IMPORT EXPORT TOOL

REQUIREMENTS SPECIFICATION

Author: Fausto Marasco

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Version Control

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1	Initial Release	FM	25 Oct 2011
1.01	Added text on File Manager	FM	27 Oct 2011
1.02	Added text on Table Definition	FM	16 Apr 2012
1.03	Added further Text	FM	29 May 2012
1.04	Minor modifications and comments	EP	30 May 2012
1.05	Further clarification and amendments	FM	30 Jul 2012

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1 OVERVIEW

The PCP system requires access for customers to be able to import and export data from the system from the internet. Aspect provides an Import/Export tool for this purpose however its functionality is not complete and it is not suitable to be used from the internet.

The requirements are:

- Client side fully browser based. Must support at least IE7 and above, Chrome & Firefox.
- No client installable objects allowed.
- All content should be dynamic, to support globalisation
- HTTP/HTTPS upload and download facility
- Ability to manage Data Definitions
- Validate rules against Data Definition
- Ability to import, export, download, and view progress of imports and exports
- Imports and Exports should be Asynchronous, as files can be very large, and multiple imports may be performed simultaneously.
- Helpful feedback messages

The application will operate in the following broad manner.

- Users can define database structures and create database tables based on the list definitions they have created in their own dedicated tenant database.
- Users will upload a file to a dedicated file store location for that tenant.
- Once the file has been uploaded to the file store, the contents of the file can be loaded into a database table that they have been created.
- Users can also export data from a database table into a text file for downloading back into their own environment using the same list definition when the data was imported into the table.

2 APPLICATION OVERVIEW

The Import / Export tool consists of several modules. Each module is represented by an individual selection in a tabbed list. On selection of a tab, a ribbon bar is displayed which contains the options relevant for that module.

File Manager	Controls the uploading and downloading of files from the users PC or server into the import / export module.
Table Definitions	Allows users to create and manage the definition of data base tables
Import	Enables files that have already been uploaded to be imported into the database
Export	Enables database tables to be exported to files
Exclusion	Allows the user to import / export data into the exclusion table
Lists	Enables users to manage the lists on the platform
Time Zone	Enables management of the time zone table.

3 STYLE CONSIDERATIONS

3.1 WINDOW SIZE

Design for a 1024 x 768 screen.
Accommodate a typical IE browser window with standard tool bars activated.

3.2 HEADER BAR

Refer to the style guide for the definition of the header bar. This includes following components.

- Logo – located on the left of the header bar
- Header Bar graphic - placed at the top of the window.
- Header title – positioned on the left hand side of the header bar.

3.3 ICON RIBBON BAR

Refer to the style guide for the definition of the icon ribbon bar.

3.4 GRID LAYOUT

Refer to the style guide for the definition of the grid.

3.5 POP UP WINDOW LAYOUT

Refer to the style guide for the definition of pop-up windows. The definition includes the specification of:

- Borders
- Margins
- Buttons sizes and location

4 MULTI TENANCY RULES

This application is to be developed as a multi tenant application. This means that users from several tenancies will use the software to access their data from a common database.

The following rules must be observed by all parts of the application.

4.1 DATA ISOLATION RULE

Users from one tenancy must never be able to access, view, edit or delete data or files that belong to another tenant.

4.2 MANDATORY TENANCY KEY ON ALL SEARCHES

In all queries performed on configuration or storage tables, a tenant key must be included the query.

All tenants must only be able to see records that are explicitly identified as belonging to their tenant.

4.3 MICRO TENANCY IDENTIFIER

There are some fields that will also include a micro tenancy identifier. This is a 5 character prefix placed at the start of some fields. The first four characters represent the tenant id and the fifth character is an underscore.

The micro tenancy identifier is used to retain backward compatibility to the Aspect environment.

5 FILE MANAGER TAB

The file manager module is responsible for uploading files into a dedicated file store area which will be accessible via an FTP server.

5.1 FILE MANAGER GRID

On entry to the File Manager tab, the grid is refreshed with all the files that are found in the dedicated file store for the tenant. The location of this file store is provided by the parameter **`IEFileStoreLocation`** which is sourced from the tenant configuration settings database.

