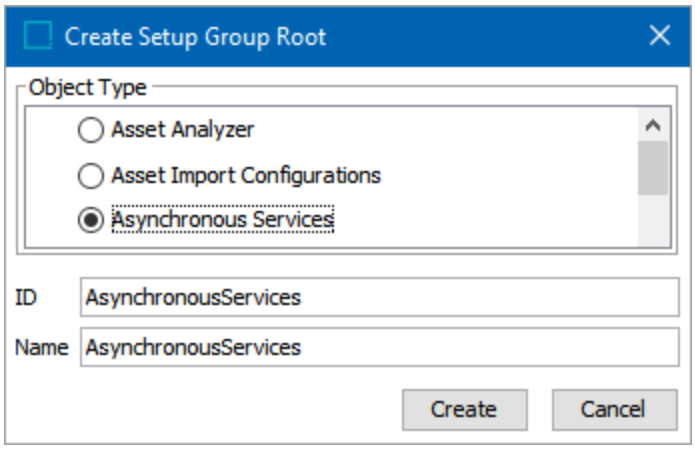
3. Remaining in 'Object Types & Structures', navigate to and expand 'Basic Object Types.' Select the 'Asynchronous Service Configuration Type.' Click on the References tab and select 'Add Parent.' In the **Select New Parent** dialog box, select the setup group root that was created in step two, and click the Select button to add it as a Parent.



4. Now the Asynchronous Service can be added as a root node under the 'System Setup' structure. In 'System Setup', select the **Maintain** menu, **Insert**, and **Setup Group Root**.



5. Select the Asynchronous Services root node that was created and give it an ID and a Name, and click **Create**.

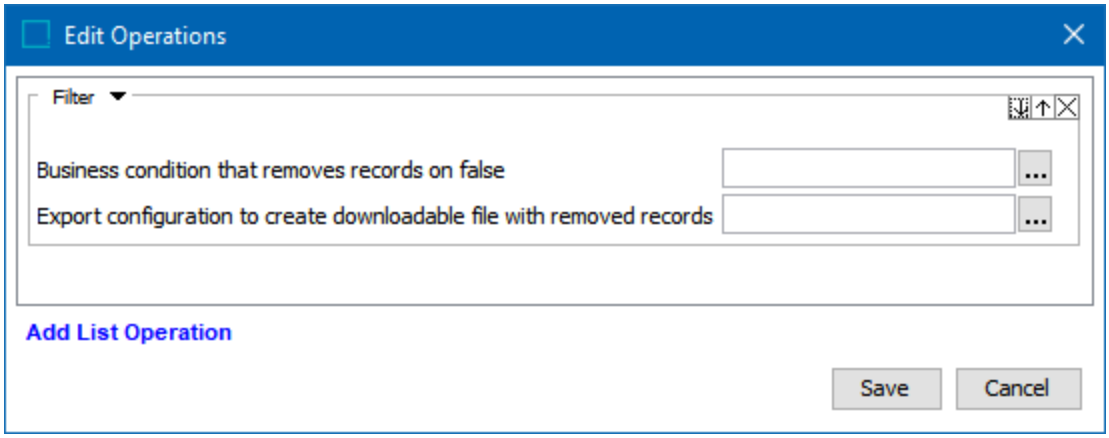


The Asynchronous Services setup group root and object type have been created

6. Configure an asynchronous service as defined in the following topics:
   - Configuring an Asynchronous Translation Service
   - List Processing External Processing Operation

List Processing Filter Operation

The Filter operation removes evaluated records that do not satisfy the business condition and allows those records to be exported for review. Removed records may be reviewed by a data steward so they can be updated.



- **Business condition that removes records on false** - select a business condition that determines which records should be removed. Records that return 'false' are removed.
- **Export configuration to create downloadable file with removed records** - select an export configuration to create an exported file with all the records that were removed after applying the business condition.

After adding all necessary operations, continue with Web UI setup as defined in the **Configuring List Processing in Web UI** topic.

List Processing Find Similar Master Data Operation

The Find Similar Master Data operation identifies any entity or product type in the database that matches the content of a list. During this operation, list record entities are transformed into the specified master data object type based on a List Processing Find Similar Configuration. Standardization is applied to the master data record via selected normalization business actions. Since a list record can have zero-to-many matches, a result handler business action manages potential matches and makes updates to the list records based on the matched results.

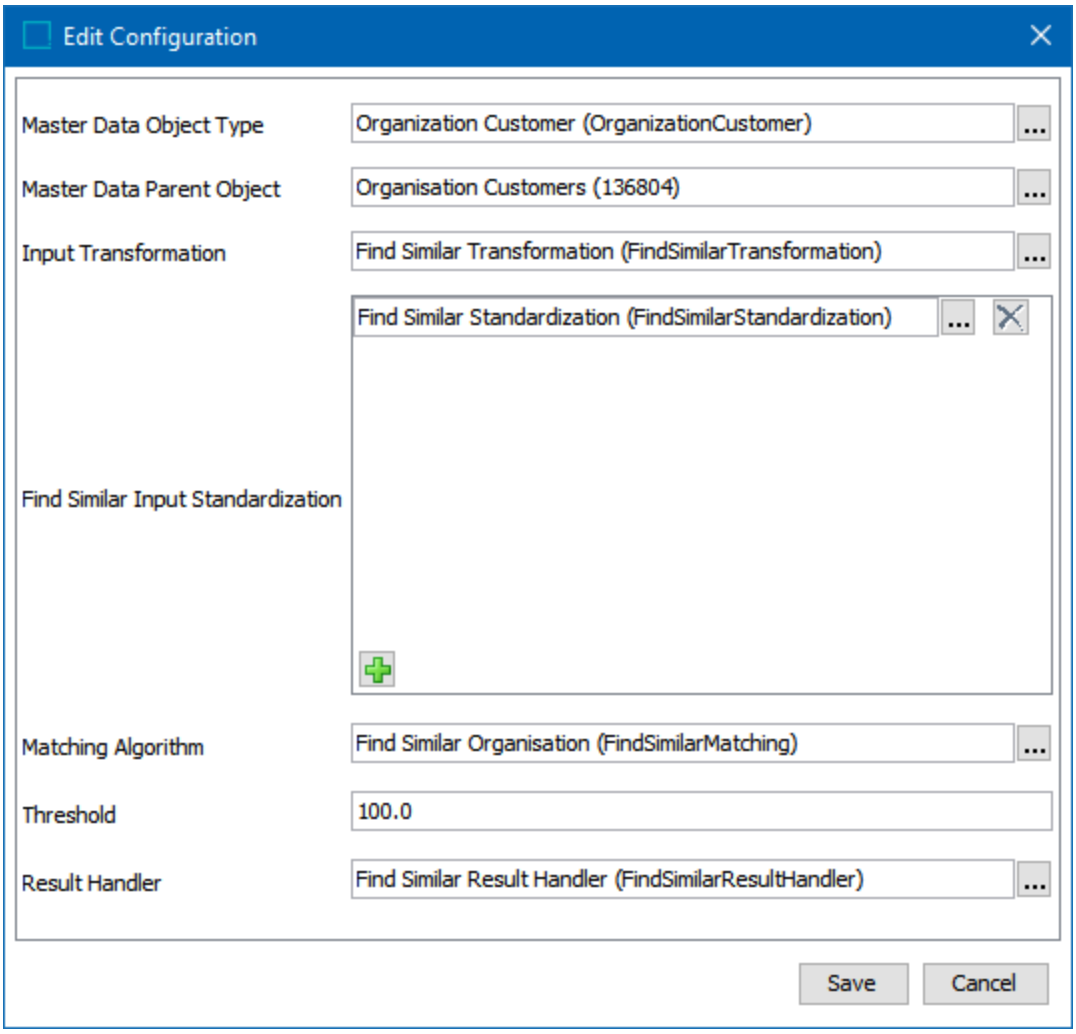
This operation uses existing matching logic and data transformations to:

- match prospect list records to master data entities or products.
- run match scoring to identify the existing master data.
- add master data to list records.

Prerequisites

The Find Similar Master Data operation requires a List Processing Find Similar Configuration.

1. In System Setup, Object Types & Structures, open the Basic Object Types node and select the 'List Processing Find Similar Configuration' object type. On the References tab, open the Parents flipper and verify an allowed location for the Configure the List Processing Find Similar Configuration (or click the **Add Parent** link to add a location).
2. Right-click an allowed root node and click **New List Processing Find Similar Configuration**. Add an ID and Name for the new configuration.
3. On the List Processing Find Similar Configuration editor, click the **Edit Configuration** link and provide the following required data:



- **Master Data Object Type** - select a single master data object type to search for matches
- **Master Data Parent Object** - select the parent folder of the master data object type for searching. To improve performance and limit the search nodes, select the parent closest to the desired objects.
- **Input Transformation** - select a JavaScript business action to transform the list record object to the specified master data object type, effectively mapping list record attributes to find similar input object attributes.

  Use the Current Object bind for the list record object

  Use the Find Similar Input Object bind for the master data object, as defined in the **List Processing Find Similar Binds** topic of the online help **Resource Materials** documentation.
- **Find Similar Input Standardization** (optional) - select the business action(s) to normalize the master data (via the Find Similar Input Object bind) before calling the find similar method on the matching algorithm. The Find Similar Input Object bind identifies the current object.

- **Matching Algorithm** - select the algorithm to find a matching master data object of the specified object type.
- **Threshold** - add the match score used as input to Find Similar.
- **Result Handler** - select a business action that uses a set of matching master data golden records to transform master data object type back to list object type and update the list record.

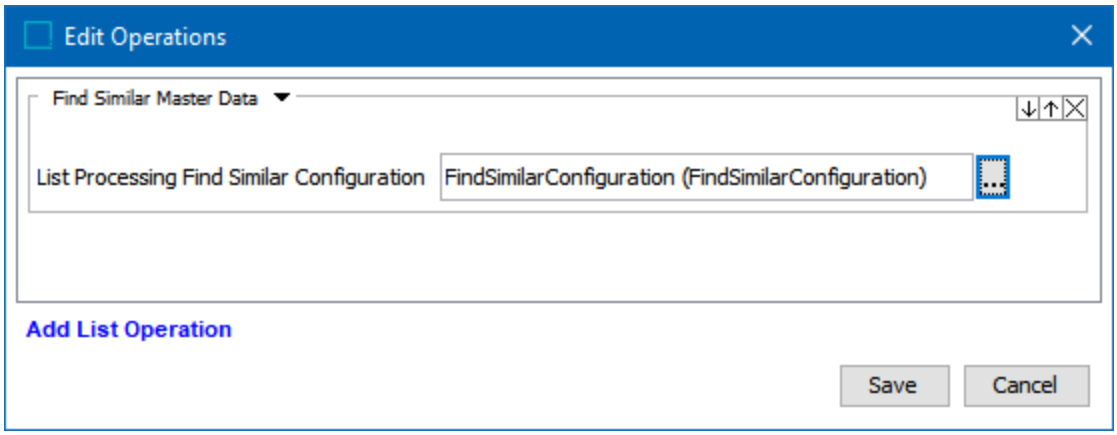
  Use the Current Object bind for the list record object

  Use the Find Similar Match Result List bind for the list of match results, as defined in the **Find Similar Binds** topic of the online help **Resource Materials** documentation.

  Note: Although the List Processing Find Similar Configuration can be saved while invalid to allow creation of the required elements, all parameters (except the standardization parameter) are required for List Processing to run successfully in Web UI.

Configuration

The Find Similar Master Data operation returns match results that can be used to add master data entity references to list records, enrich list records, and/or delete list records (for example, when the record on the prospect list is already a customer or a product on the list already exists in master data).

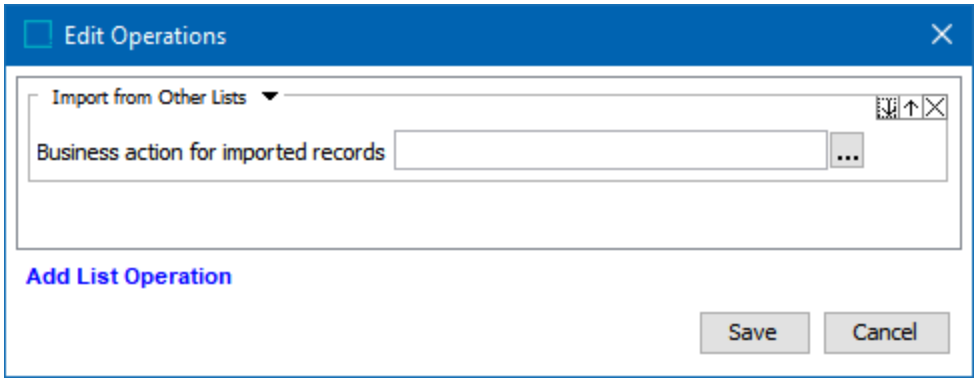


- **List Processing Find Similar Configuration** - select the List Processing Find Similar Configuration (created in the Prerequisites section above) to transform the list record object type to master data object type, apply the necessary standardizations, and handle the matched results. Updates are applied to the list records while the master data remains unchanged.

After adding all necessary operations, continue with Web UI setup as defined in the **Configuring List Processing in Web UI** topic.

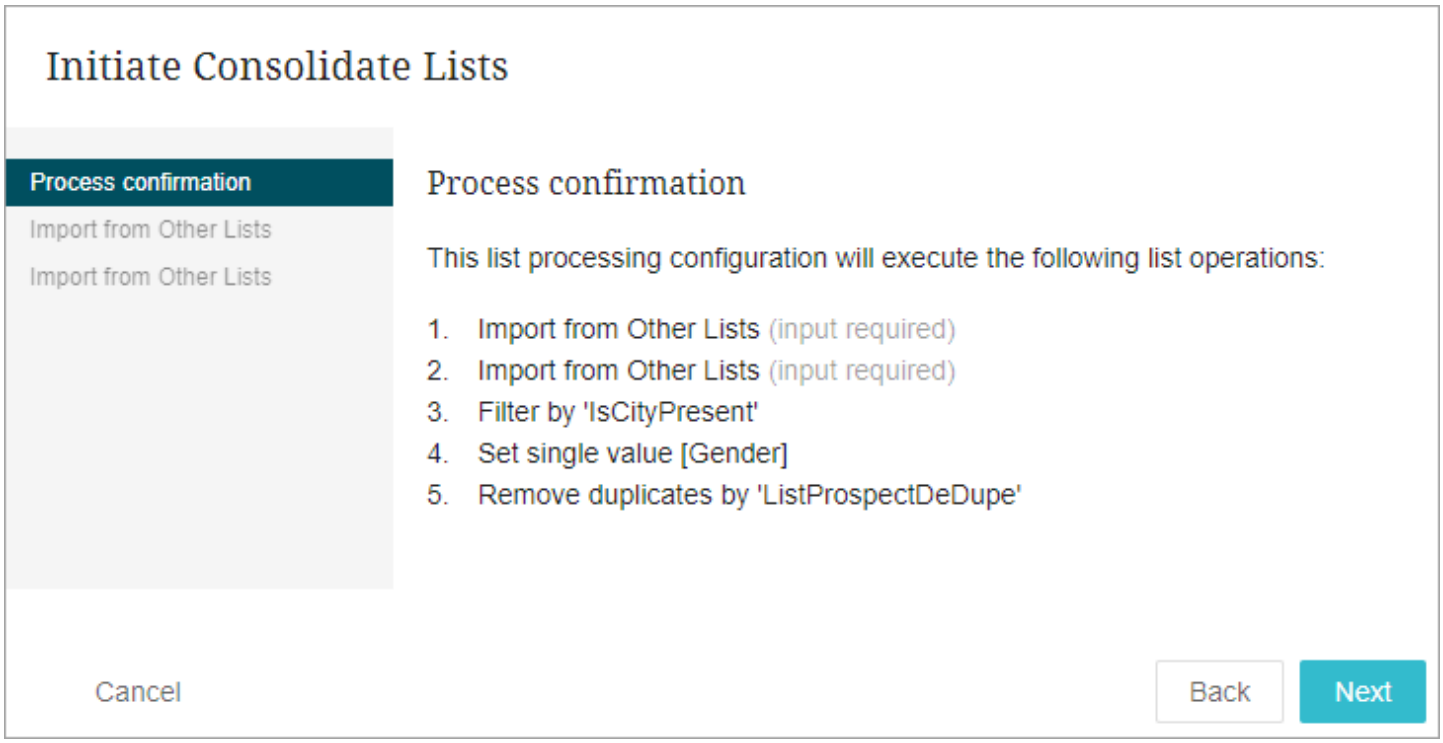
List Processing Import from Other List Operation

The Import from Other List (IFOL) operation combines multiple source lists into a single target list. The target list can contain records, or it can be an empty list. Multiple IFOL operations can be added to the list processing configuration, and when an IFOL operation is followed by other list operations, all the imported records are processed by the subsequent list operations. This can be used to apply a filter to the imported records and/or remove duplicates across existing and imported records.



- **Business action for imported records** - select an optional business action to be applied to every imported record. The action can be used to add or modify attribute values of the record (such as adding the source list ID for tracking the record back to its original source list) or enrich imported records with source list metadata.

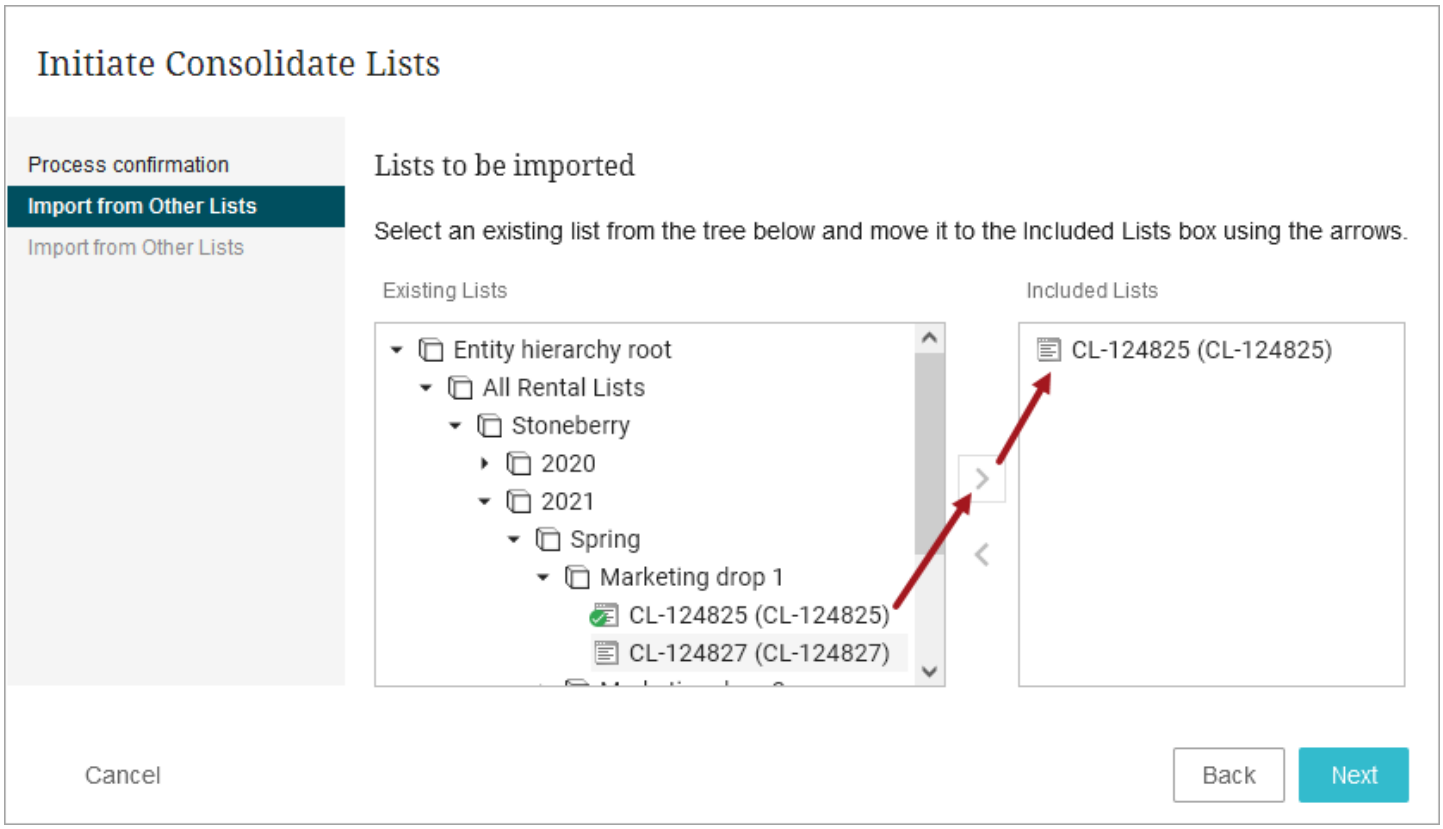
In Web UI, initiating a list processing configuration with IFOL operations (like the 'Consolidate Lists' configuration shown below) displays a wizard to allow you to select the source list(s). Click the **Next** button to provide the input.



A wizard step is presented for each IFOL operation in the configuration. Select a list in the 'Existing Lists' column and click the 'add to' button (>) to add a source list to the 'Included Lists' column. The green checkmark on an existing list indicates a list will be imported.

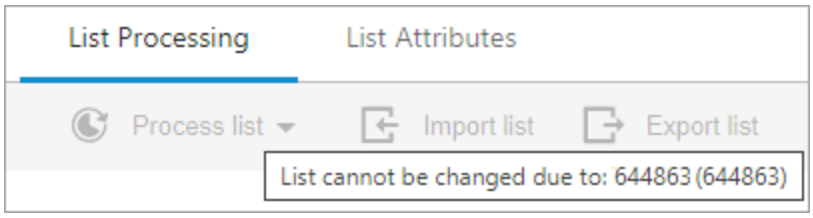
Multiple source lists can be included on a single IFOL step. Added lists can be removed using the 'remove from' button (<).

Note: Processing without any 'Included Lists' skips the 'Import from Other Lists' operations and runs any additional operations in the list processing configuration.

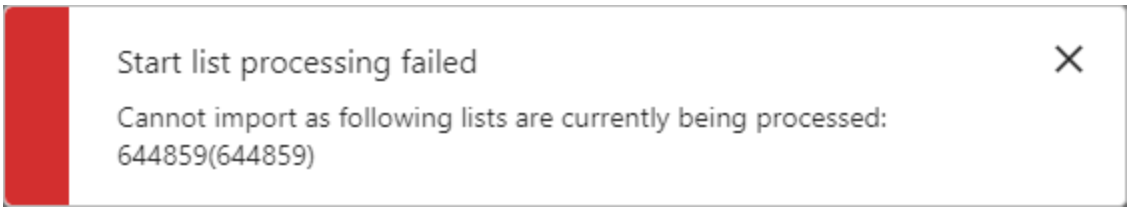


Processing Considerations

- Until the IFOL operation completes, source lists are locked to prevent processing by other configurations. Locked source lists can still be selected as source lists in other list processing configurations for IFOL operations.
- The 'Process list' dropdown is enabled if the list is ready for processing and is disabled if the list is locked by other list processing operation, such as an IFOL running in a different list processing configuration. For a source list, hover over the disabled 'Process list' dropdown to show the name and ID of the target list currently being processed by a BGP that has locked the list.



- List processing cannot start if, at the time of initiation, one or more of the selected source lists are already being processed. A message indicates the locked list(s).



The user can remove the identified lists from the wizard to proceed immediately, or wait to start the processing when the processing is complete.

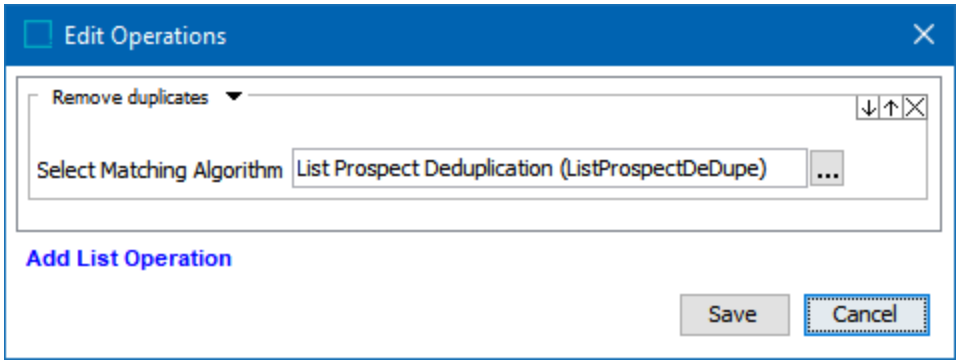
- For empty list entities, the 'Process list' button displays all list processing configurations but only those that include an ' Import from Other List (IFOL)' operation are enabled. For more information, refer to the **Creating Lists** topic.

Important: Record object types of the selected source lists must be valid for the target list. When the record object types are not valid, the records fail to import into the target list.

After adding all necessary operations, continue with Web UI setup as defined in the **Configuring List Processing in Web UI** topic.

List Processing Remove Duplicates Operations

The 'Remove duplicates' operation uses a preconfigured Matching Algorithm to merge and remove duplicate records in a list. The selected matching algorithm must be configured to use the 'List Processing Deduplicate Records' Match Action to be valid in this list operation, otherwise a validation error will be presented.



Match groups are created based on the match codes assigned to every record in the list. If a record has more match codes, the record is included as part of more match code groups.

Within a match group, each record will be compared with the other records individually. Duplicate candidate records are added to a match group when the matching algorithm with the source record scores higher than the configured auto-merge threshold. If the source record is in another match code group, and new duplicate candidates are found, these records will be added to the first match group.

For performance reasons, each record will only be compared to the first hundred records. To decrease the size of match groups, consider match tuning the matching algorithm that the list process uses. For more information, refer to the **Match Tuning** topic in the **Matching, Linking, and Merging** documentation.

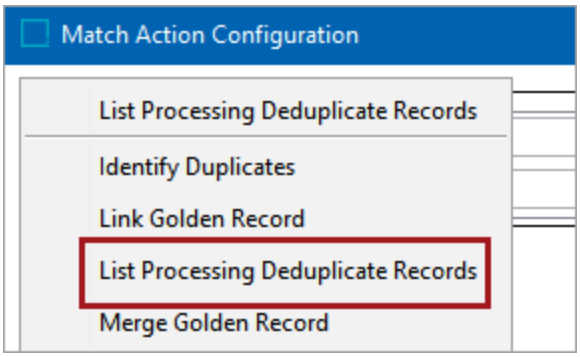
Within each match group, the system selects an arbitrary record. If a 'Merge Keep First Handler' business condition is configured on the List Processing Deduplicate Records match action it will be executed and allowed to select the surviving record. The non-surviving records are removed from the remaining match groups, so that these records will no longer be used to compare with other records.

To use this operation, users must configure a matching algorithm for deduplication as defined in the **Configuring Matching Algorithm for List Deduplication Operation** section below. For more information, refer to the **Configuring Matching Algorithms** topic in the **Matching, Linking, and Merging** documentation.

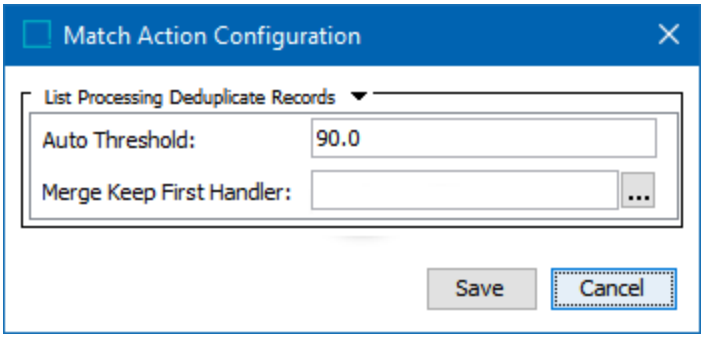
Survivorship rules can be configured to allow moving individual values from multiple non-surviving records to the surviving record. Only the Business Action survivorship rule is supported for list records; changes to the surviving record will not trigger a new matching action on that record. For more information, refer to the **Configure the Business Action Survivorship Rule for List Processing** section below.

Configure a Matching Algorithm for the List Deduplication Operation

1. On the matching algorithm object, click the Edit Match Action link and select the 'List Processing Deduplicate Records' match action.



2. On the 'List Processing Deduplicate Records' operation configuration dialog, configure as follows:



3. For the **Auto Threshold** parameter, set the value above which the records are automatically merged.

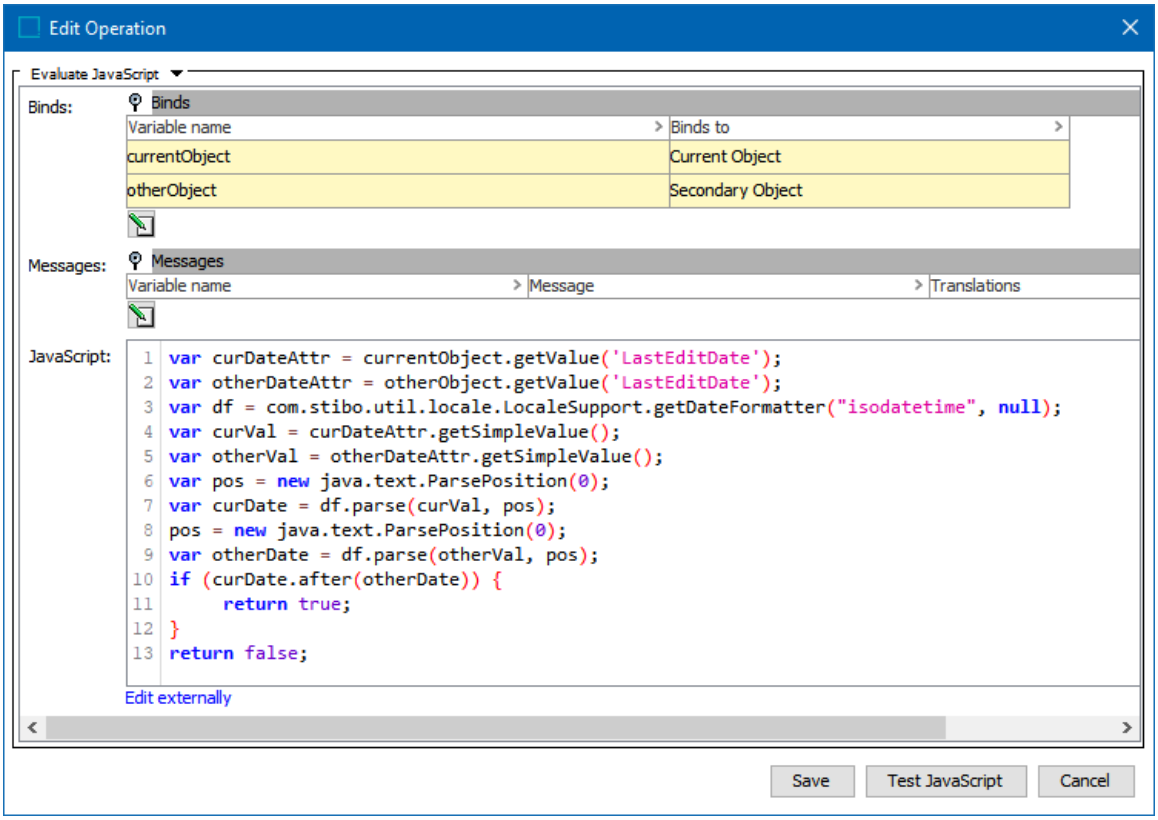
- For the **Merge Keep First Handler** parameter, optionally set a business condition that will decide which of two duplicate records would survive. If no business condition is configured, the surviving record is selected randomly.

  The following JavaScript binds may be used to configure a Merge Keep First Handler business condition.

  - **Current Object** - the current record
  - **Secondary Object** - the identified duplicate record

  Note: Duplicate and Non-Duplicate types are not necessary for this match action and will be ignored if those types are configured.

The following is an example of a configured Match Keep First Handler condition.



4. Configure the survivorship rules for the matching algorithm as defined in the following section.

Configure the Business Action Survivorship Rule for List Processing

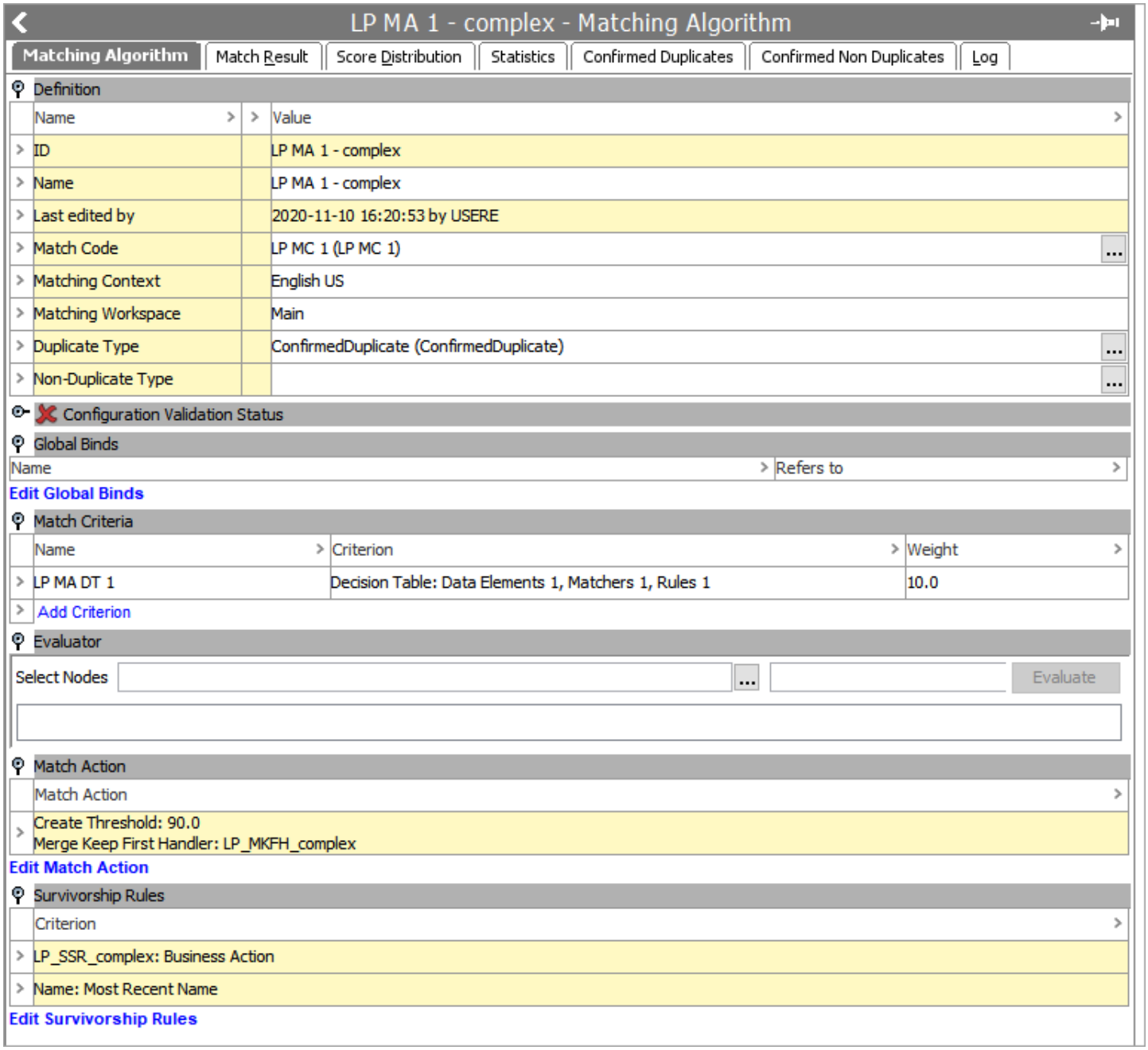
Survivorship rules are used to move data values from the non-surviving records to the surviving records. When configuring, it is possible for the survivorship rule source object bind to have multiple source records. For more information, refer to the **Survivorship in Match and Merge** topic in the **Matching, Linking, and Merging** documentation.

Note: Only business action survivorship rules are supported for this option. If any other survivorship rules are configured, these are ignored and cause configuration validation warnings.

When configuring the survivorship rules for the list processing deduplication algorithm, only two JavaScript binds are acceptable:

- **Current Object** - the record that survives
- **Survivorship Rules Source Objects** - the non-survivor duplicate record

The following is an example of a fully configured List Processing Deduplication matching algorithm. For more information, refer to the **Configuring Matching Algorithm** topic in the **Matching, Linking, and Merging** documentation.



After adding all necessary operations, continue with Web UI setup as defined in the **Configuring List Processing in Web UI** topic.

Configuring List Processing in Web UI

This topic will guide users through the process of creating the screens required to import, process, and export customer lists in the Web UI.

Prerequisites

Before the Web UI configurations can be done, workbench configurations are required. Refer to the **Configuring List Processing in Workbench** topic in this documentation.

It is expected that anyone configuring the List Processing component is familiar with the Web UI designer as basic concepts for working with the designer are not covered in this section. In addition, the user must have appropriate privileges to access the designer. Additional information can be found in the **Designer Access** section of the **Web User Interfaces** documentation.

Configuration

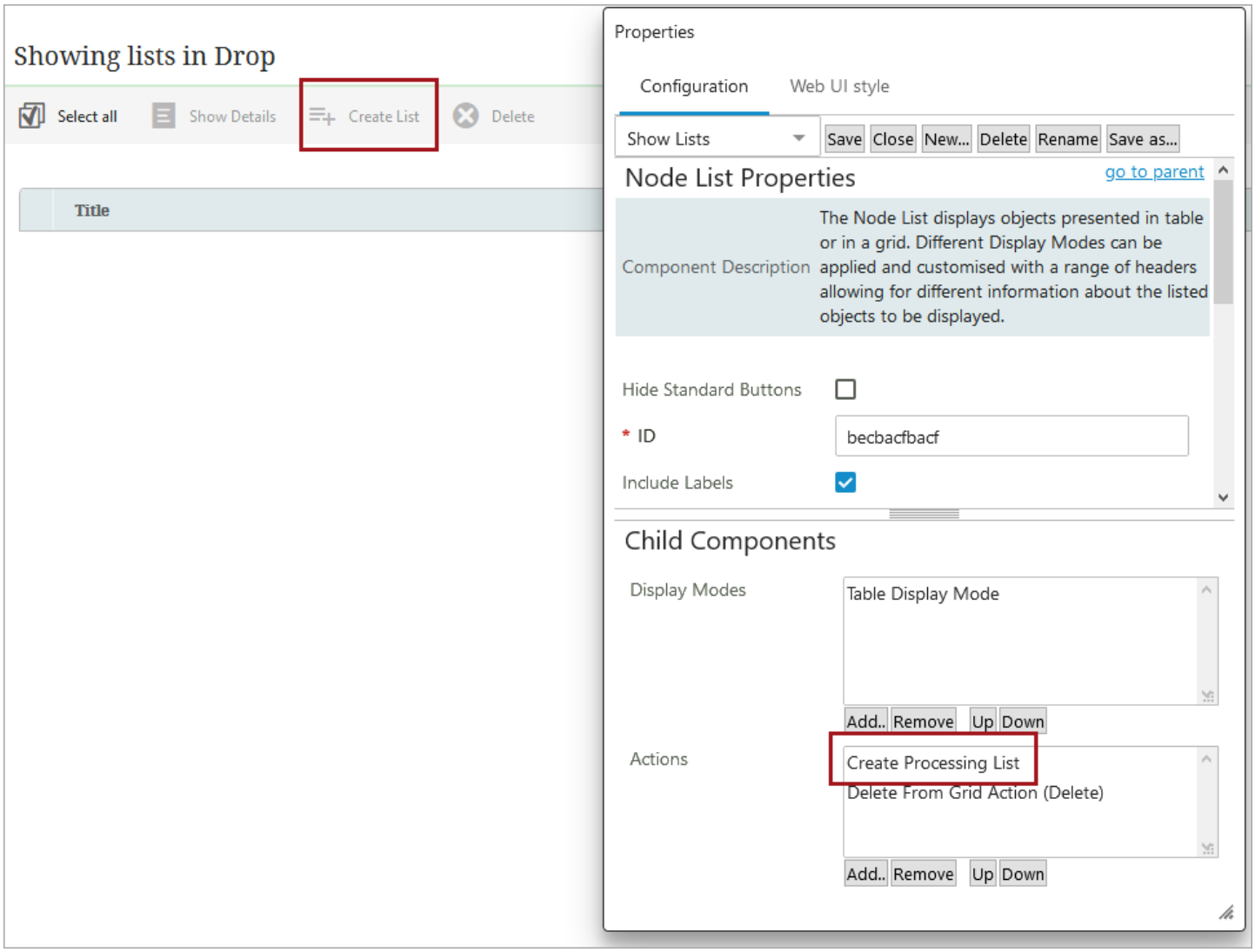
In the Web UI, these configurations are required to use List Processing, each of which is described in the sections below:

- A Node List screen that holds the lists for processing
- A Node Details screen that shows the list processing information by including the required Processing List Tab Page and an optional metadata tab
- A mapping from the object type to the Node Details screen
- A Data Profile screen that gives access to the customized list object data profile information
- A mapping from the processing screen to list profile findings

Once mapped, users may use list processing and profile findings in the Web UI. For more information, refer to the **Processing Lists** topic in this documentation.

Create a Node List Screen with a 'Create Processing List' action button

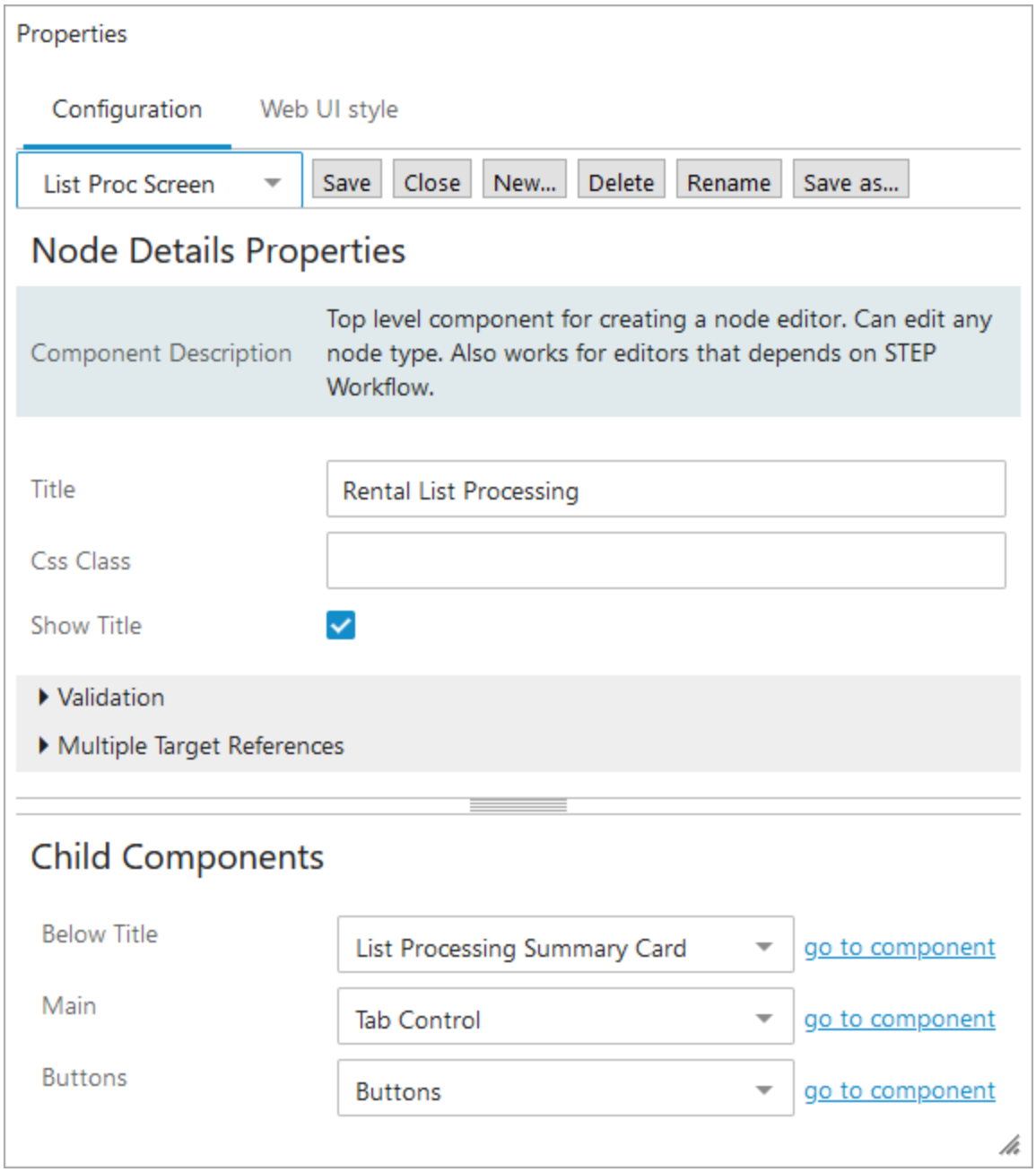
To import and create lists in the system, a 'Create Processing List' action button must be added to the valid Node List. In this example, the Show Lists screen includes the button named 'Create List' was added. For information on adding action buttons to a Web UI screen, refer to the **Action Button Configuration on a Node List** topic in this **Web User Interfaces** documentation.



Create a Processing Screen

In design mode, click 'New' to create a new 'Node Details' screen, give it an ID (such as 'List Proc Screen') then click the 'Add' button.

The configured screen shown below shows the Child Components for list processing. Refer to the **Node Details Screen** topic for details about the other configuration possible on this screen.



- Below Title 'List Processing Summary Card' - automatically includes the Title defined, the name and ID of the list object, the list object type, the number of records, the created date and time, and a Profile Findings button set to filter on object type. No additional configuration is available.
- Main 'Tab Control' - click the 'go to component' link and add the following child components:
  - 'Processing List Tab Page' - add a custom title or use the default 'List Processing' title.
  - 'Tab Page' - if desired, for example, add a Node Editor with an Attribute Value Group component to allow

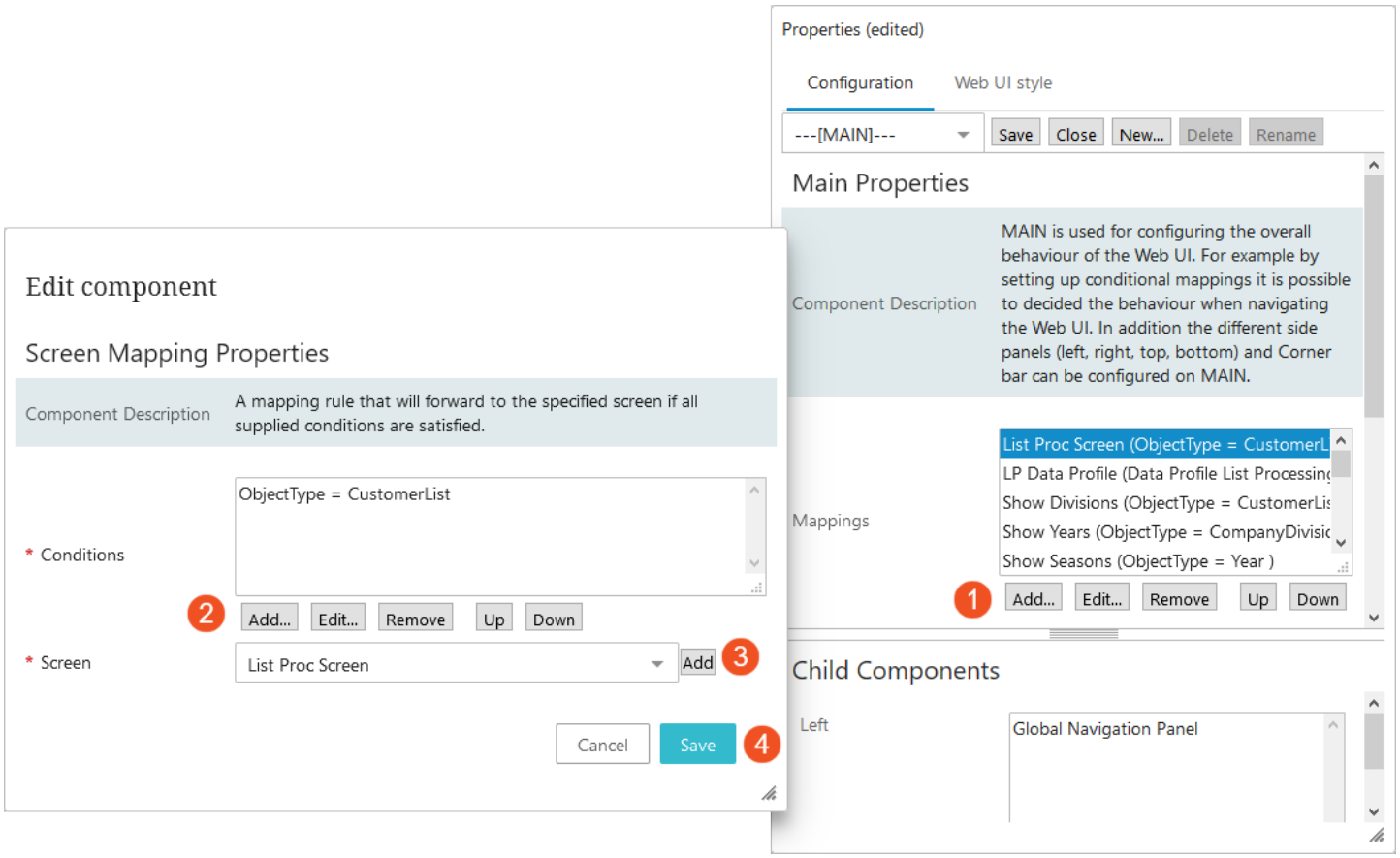
metadata manipulation. For more information, refer to the **Attribute Value Group Component** topic in the **Web User Interfaces** documentation.

- Buttons 'Buttons' - add a Save, Delete, and Reset action button as appropriate for list entity attributes.

Map Object Type to the Processing Screen

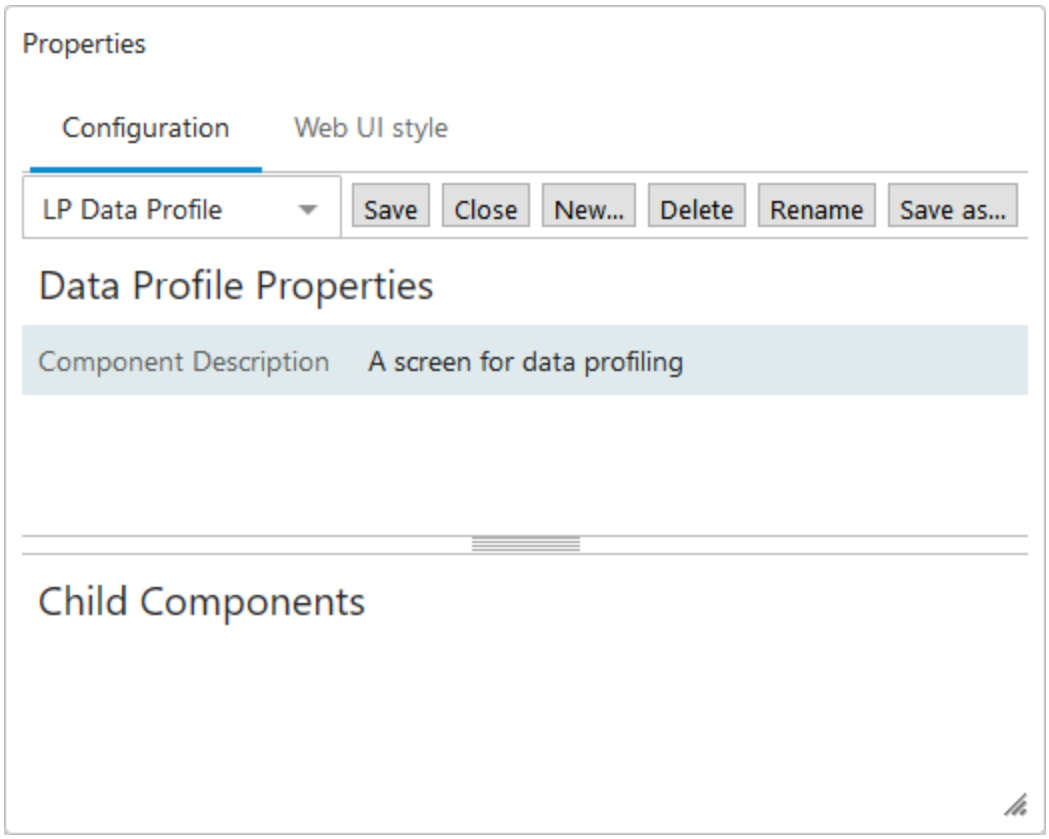
Complete the following mapping to ensure that the List Processing Screen is shows contents of a particular list object type. On [--MAIN--] in the designer, select 'Add' under the field for the 'Mappings' parameter. On the Screen Mapping dialog, configure the new mapping as follows:

- Conditions: add the Object Type set in the component model. Refer to the **List Processing Component Model** topic.
- Screen: add the List Processing Screen (named 'List Proc Screen') that was created in this topic.



Create a Data Profile Screen

In design mode, click 'New' to create a new 'Node Details' screen, give it an ID (such as 'LP Data Profile') then click the 'Add' button. Once created, the screen requires no further configuration. Click 'Save' to make the screen available for mapping.

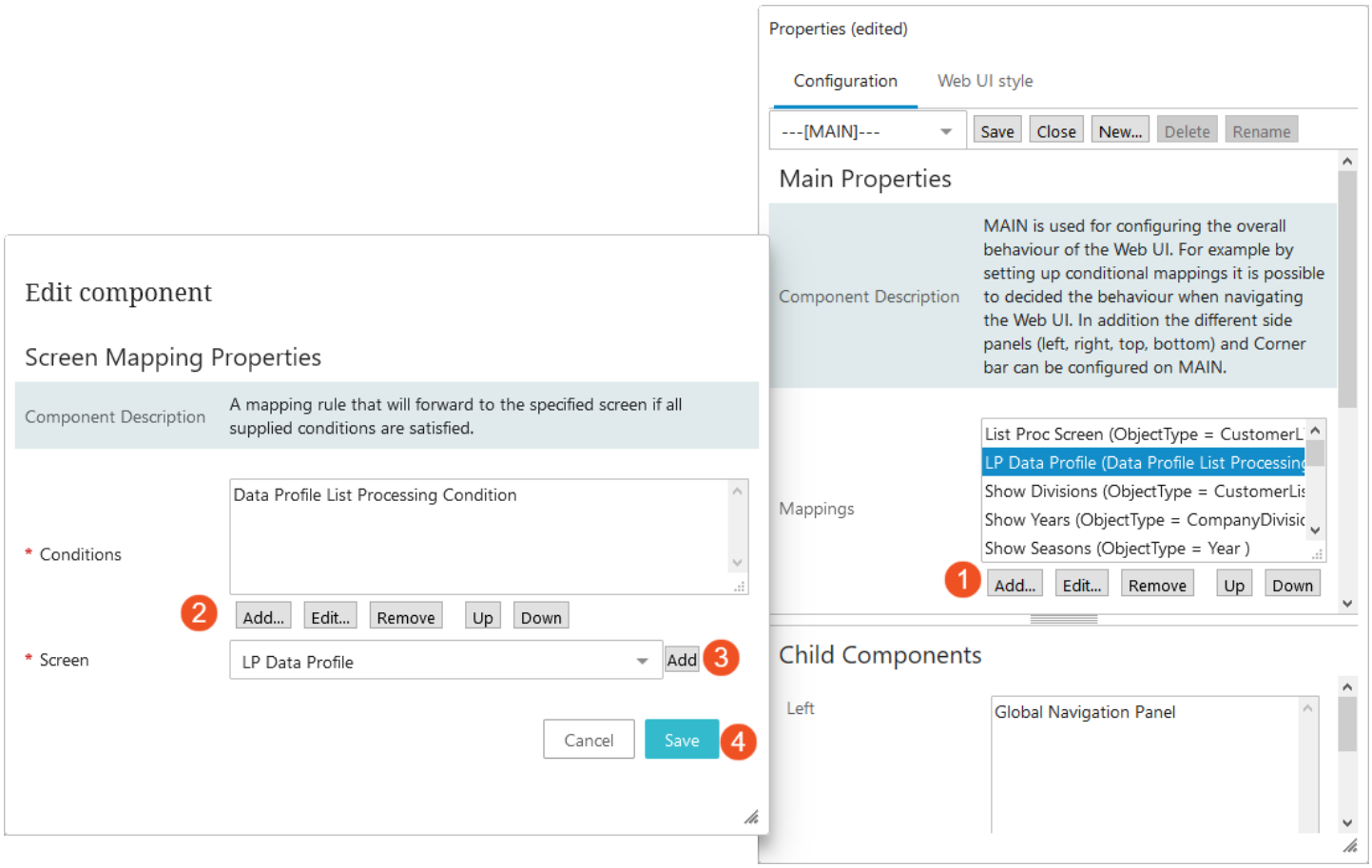


Map Profile Findings from the Processing Screen

Complete the following mapping to ensure that the Profile Findings link displays a Data Profile Screen that is customized for list object types. This mapping is in addition to mapping for a standard Data Profile Screen (for object types other than lists), as defined in the **Data Profile Screen** topic.

On [--MAIN--] in the designer, select 'Add' under the field for the 'Mappings' parameter. On the Screen Mapping dialog, configure the new mapping as follows:

- Conditions: add the Data Profile List Processing Condition.
- Screen: add the Data Profile screen.


Properties (edited)
Configuration
Web UI style
---[MAIN]---
Save
Close
New...
Delete
Rename
Main Properties
Component Description
MAIN is used for configuring the overall behaviour of the Web UI. For example by setting up conditional mappings it is possible to decided the behaviour when navigating the Web UI. In addition the different side panels (left, right, top, bottom) and Corner bar can be configured on MAIN.
Mappings
List Proc Screen (ObjectType = CustomerL
LP Data Profile (Data Profile List Processin
Show Divisions (ObjectType = CustomerLis
Show Years (ObjectType = CompanyDivisic
Show Seasons (ObjectType = Year)
1
Add...
Edit...
Remove
Up
Down
Child Components
Left
Global Navigation Panel
Edit component
Screen Mapping Properties
Component Description
A mapping rule that will forward to the specified screen if all supplied conditions are satisfied.
* Conditions
Data Profile List Processing Condition
2
Add...
Edit...
Remove
Up
Down
* Screen
LP Data Profile
Add
3
Cancel
Save
4

Creating Lists

To create a new list in STEP, users create a list entity and then to add records to the new list, a user uploads and imports a file of records for the list entity. The Create List action button can create a list entity and import a file with records in a single operation. Additionally, users can create only the list entity and then later upload and import the records when the records file is available.

Important: Records are stored in isolation, which means the functionality is limited for list records. List records cannot be searched for and cannot be displayed as regular entities in either Workbench or Web UI. For more information, refer to the **Configuring List Processing in Workbench** topic in this documentation.

Creating a list is the process of either:

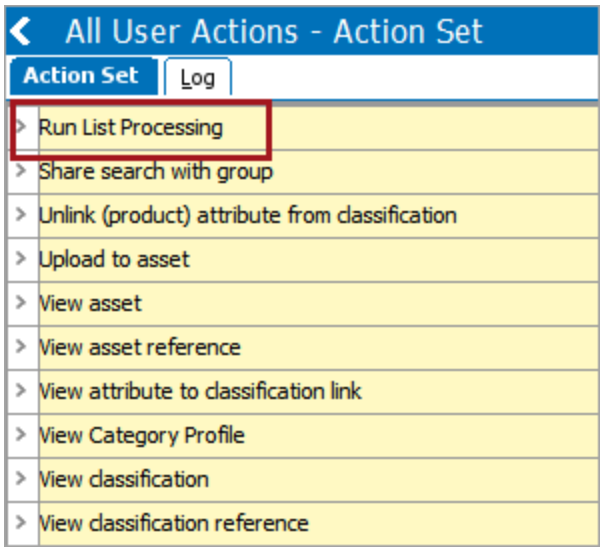
- Importing formatted data as a list object type where the data is created as list entity object types for processing.
- Creating an empty list entity (without importing a data file) where the 'Create List' action button dialog only requires the ID and Name to be populated.

The importing procedure is managed by a background process (BGP) and the BGP statuses allow the users to follow the progress of the import process, including waiting and running states. Errors and warnings can occur during import of records from a file and the importing BGP can therefore complete in any of the following states for the following reasons. For more information, refer to the **Background Processes and Queues** topic in the **System Setup** documentation.

Prerequisites

This topic assumes that users have already created the required workbench configurations, Web UI screens, actions, and object types required for list processing. For more information on the required setup for processing lists, refer to the **List Processing** topic.

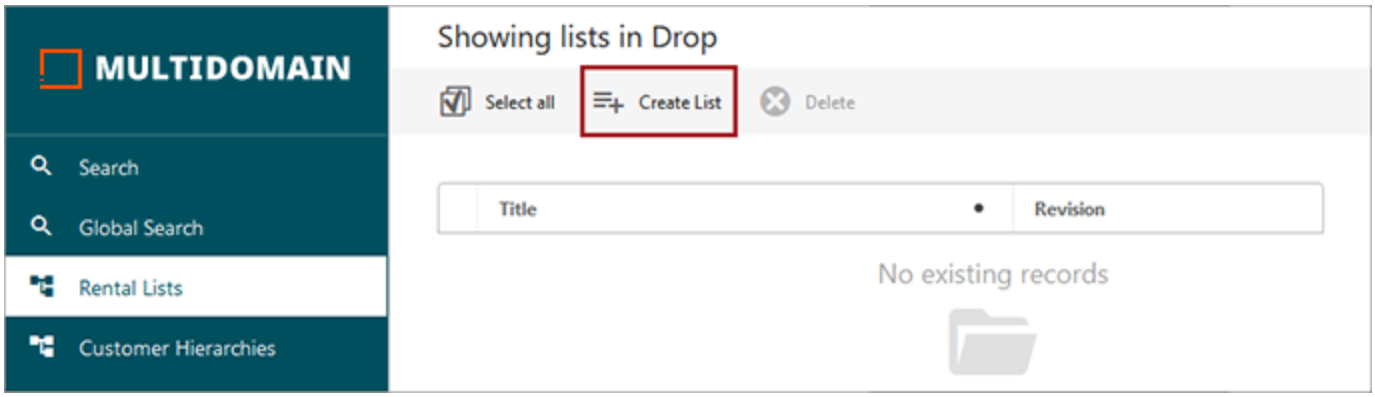
To create list processing, users must be part of a user group with the 'Run List Processing' user action. For information on adding user actions, refer to the **Maintaining Action** topic in the **System Setup** documentation.



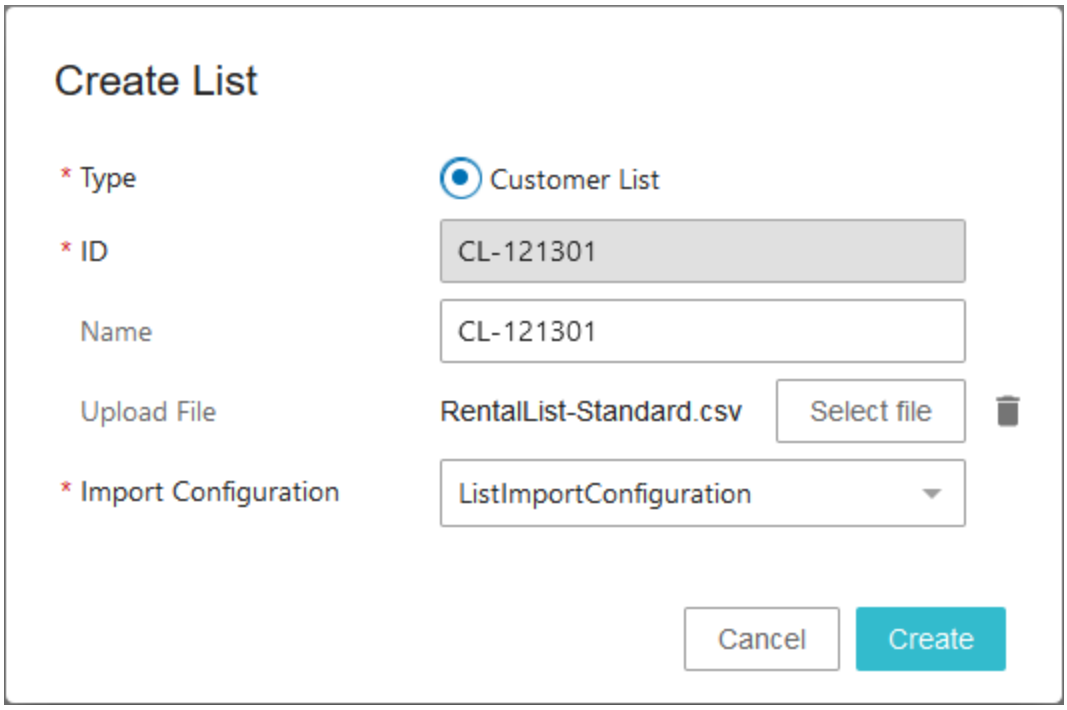
Create a List Entity by Importing a File

Use the following steps to import a list and create list entity object.

1. On the Web UI screen, from a valid parent node of a list object type, select the 'Create List' option.



2. On the Create List dialog, provide the following information:



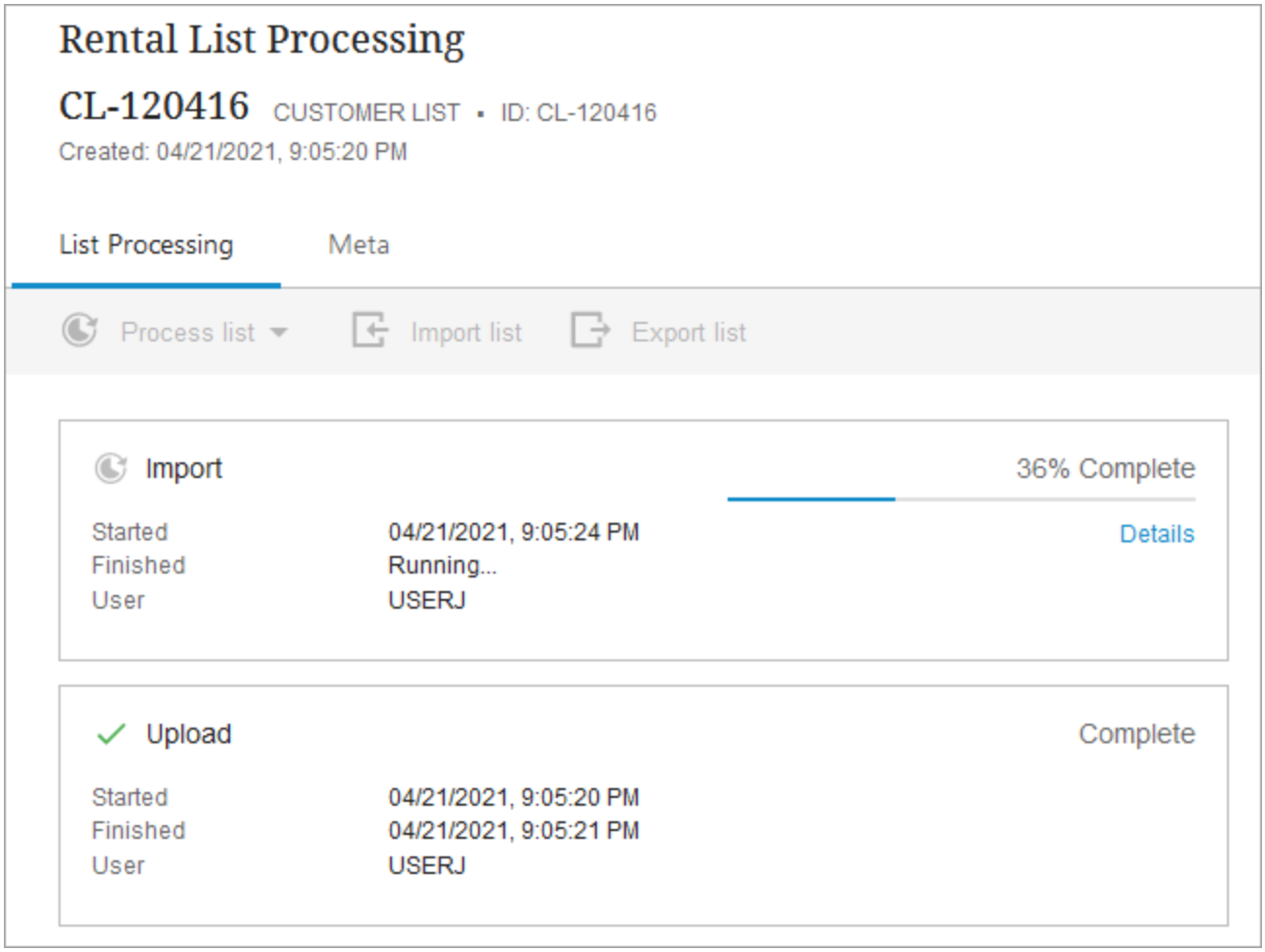
- For the **Type** parameter, select the desired object type. All valid list object types as set in the component model are shown. If more than five list object types exist, the parameter is displayed as a dropdown.
- For the **ID** and **Name** parameters, add data to identify and reference the list.
- For the **Upload File** parameter, optionally select data files for importing.
- For the **Import Configuration** parameter, when uploading a file, select a pre-configured import configuration that can be used to the data model of the entity records in the list. Users can import lists in any of the file formats supported by the STEP importer. For more information, refer to the **Import Manager** topic in the **Data Exchange** documentation.

Important: An import configuration contains many elements and parameters that can be configured. On the following import configuration wizard, only these elements are relevant for list entities:

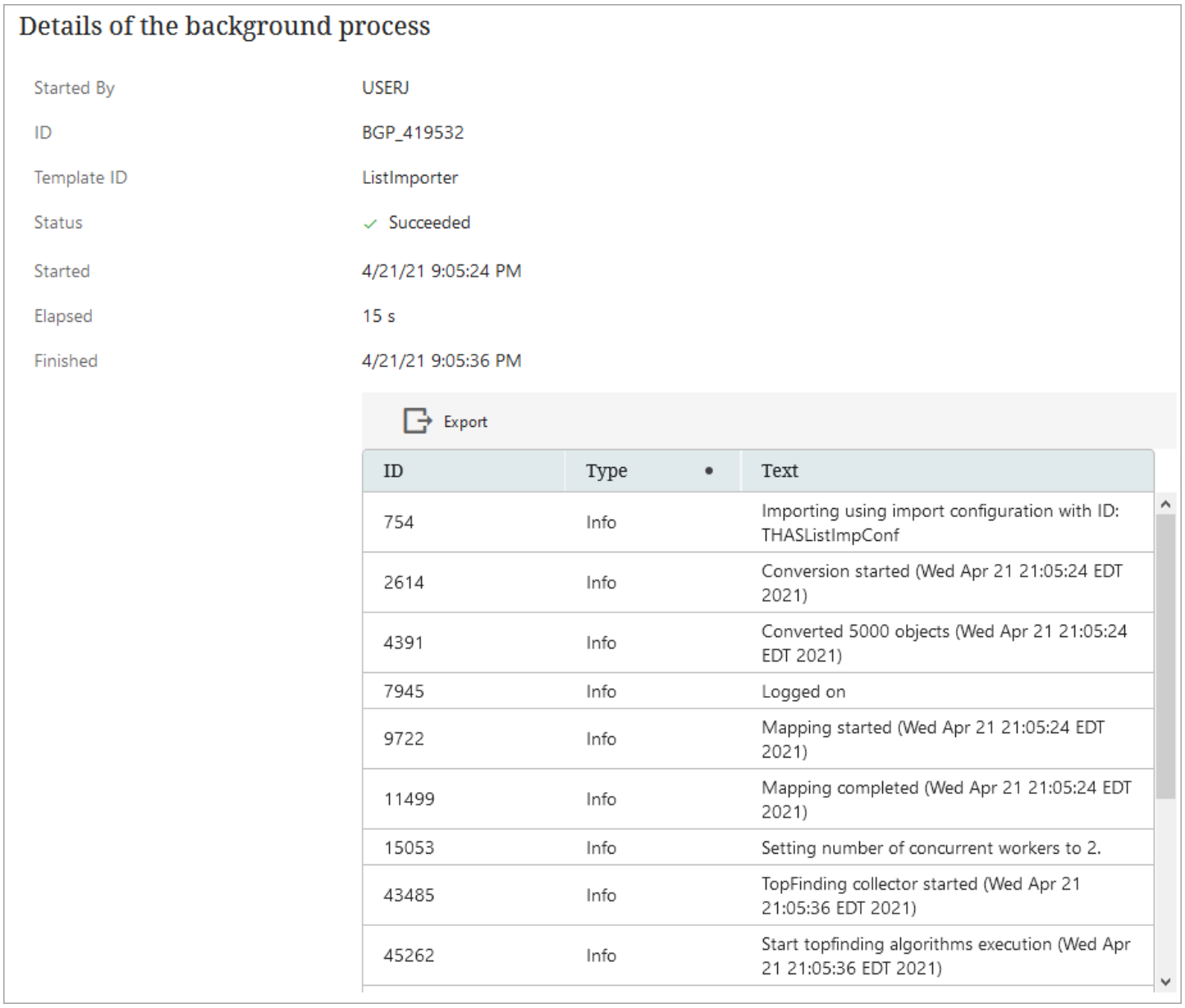
- **Map Data**: ID, Name, Attribute, Entity Reference, Reference Meta-Data, Object Type, Variable, Multivalued Variable and Data Containers.
- **Identify Destination**: Default Parent, an instance of a list must be selected to be able to select Default Object Type, Default Object Type.
- **Advanced Setting**: Match Units By.

3. Click the **Create** button to show the 'Upload' dialog for the duration of the list upload process.
4. When upload is complete, the dedicated **List Processing Screen** displays relevant information about the newly created list.

- If a file was uploaded, two process cards are displayed: one for the completed upload process and one for the ongoing import process. Both include start and stop timestamps and the user ID.



5. Click the 'Details' link (shown in the image above) to review import BGP details, even while the import is in progress, including any errors and warnings.

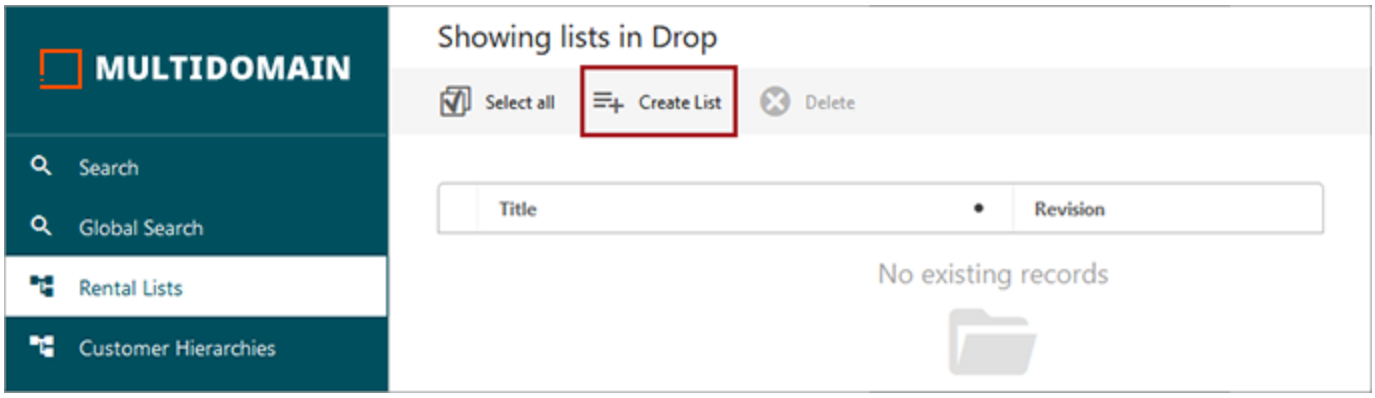


6. Continue by processing the list as defined in the **Processing Lists** topic.

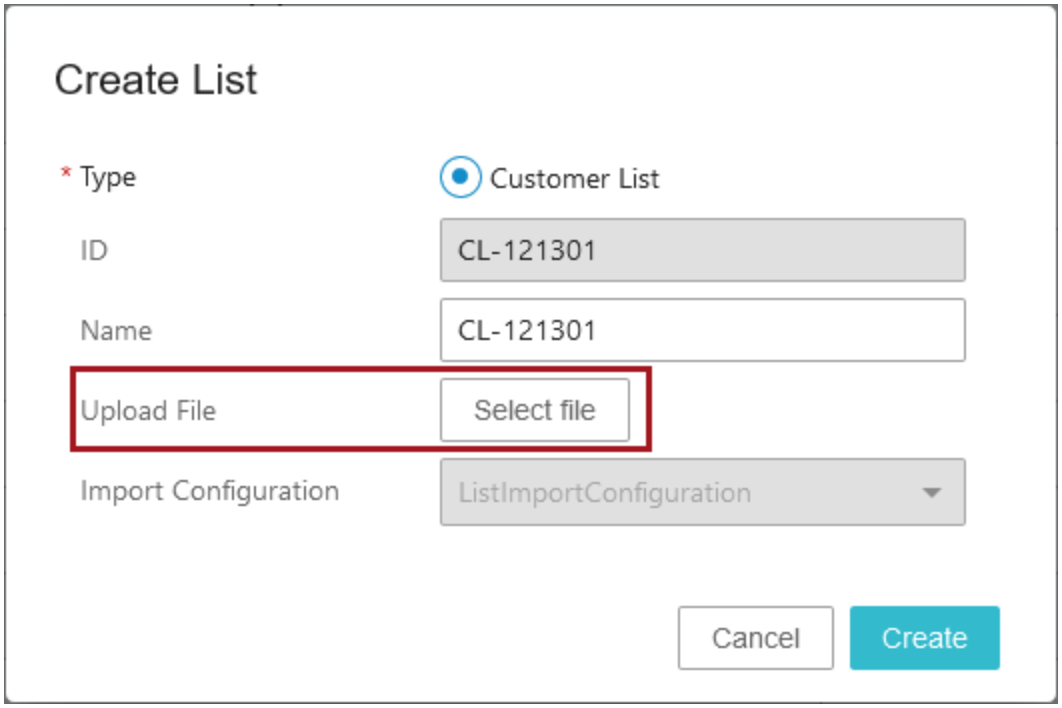
Create Empty List Entities

Creating a list without importing a file creates an empty list entity, allowing the user to import their list data later.

1. On the Web UI screen, from a valid parent node of a list processing object type, click the 'Create List' button.



2. On the Create List dialog:
   - Add a Name
   - Do not select an Upload File or Import Configuration.
   - Click the Create button.



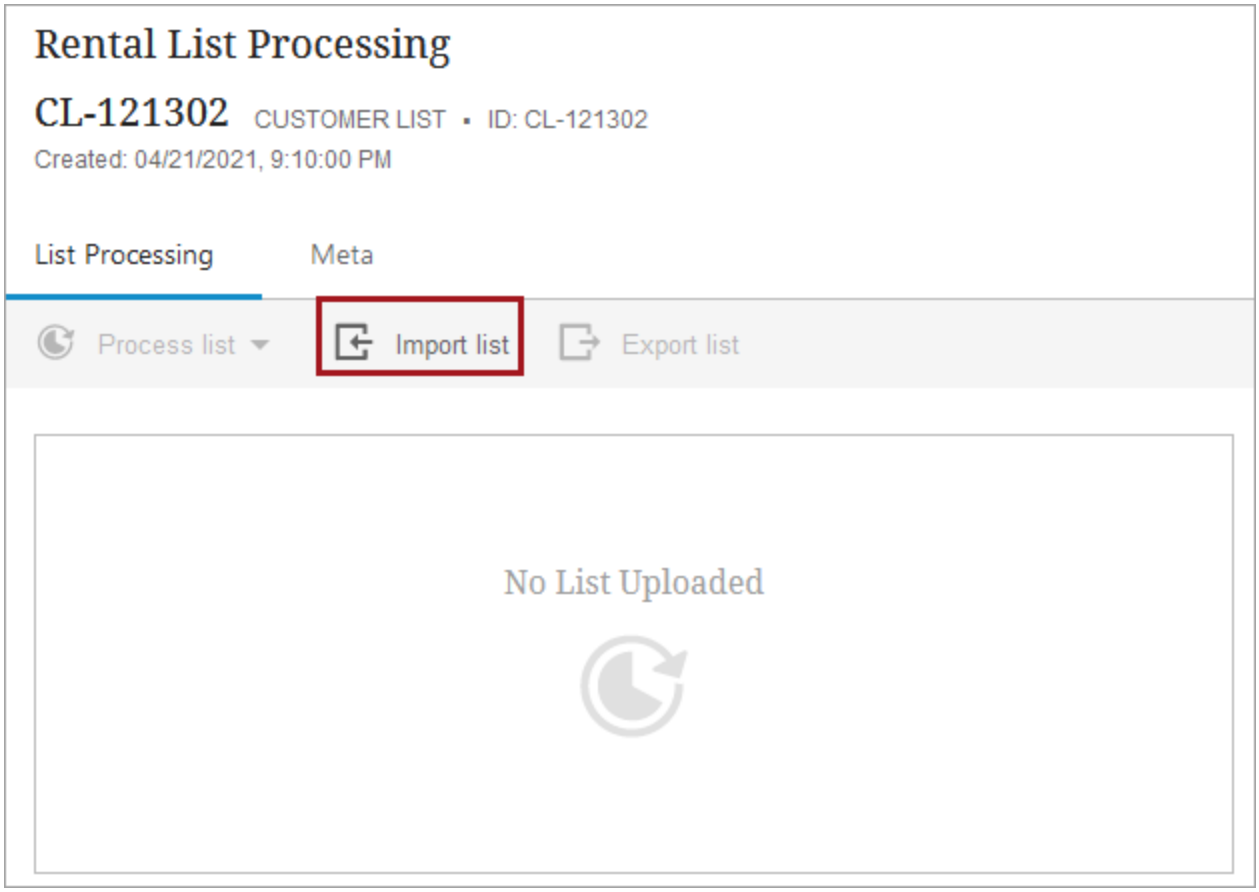
The empty customer list displays in the configured Web UI screen. Add data to the list object as described in the following 'Import a File Saved Locally' section.

Import a File Saved Locally

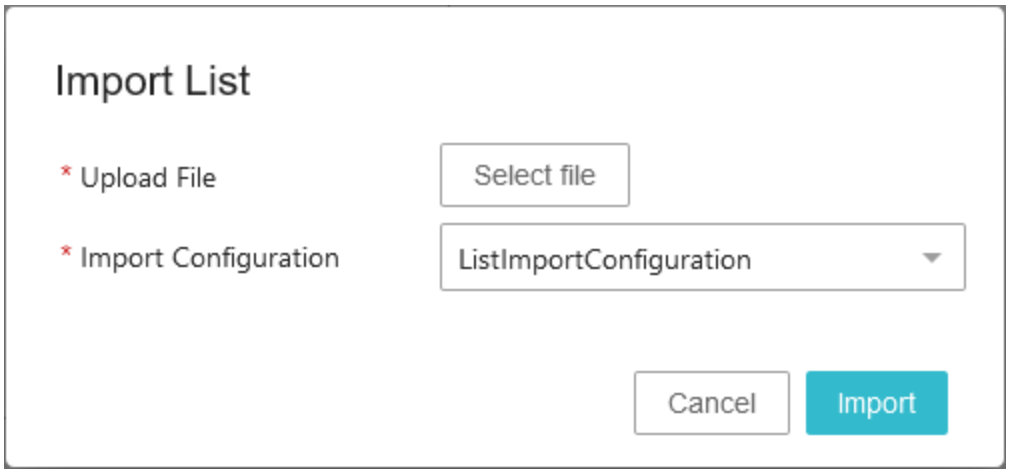
When the list object has already been created, a file of records saved on your own network can be added to the list.

For empty lists, the 'Process list' button displays all list processing configurations but only those that include an ' Import from Other List (IFOL)' operation are enabled. For more information, refer to the **List Processing Import from Other List** Operation topic.

1. Open the list object.
2. Select the 'Import list' button to display the 'Import List' dialog.



3. Select a local import file and a compatible import configuration.

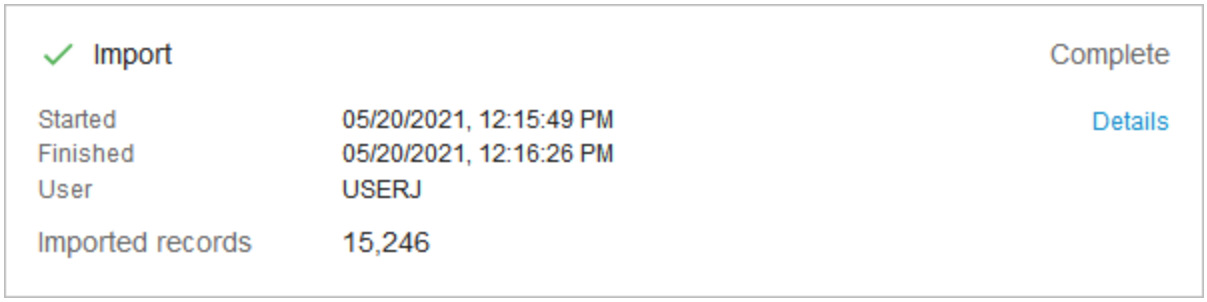


4. Click the **Import** button to import the list and run the process operations.
5. Continue by processing the list as defined in the **Processing Lists** topic.

Import BGP Statuses

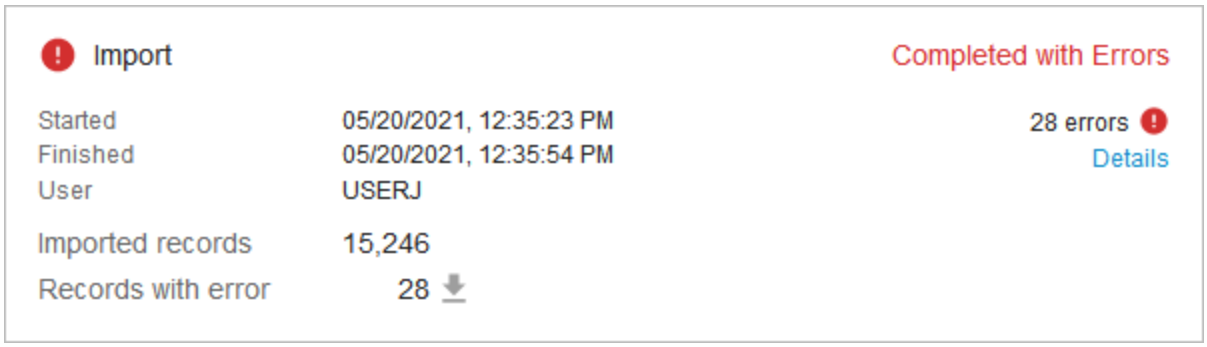
An import BGP will have one of the following statuses:

- **Complete** - all records were imported without any errors or warnings.

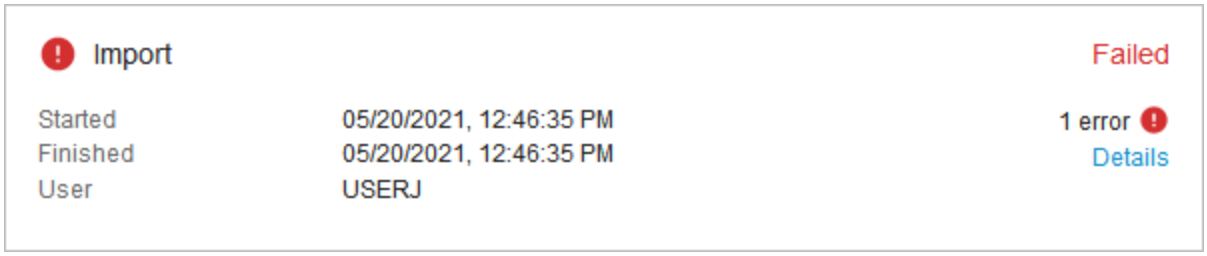


- **Complete with Errors** - entire records could not be imported based on information the import file. This could be due to invalid object type.

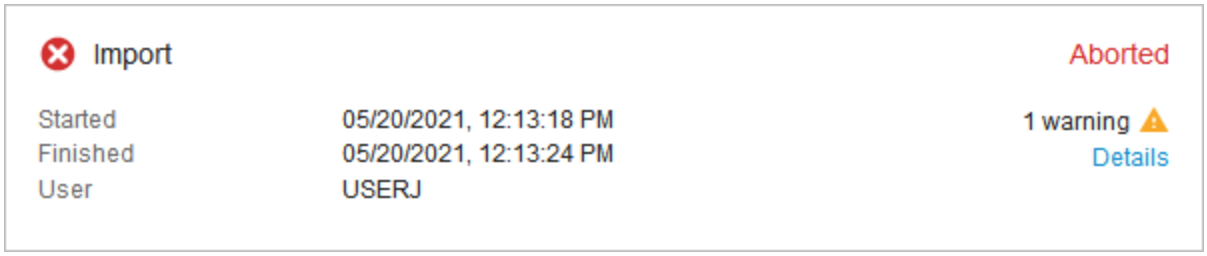
  Records were imported, but error-prone values from attributes, references, or data containers were not imported. Details of both warnings and errors can be reviewed in the importing BGP log. Records with errors can be downloaded in a file for review.



- **Failed** - the importing BGP failed to complete the importing process due to severe errors occurring above the records processing level. When the Import status is failed, no data is imported.



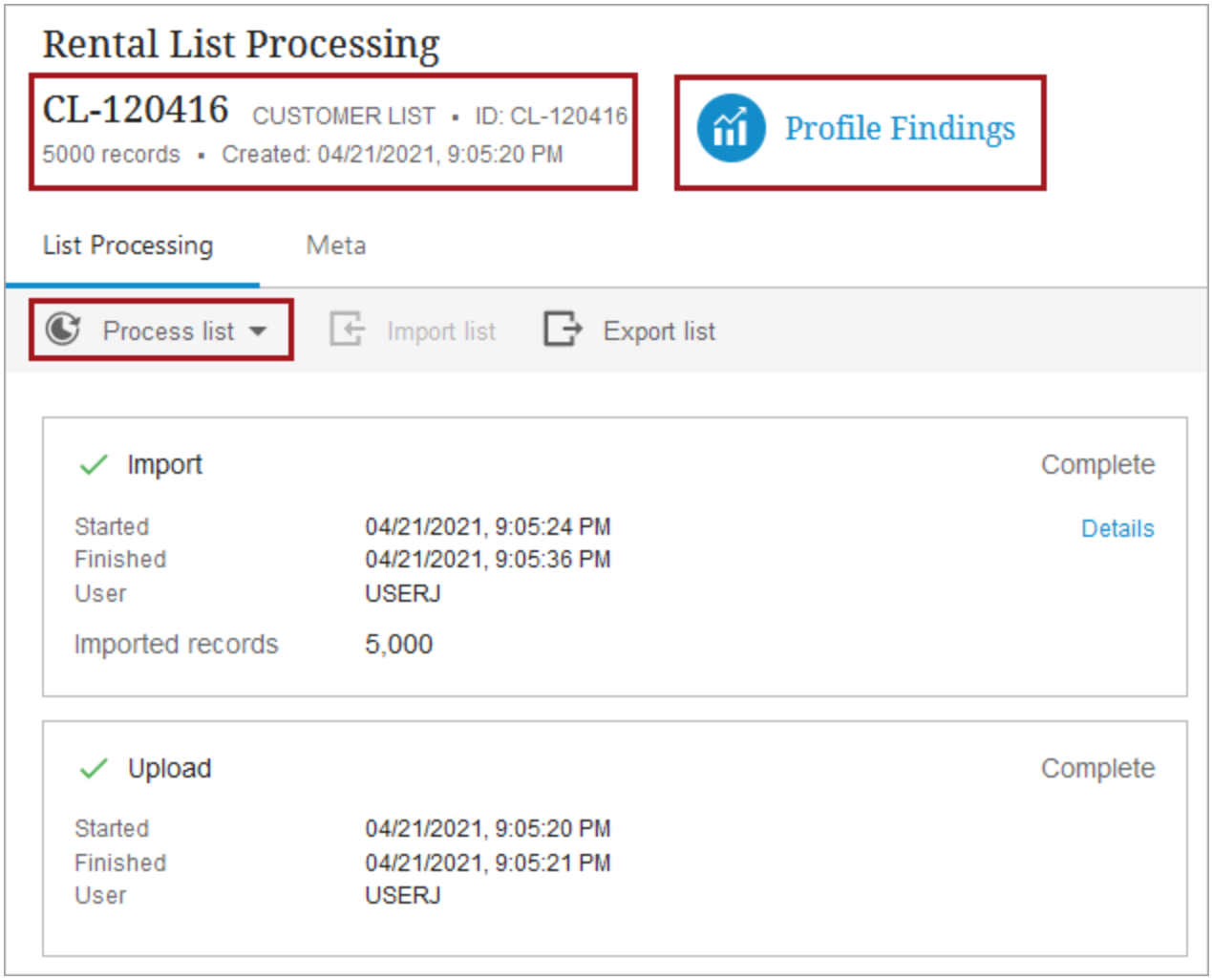
- **Aborted** - a user chose to abort the importing BGP in workbench by deleting the BGP while it was active. When the import is aborted, no data is imported.



Processing Lists

After importing a list (defined in the **Creating Lists** topic), users can:

- Review information about the current list via the **List Processing Summary Card**.
- Assess the data quality of the list via the **Profile Findings** link.
- Initiate a list process configuration by selecting it from the **Process List** dropdown. List Processing Configurations are created during the workbench setup, as defined in the **Configuring List Processing in Workbench** topic. The 'Process list' dropdown is enabled when the list is available for processing and is disabled when being processed.



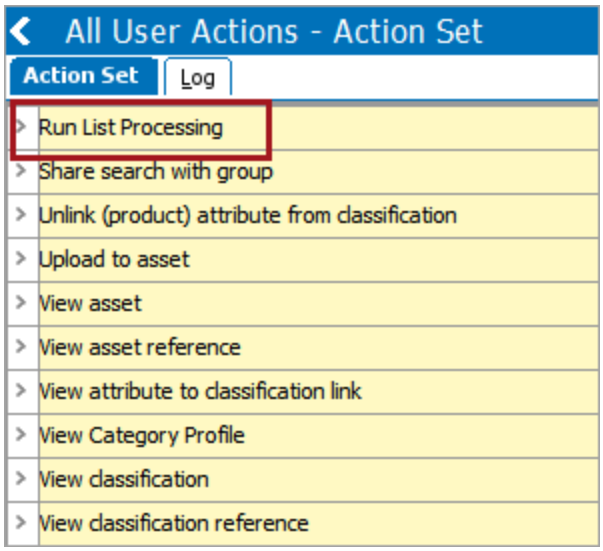
Refer to the **Processing Example** topic and the **Processing Example Including External Processing Operation** topic for an explanation of each step of this functionality.

After processing a list, continue by exporting the list as defined in the **Exporting a Processed List** topic.

Prerequisites

This topic assumes that users have already created the object types required for list processing, performed the required workbench configurations, and Web UI screen setup. For more information on the required setup for processing lists, refer to the **List Processing** topic.

To execute list processing, users must be part of a user group with the 'Run List Processing' user action. For information on adding user actions, refer to the **Maintaining Action** topic in the **System Setup** documentation.



List Processing Summary Card

The summary card is displayed at the top of the screen and shows basic information about the list (as shown in the image above):

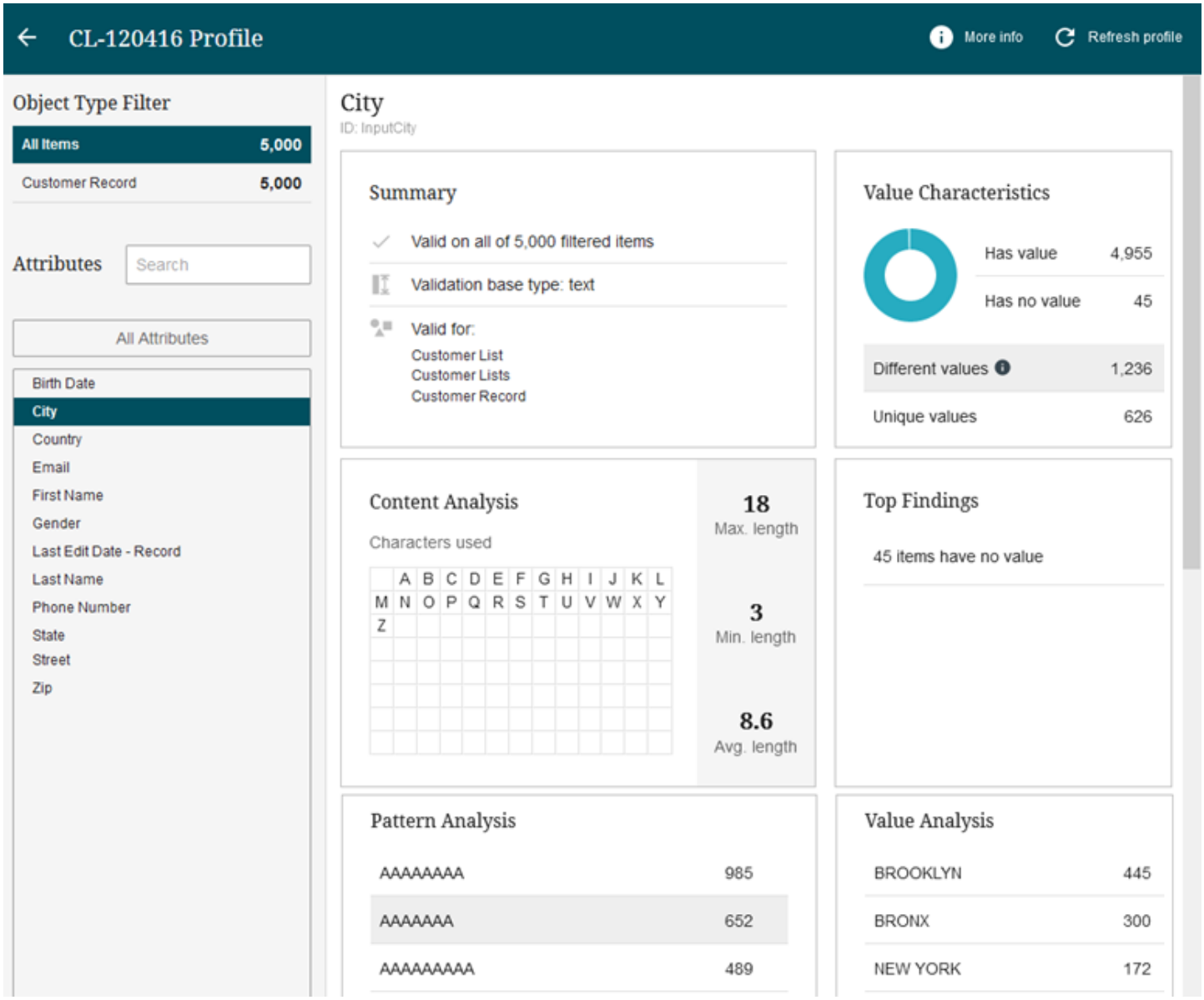
- Name of list
- List object type
- ID of list
- Current number of records in the list (will likely decrease when processing list with filtering and deduplication)
- Time of list creation

The information on this card cannot be modified. For more information, refer to the **Configuring List Processing in Web UI** topic.

Profile Findings

The 'Profile Findings' button displays a configured data profile screen. As a list is imported or processed, a new data profile is generated based on the default profile configuration setting on the object type of the list.

In this screen users can scrutinize the quality of the data in the list immediately after import and after every processing has updated the list data. For list object type data, attribute advanced search capabilities are disabled on the Data Profile Screen. Additionally, when refreshing the data profile for a list you cannot select a different profile configuration. For more information, refer to the **Data Profiling in Web UI** topic and **Profile Configuration** topic in the **Data Profiling** documentation.



Process List

The 'Process list' dropdown displays all list processing configurations that are valid for the object type of the list. For more information, refer to the **Configuring List Processing Workbench** topic in this documentation.

Processing a list is managed by a background process (BGP). Errors and warnings can occur during processing of the list and the list processing BGP can therefore complete in any of the following states for the following reasons.

Files used by list processing are compressed to reduce the disk space consumed, including:

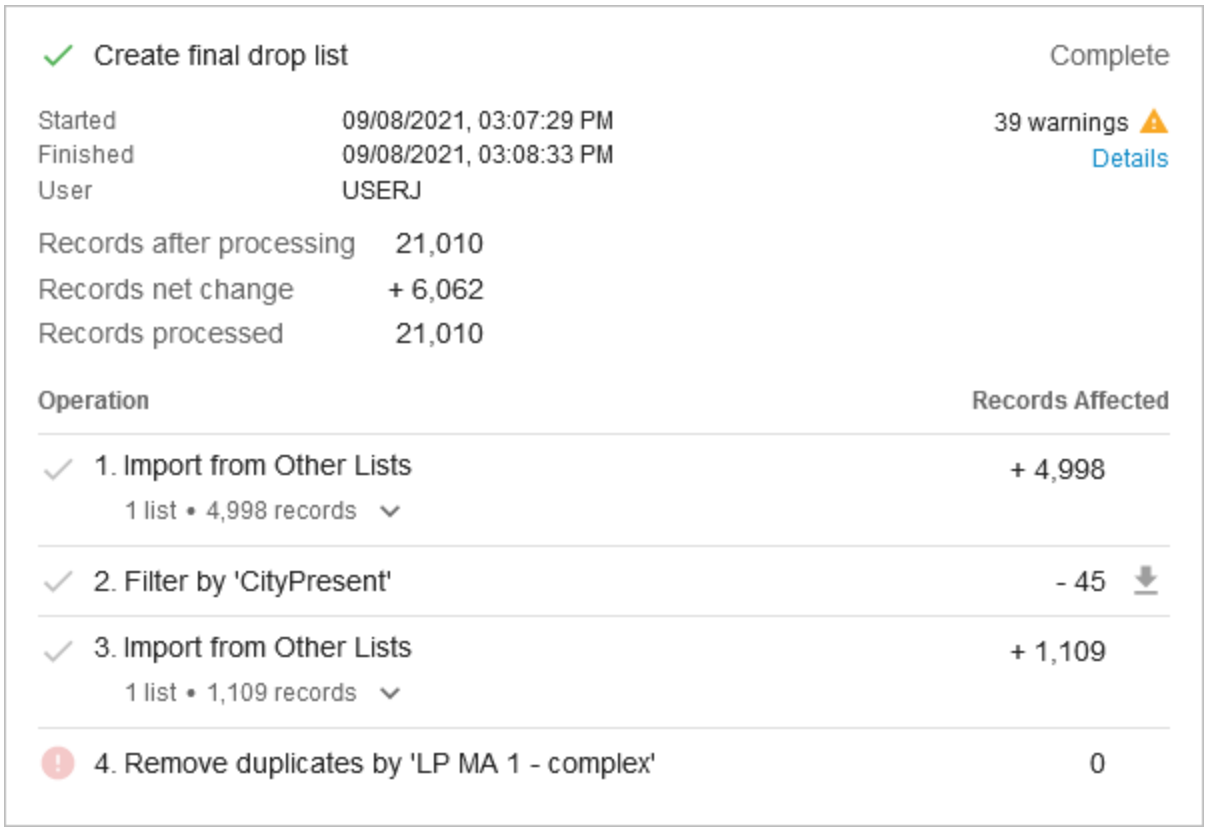
- internal list representation files, copies of uploaded files during import
- files containing records that failed during import or have been filtered out, files representing exported and imported lists during external processing, and exported list files

When using external processing, the Suspended status indicates that the list has not yet been received from the external processing service. For details, refer to the **Processing Example** topic and the **Processing Example Including External Processing Operation** topic.

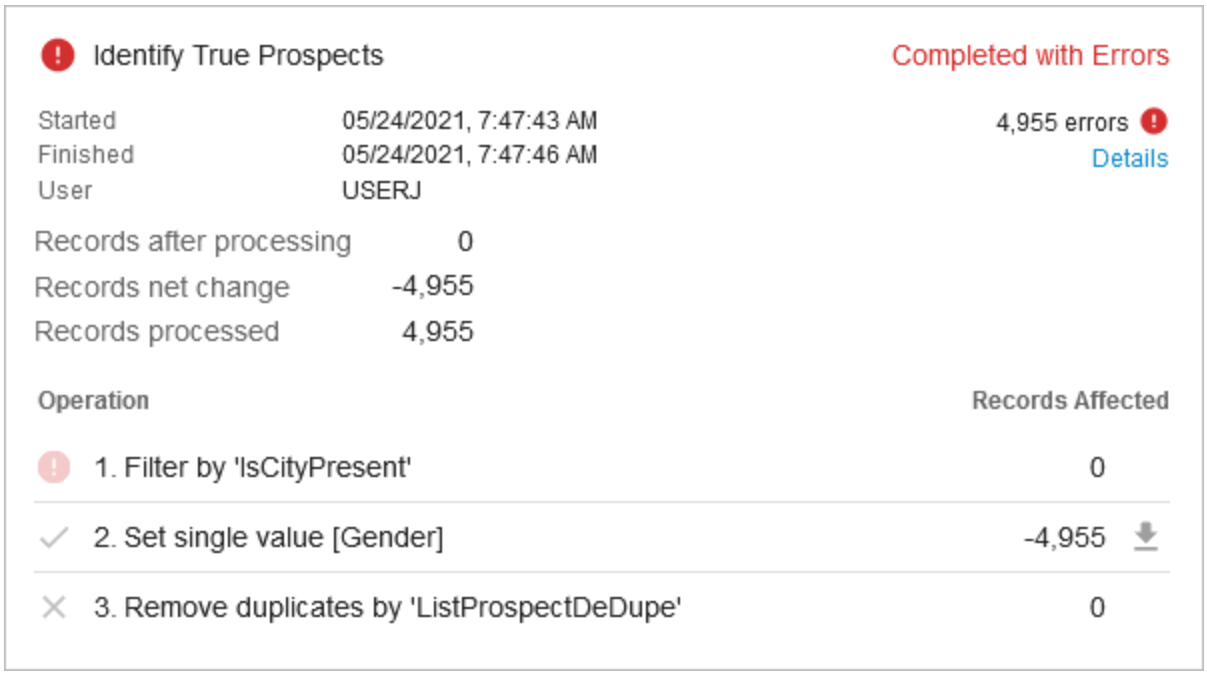
Processing BGP Statuses

Note: Some operations are executed in parallel to optimize performance, but all operations are applied in the configured order per record. Use the following case-sensitive sharedconfig.properties file parameter to set the number of parallel processes that can execute list processing (e.g., 20):
`BackgroundProcess.Queue.LIST_PROCESSING_QUEUE.Parallel=20`

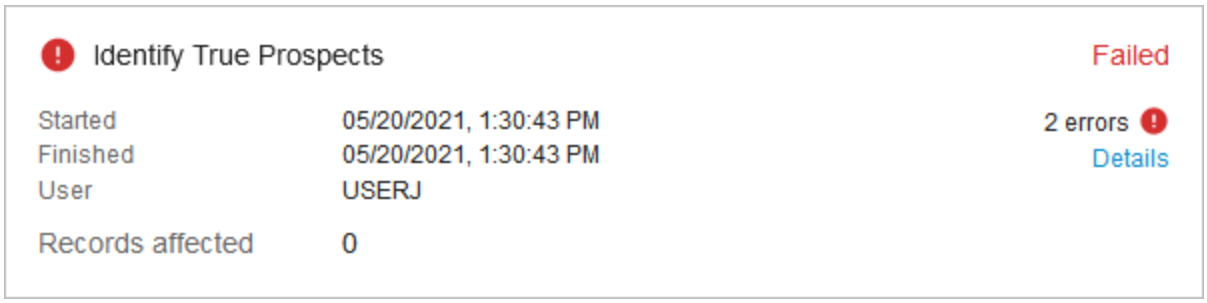
- **Complete** - All records were processed without any errors. Click the Details link to review the reported warnings.



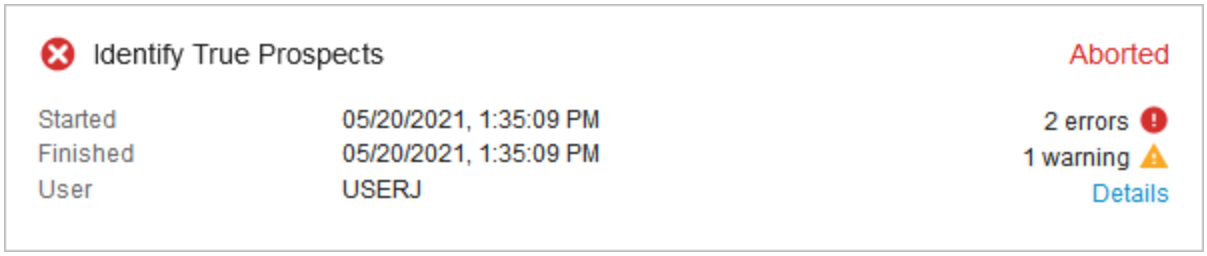
- **Complete with Errors** - One or more records failed while attempting to process it by one or more list operations. When an operation fails on a record, any update that operation performed on that record will not take effect. However, updates to that record and the results of other successful operations will still take effect, regardless if such other operations occur prior or after the failing operation. Click the 'Details' link to review both warnings and errors in the importing BGP log.



- **Failed** - the BGP fails to complete the list processing due to severe errors occurring above records processing level. When the BGP is Failed, no data is updated.

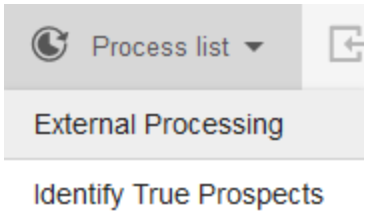


- **Aborted** - a user chose to cancel the BGP in workbench by deleting the BGP while it was active. When the BGP is aborted, no data is updated.

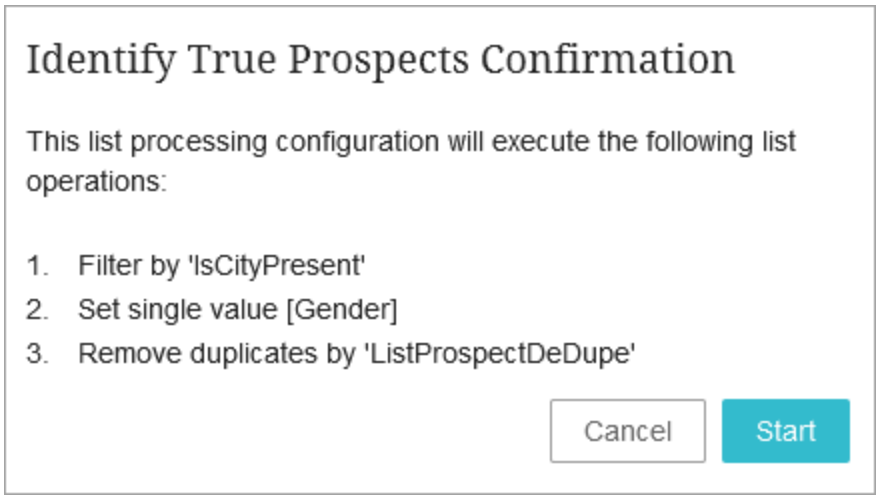


Processing Example

For this example, selecting the 'Identify True Prospects' configuration on the imported record list displays a summary of all the list operations that will be applied to the list and the order they will be applied when clicking the 'Start' button.



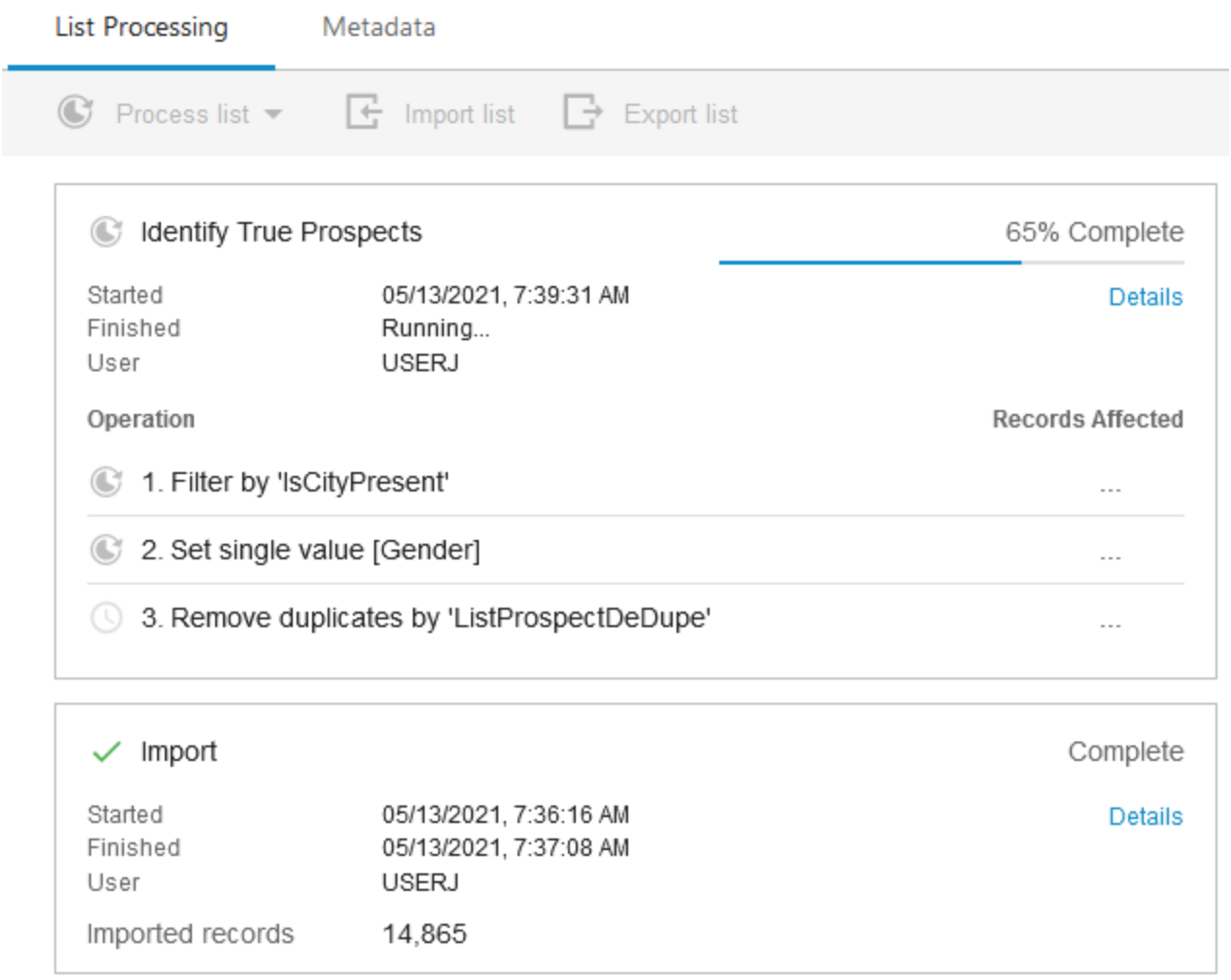
Note: While some operations are executed in parallel to optimize performance, each operation is applied in the configured order per record.



Running this list processing configuration will perform the following actions in this order:

- Removes all records that return the value of 'false' for the business condition 'CityPresent.'
- Updates gender attribute values using a bulk update operation.
- Deduplicates the full list based on a preconfigured matching algorithm named 'ListProspectDeDupe.'

Selecting the 'Start' button begins the process and a new process card titled 'Identify True Prospects' is presented with the progress of the list processing.

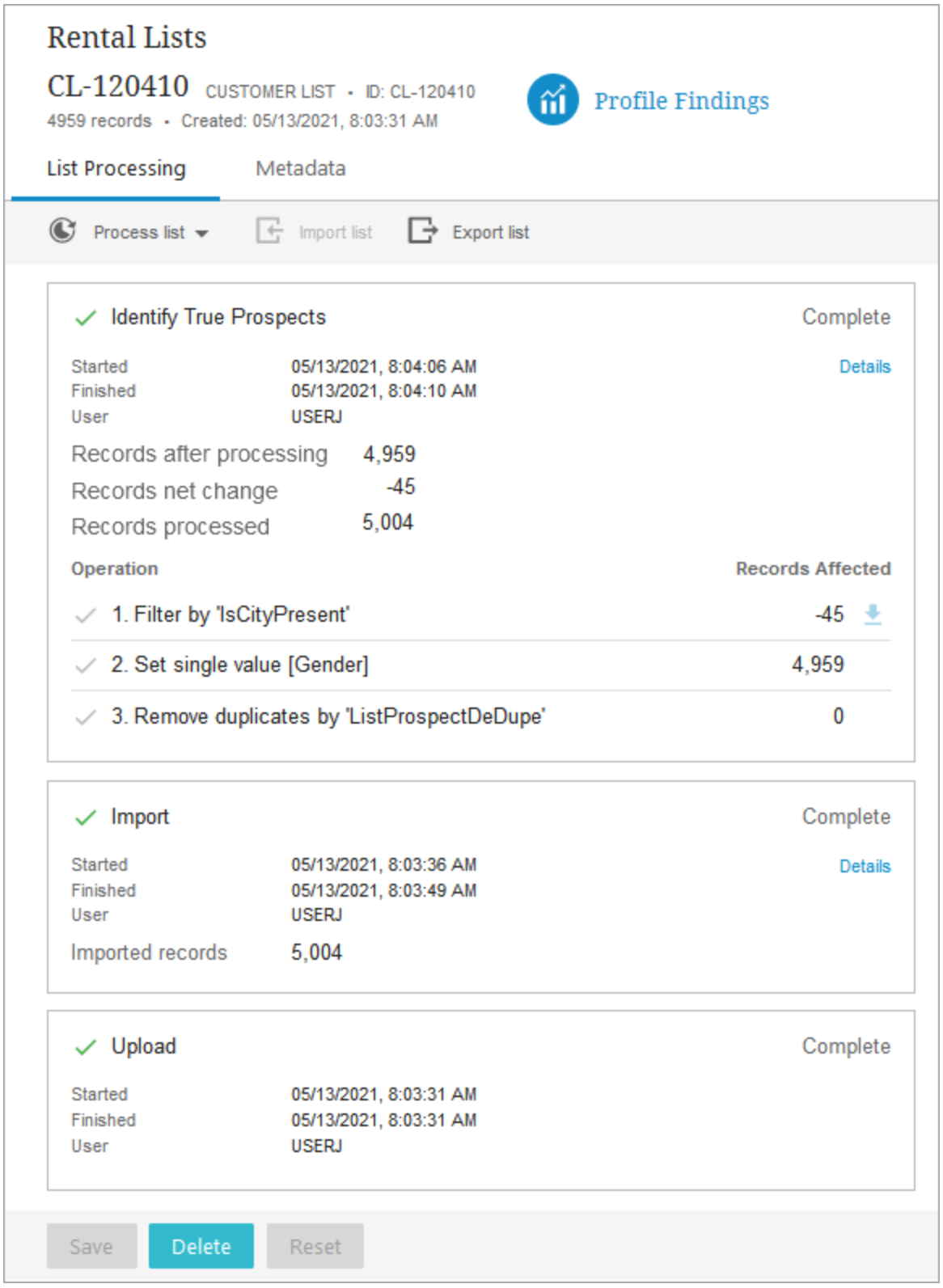


Note: While only one list processing background process can operate on a list at any time, users can process many lists simultaneously. If the displayed background process is deleted, the process card will disappear from the Web UI screen. However, despite the BGP and the card being deleted, the contents of the list remain in the system.

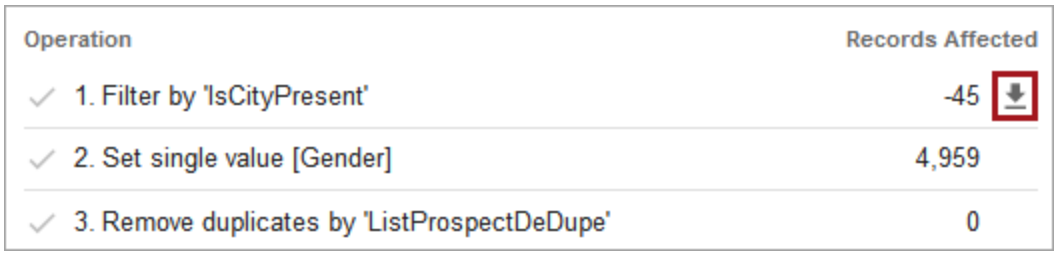
Each operation shows the number of records that were affected by the operation. Negative values are used for filtering and deduplication operations and indicate the number of records that were removed from the list.

In the image below, the list of 5,004 records has been processed as follows:

- Operation 1 removes 45 records as they were missing city values.
- Operation 2 sets the gender attribute value for the remaining 4,959 records.
- Operation 3 removes no records based no running the matching algorithm and considering records with the same last name and phone number as duplicates.
- The list has been reduced to 4,959 records, which is updated in the Summary Card.


Rental Lists
CL-120410 CUSTOMER LIST • ID: CL-120410
4959 records • Created: 05/13/2021, 8:03:31 AM
Profile Findings
List Processing
Metadata
Process list
Import list
Export list
Identify True Prospects
Complete
Started 05/13/2021, 8:04:06 AM
Finished 05/13/2021, 8:04:10 AM
User USERJ
Details
Records after processing 4,959
Records net change -45
Records processed 5,004
Operation
Records Affected
1. Filter by 'IsCityPresent' -45
2. Set single value [Gender] 4,959
3. Remove duplicates by 'ListProspectDeDupe' 0
Import
Complete
Started 05/13/2021, 8:03:36 AM
Finished 05/13/2021, 8:03:49 AM
User USERJ
Details
Imported records 5,004
Upload
Complete
Started 05/13/2021, 8:03:31 AM
Finished 05/13/2021, 8:03:31 AM
User USERJ
Save
Delete
Reset

If records are removed by filter operations, click the download icon ( ) on an operation row to view a list of the removed records.

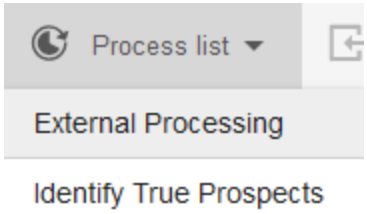


Processing Example Including External Processing Operation

When using external processing, the Suspended status indicates that the list has not yet been received from the external processing service. The list remains in the Suspended status until the poller finds the expected file in the inbound folder or a user clicks the 'Skip operation' link on the Process Report.

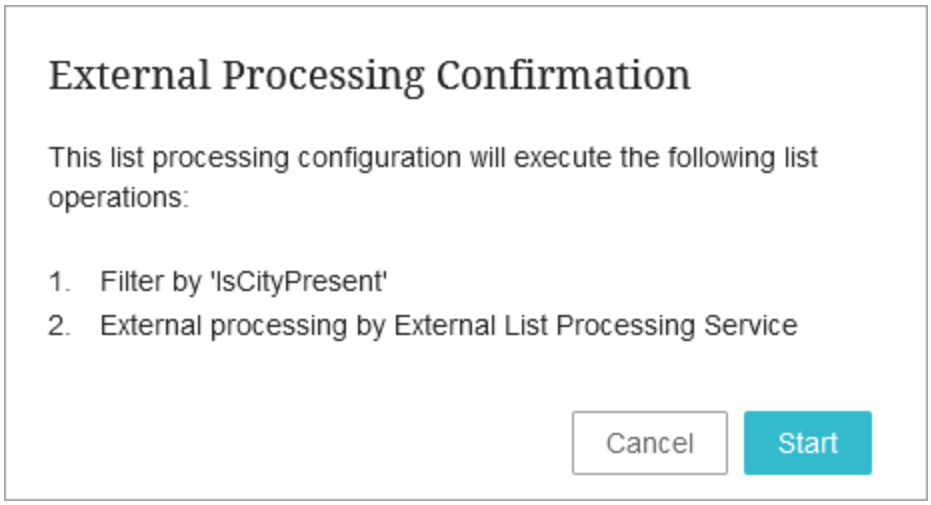
Important: The generated file name starts with a 'message ID' in the form of the BGP number and a hash sign (#). For example, the message ID 'BGP_416690#' is the first part of the output file named: BGP_416690#csv.csv. Files received from the external service must also include this same message ID as the first characters of the processed file.

For this example, selecting the 'External Processing' configuration on the imported record list displays a summary of all the list operations that will be applied to the list and the order in which they will be applied when clicking the 'Start' button.



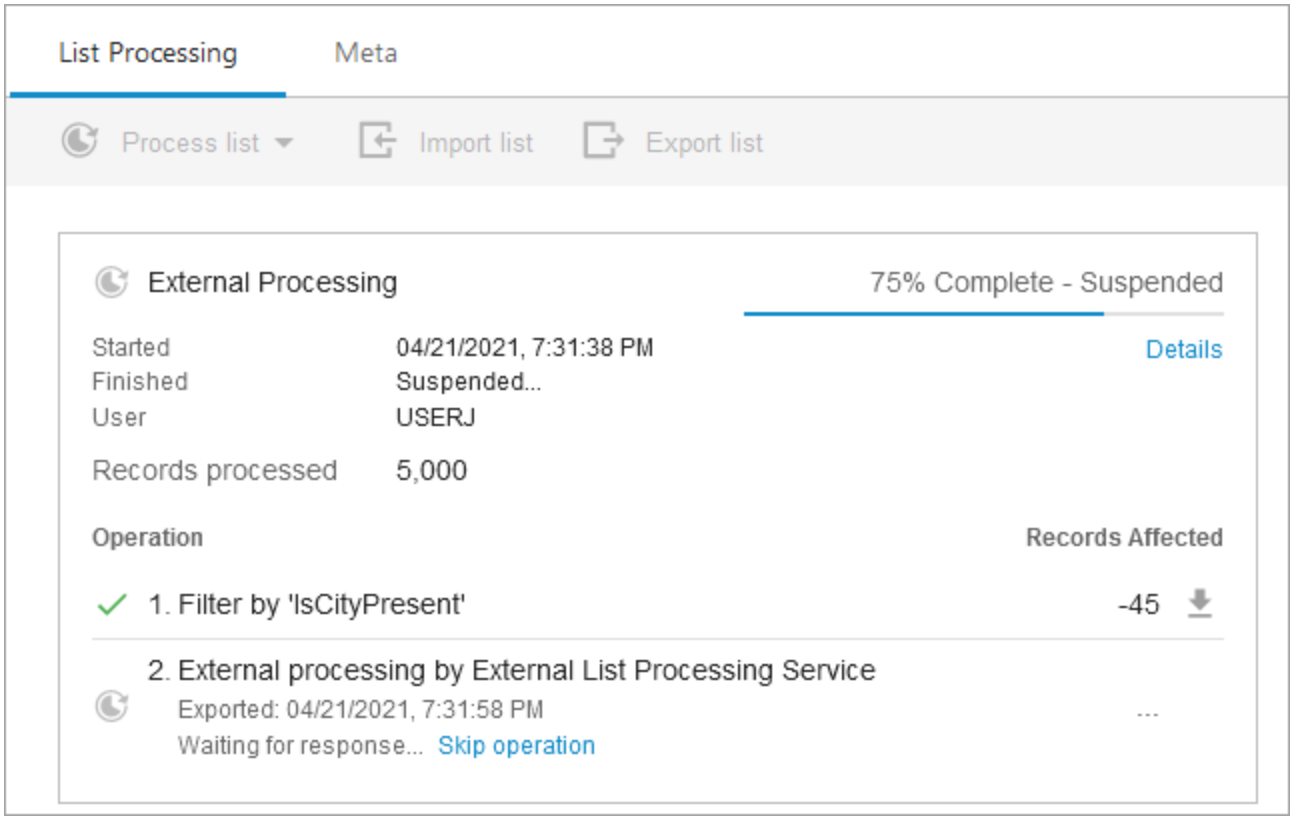
Running the 'External Processing' configuration will perform the following list operations in this order:

- Remove all records that return the value of 'false' for the business condition 'CityPresent.'
- Initiate the entire external processing operation.



Clicking the 'Start' button begins the process and a new 'External Processing' process card is displayed with the progress of the list processing.

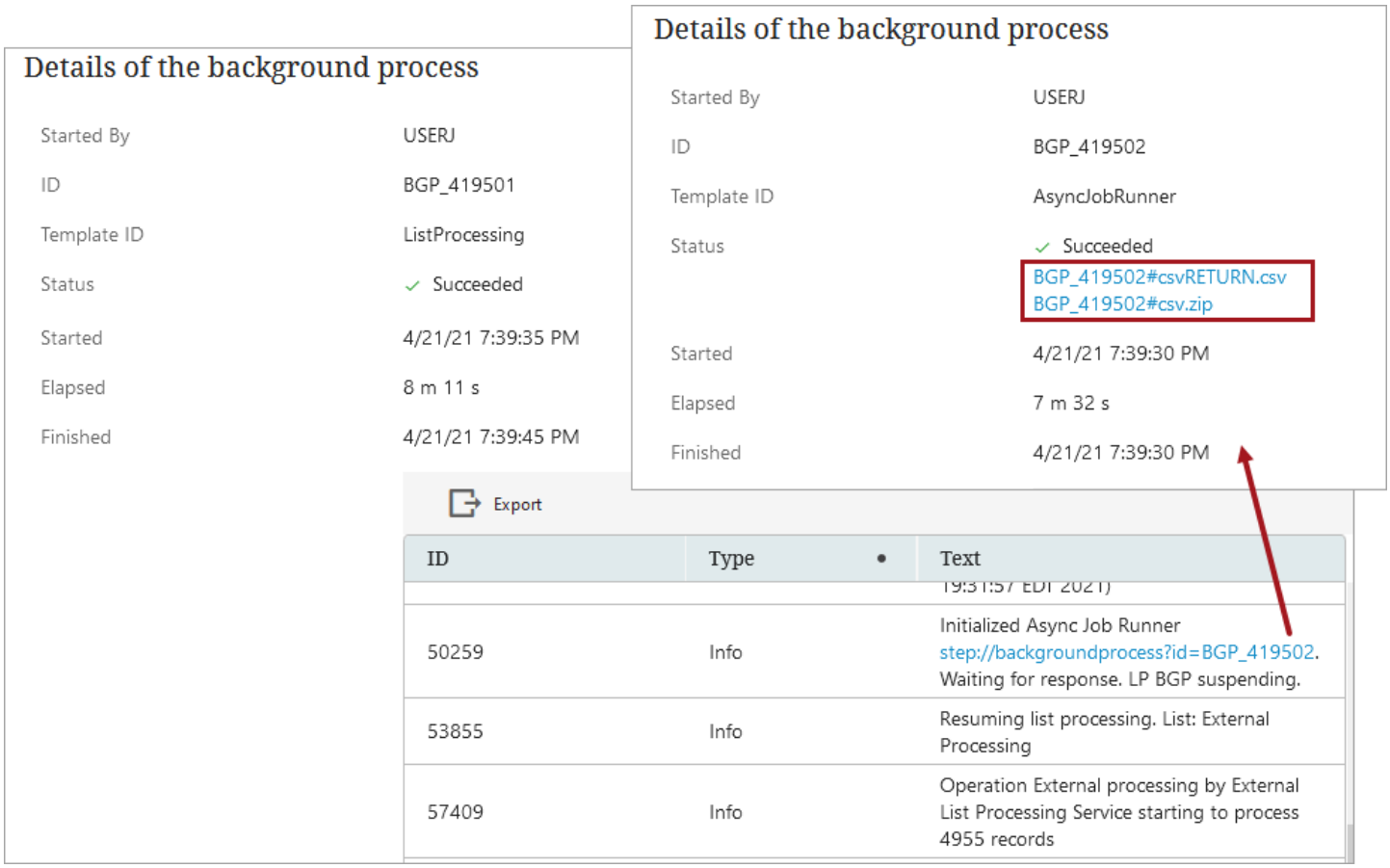
The Process Report for the external processing status goes from Waiting, to Processing, to Suspended when the export file has been generated and saved to the inbound folder configured in the ASC configuration. The exported date and timestamp indicate when the file was made available to the external service.



A status is shown for the process card and also for the operations on the card. While the process is active, the operation status symbols are in color, once the process is complete, the symbols are gray.

- ✓ successful
- waiting
- ✕ canceled

The **Details** link displays the BGP details including the status and BGP number. Additionally, in a BGP details report, scroll down to find the 'Initialized Async Job Runner' entry and click the ASC BGP link to review the file exported to the 'Out folder' and the file imported from the 'In folder' (if the process is complete).



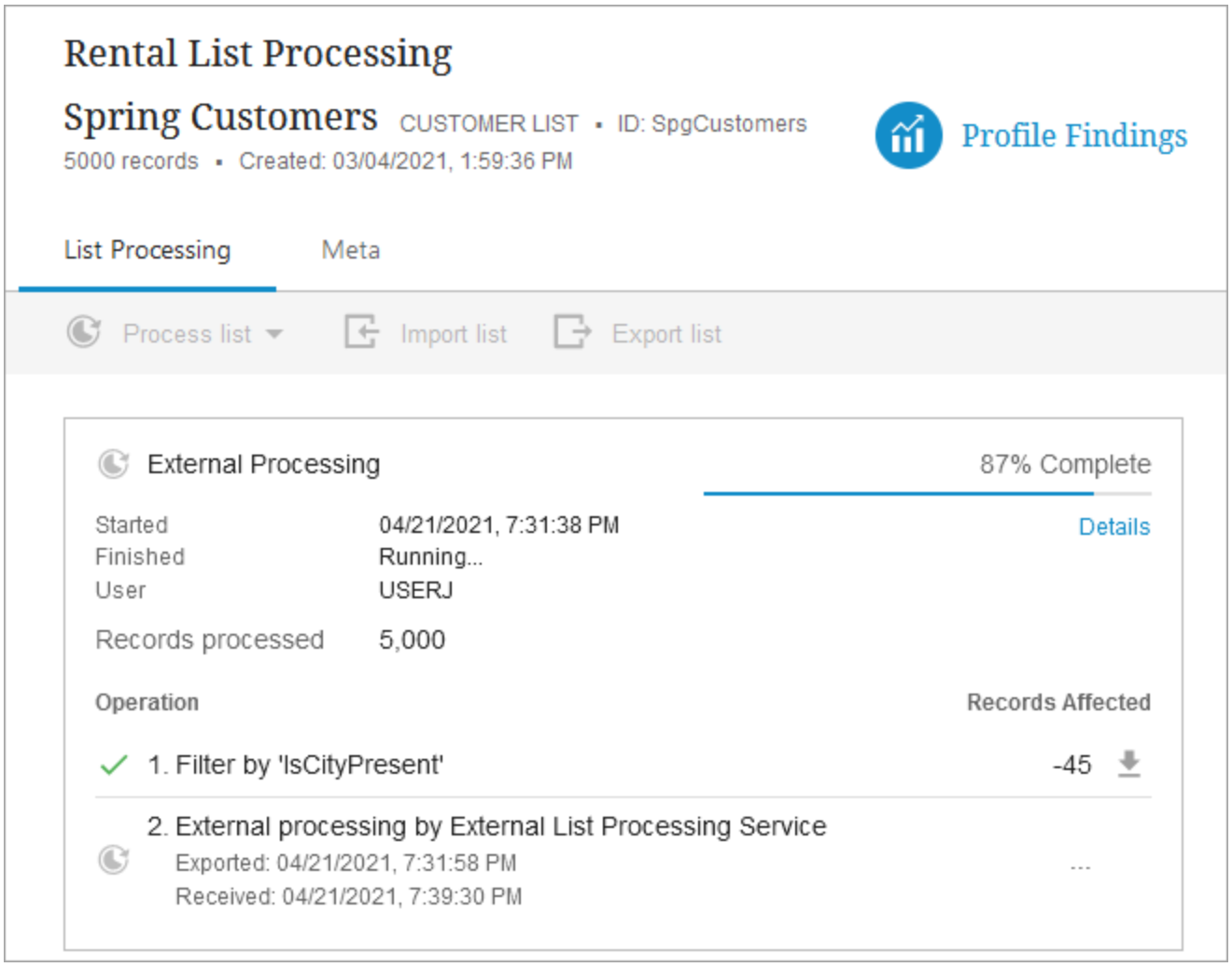
The **Records Affected** column shows the number of records impacted by the operation. For the Filter operation, the **download** button ( ) allows you to review those records. In the example above, a zipped CSV file is downloaded with the 45 filtered records.

The **Skip operation** link allows the user to skip waiting for the external service to process and return the list. This is useful when an external process should not have been sent or errors with the external service cause a failure. A confirmation dialog displays before skipping the operation. Stopping this operation resumes the processing and either continues with the next operation or moves to Complete.

Important: An external processing report can remain in the Suspended status indefinitely if no file with the correct message ID is added to the 'In folder' directory. The list processing BGP is automatically updated to a Waiting status when a file with the correct message ID is found in the 'In folder' directory on the application server. The polling interval is determined by the ASC configuration. The list processing BGP will typically go from its waiting state to processing after a short while.

Files modified and returned by the external processing service can use any STEP-supported format, but file compression is optional.

The ASC polls the 'In folder' according to its schedule, and when a file is found the processing resumes in Web UI.



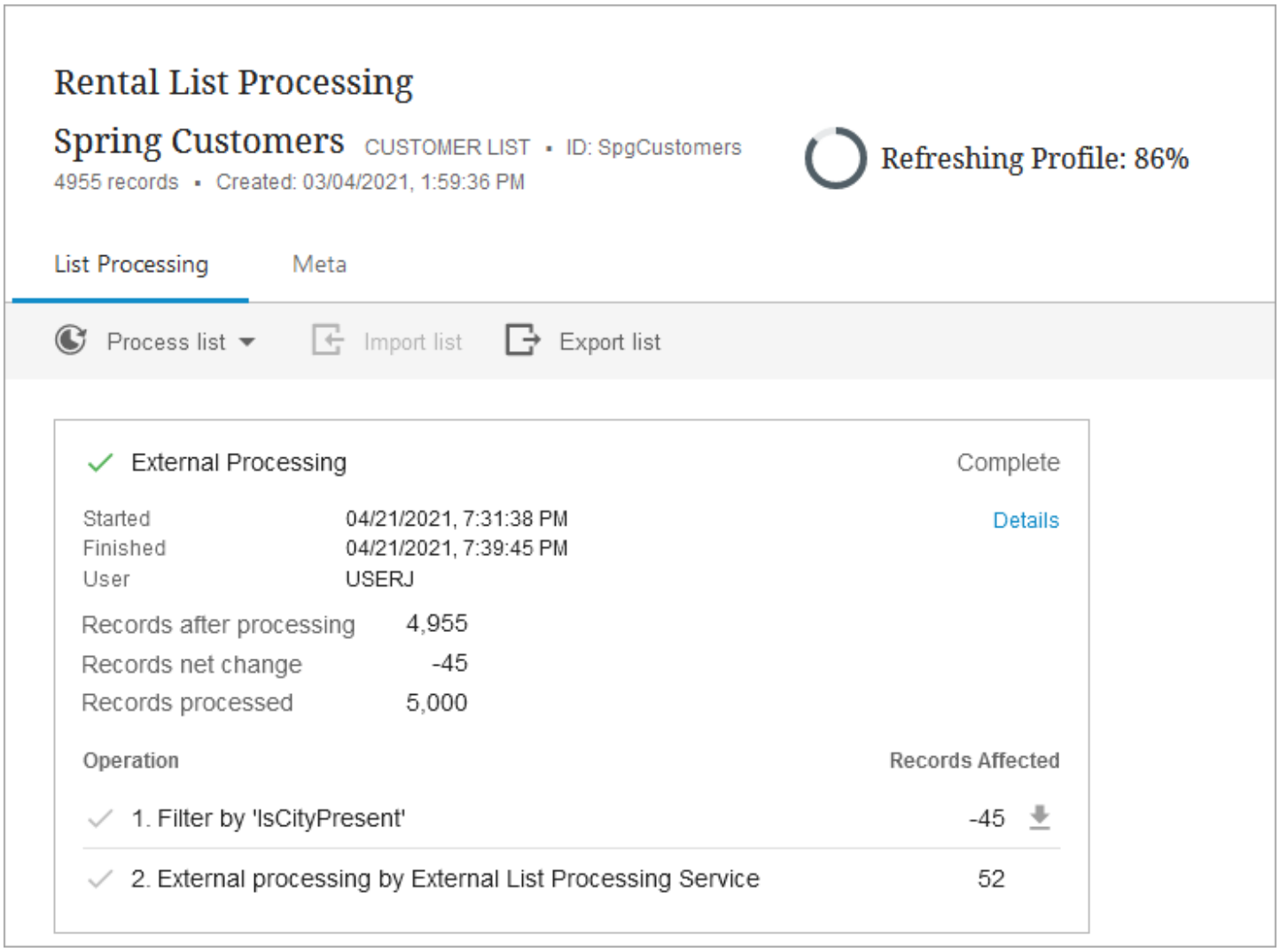
The **Started** date and time show when the List Processing Configuration began.

The **Finished** parameter can show a status (such as Waiting or Running) and is updated with a date and time (shown below) when all processing is complete.

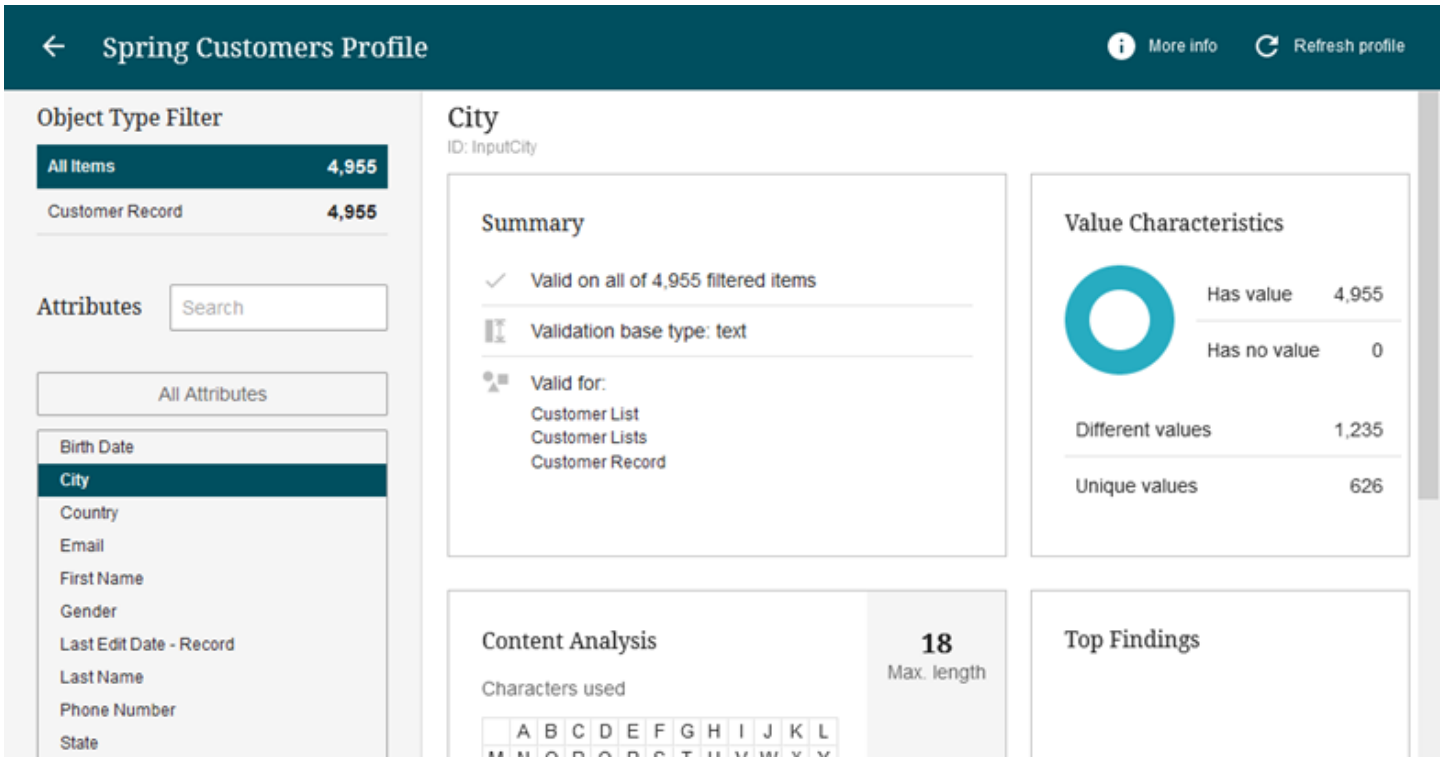
The **Exported** date and time show when the file was added to the 'Out folder' identified in the ASC.

The **Received** date and time show when a file matching the message ID is found in the 'In folder' identified in the ASC.

The **Profile Findings** are refreshed when the processing is complete (shown below).



Click the Profile Findings button ( ) to display the profiling information for the list. For more information on profiles, refer to the **Data Profiling** topic.


Spring Customers Profile
More info
Refresh profile
Object Type Filter
All Items 4,955
Customer Record 4,955
Attributes
Search
All Attributes
Birth Date
City
Country
Email
First Name
Gender
Last Edit Date - Record
Last Name
Phone Number
State
City
ID: InputCity
Summary
Valid on all of 4,955 filtered items
Validation base type: text
Valid for:
Customer List
Customer Lists
Customer Record
Value Characteristics
Has value 4,955
Has no value 0
Different values 1,235
Unique values 626
Content Analysis
Characters used
A B C D E F G H I J K L
18
Max. length
Top Findings

Exporting a Processed List

Once the desired processing is performed on the imported list, users can export the list to share the modified list with downstream teams or applications.

Saved Export Configuration for Lists

The list export feature leverages the STEP Export Manager and uses a saved export configuration to determine the data included in the exported file. For more information, refer to the **Creating a Data Export** topic and the related topics shown below, which are all included in the **Export Manager** section of the **Data Exchange** documentation.

Important: In the Export Manager wizard, only the steps and parameters listed below are considered when exporting entities. All other parameters are ignored.

Verify the export configuration for lists includes the following required elements.

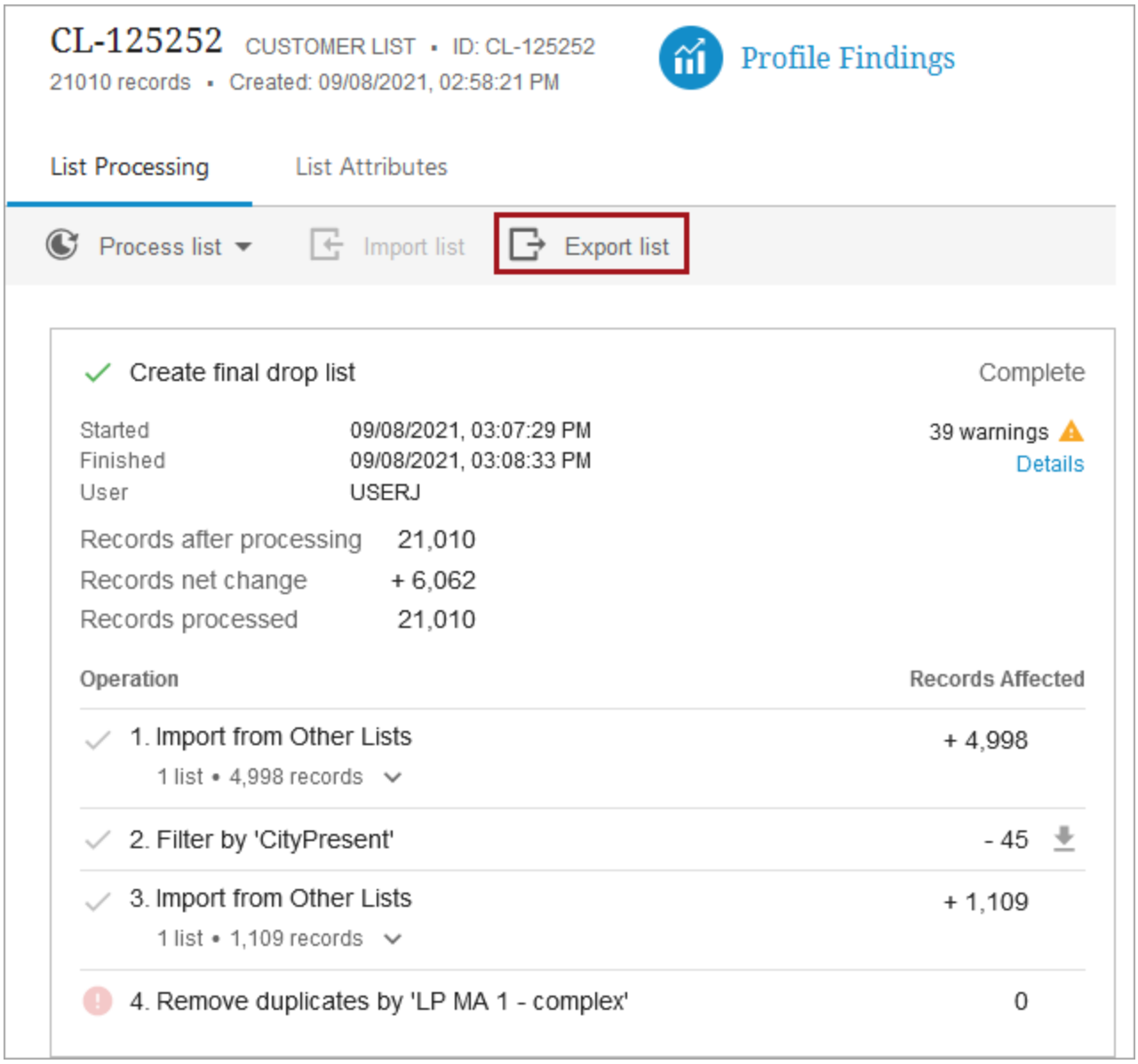
- **Select Objects** step, **Export** parameter: required to be set to Entity. For details, refer to the **Export Manager - Select Objects** topic.
- **Select Objects** step, **Include Object Types** parameter: only selected object types are included in the exported list. For details, refer to the **Export Manager - Select Objects** topic.
- **Select Format** step: all formats in the dropdown are supported. For details, refer to the **Export Manager - Select Format** topic.
- **Map Data** step: add supported data source mappings as required, including <Name>, <Parent ID>, and <Object Type Name>, All Attributes, Entity References (references to master data, not to other records in the list), and Insert Referenced Objects. For details, refer to the **Outbound Map Data - Data Source** topic.
- **Advanced** step: set these parameters as needed: Resolve Inline References, Include Calculated Attribute Values, and Context.

  The Context parameter runs the export from the specified context, for example, so attributes names will be translated to the language of the selected context. For details, refer to the **Export Manager - Advanced** topic.
- **Select Delivery Method** step: only the File delivery method is supported, other selections are ignored when exporting list entities.
- Click the **Finish** button on the Export Manager to display the Save Export Configuration dialog. Check the Save Options checkbox and set a Save to location to display it on the Export List dropdown defined in the next section. For details, refer to the **Running a Data Export** topic.

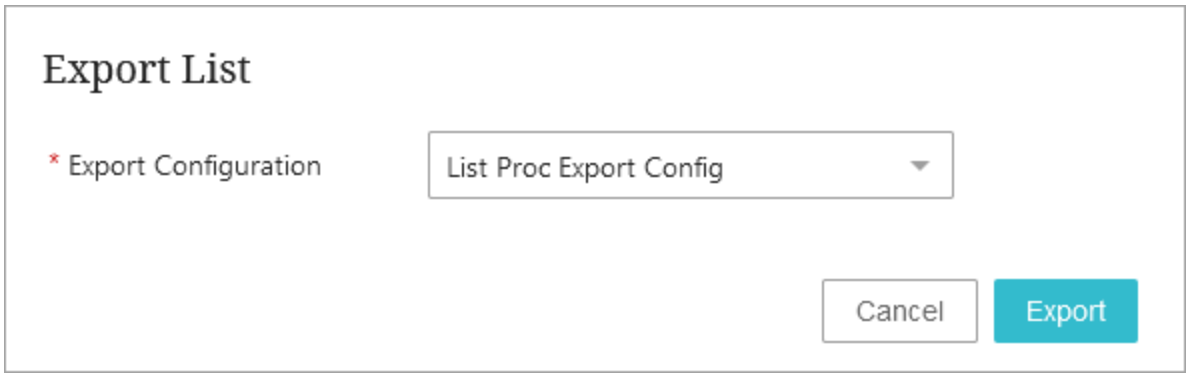
Export a List

To export a processed list:

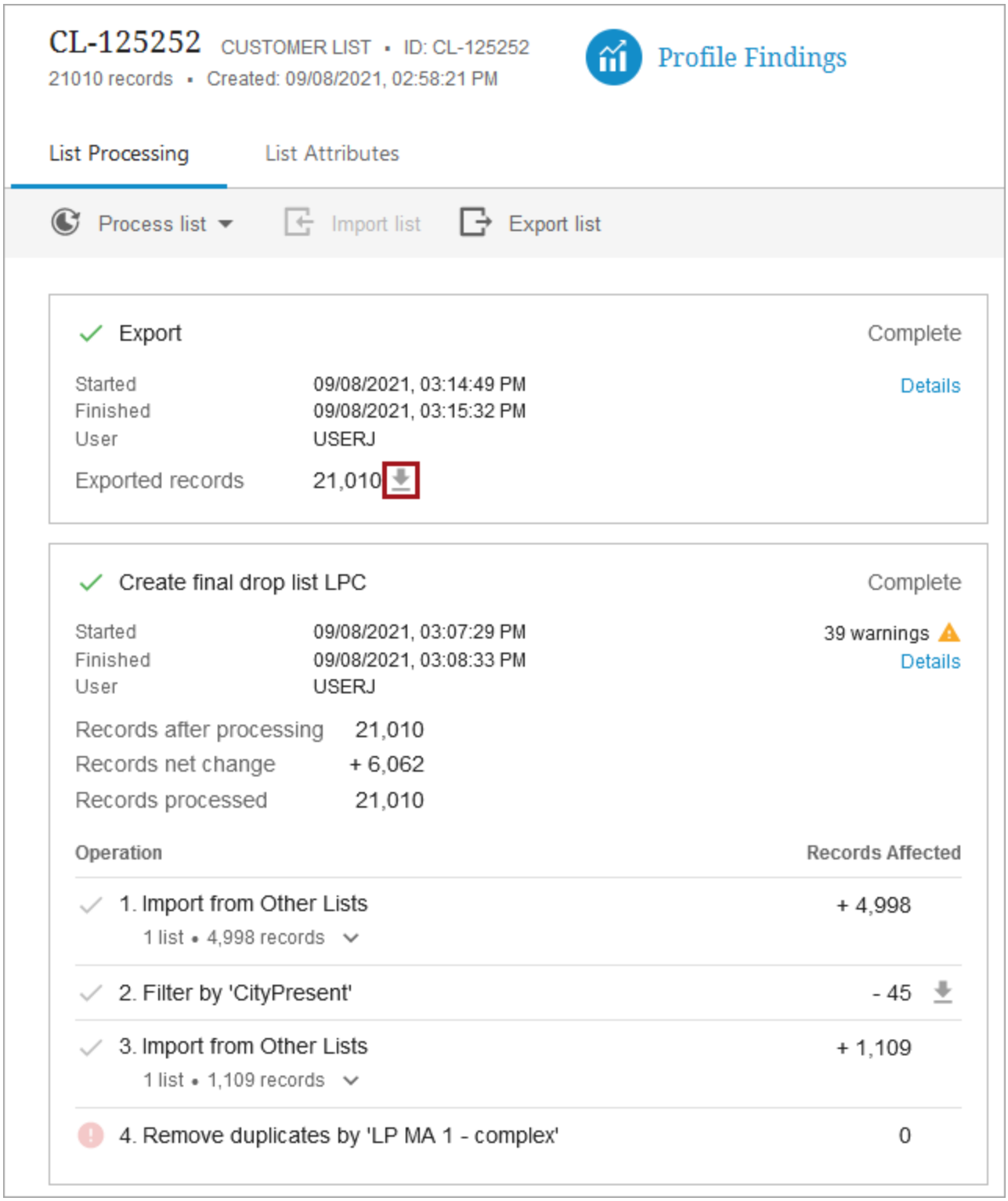
1. From the list processing screen, click the **Export list** button to display the 'Export List' dialog.



2. Select a saved export configuration that is compatible with the type of the processed list and an Export process card is displayed on the list processing screen.



3. When the export process shows a status of Complete, click the download icon ( ) to download a copy of the processed records list. Exporting list is handled by a BGP and process details can be found in the BGP log including any errors and warnings that occurred.


CL-125252 CUSTOMER LIST • ID: CL-125252
21010 records • Created: 09/08/2021, 02:58:21 PM
Profile Findings
List Processing
List Attributes
Process list
Import list
Export list
Export
Complete
Started 09/08/2021, 03:14:49 PM
Finished 09/08/2021, 03:15:32 PM
User USERJ
Details
Exported records 21,010
Create final drop list LPC
Complete
Started 09/08/2021, 03:07:29 PM
Finished 09/08/2021, 03:08:33 PM
User USERJ
39 warnings
Details
Records after processing 21,010
Records net change + 6,062
Records processed 21,010
Operation
Records Affected
1. Import from Other Lists
1 list • 4,998 records
+ 4,998
2. Filter by 'CityPresent'
- 45
3. Import from Other Lists
1 list • 1,109 records
+ 1,109
4. Remove duplicates by 'LP MA 1 - complex'
0