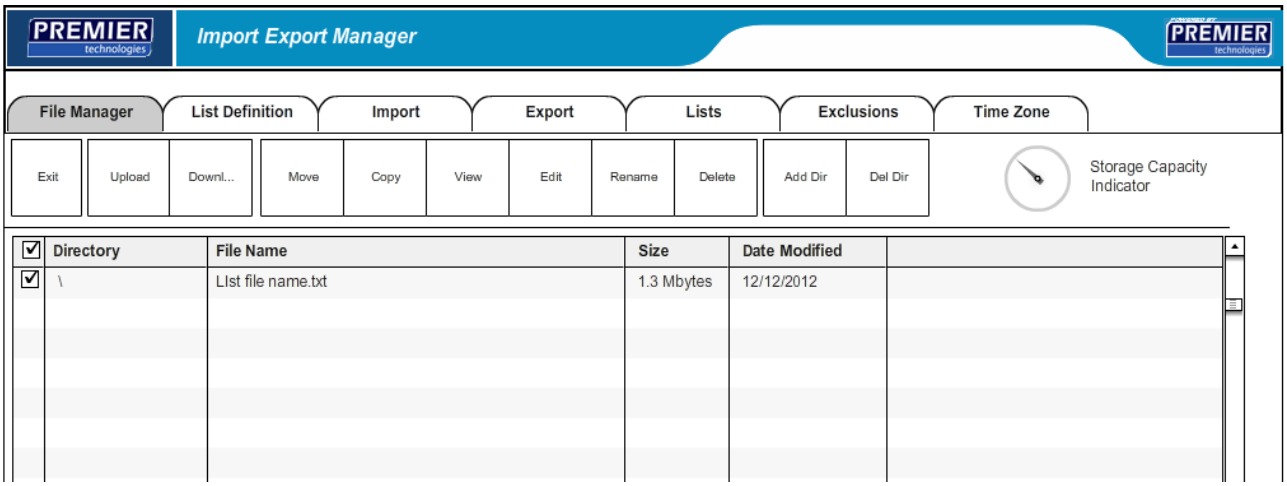
The file manager module will display all the files located in the tenant's file store in a grid. Users will be able to select one or more rows of the grid depending on the function.

The columns in the grid are as follows from left to right.

Check box	Used to select a row.
File name	The name of the file.
File Size	The size of the file.
Date Modified	The date stamp of the file.

Space for a vertical scroll bar is to be provisioned in the screen layout regardless of whether it is required.

5.2 FILE MANAGER TAB AND RIBBON



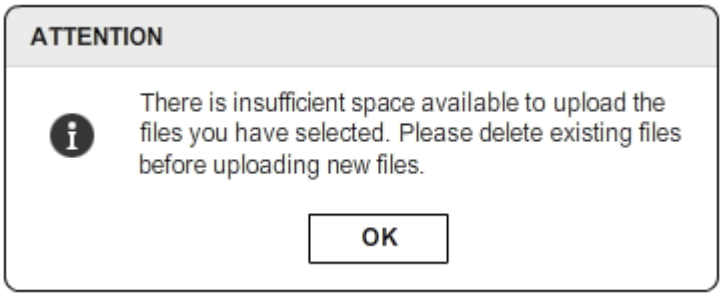
5.2.1 EXIT

The exit button returns the user to the main menu

5.2.2 UPLOAD

The upload function will prompt the user with a dialog box to specify a file located on their network and uploaded it to their dedicated file store using HTTP protocol. The capability to upload multiple files at a time is advantageous.

Before uploading the files a check should be made to ensure that there is sufficient space in the tenant's allocated directory as specified by the **`IEMaxFileStoreSize`** parameter. If there is insufficient space to upload the selected files, a pop up warning should be presented with the following message



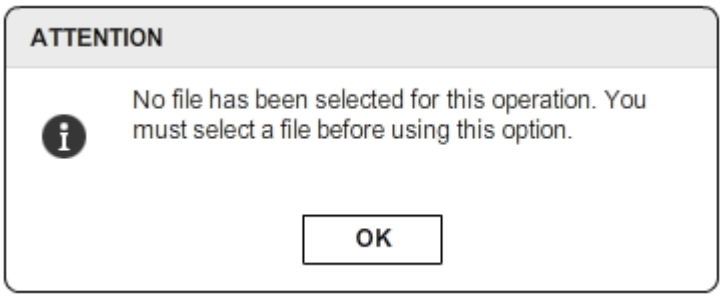
As part of the upload manager, a check should be made whether files being uploaded have the same name as existing files in the target directory. If they do, the user should be prompted to either rename the files or decide whether they want to over write the existing files. This should occur for each file where there is a conflict with the file names.

5.2.3 DOWNLOAD

The download function will allow a user to download the files that have been selected from their dedicated file store and save it to a location specified on their local PC. The file location will be specified through a pop up dialog box and the file transfer will be performed using HTTP protocol.

Users can select multiple rows to indicate that they want to download multiple files to their local machine.

If no files have been selected when this operation is chosen a pop up message is displayed with the following message.



As part of the download manager, a check should be made whether files being downloaded have the same name as existing files in the target directory. If they do, the user should be prompted to either rename the files or decide whether they want to over write the existing files.

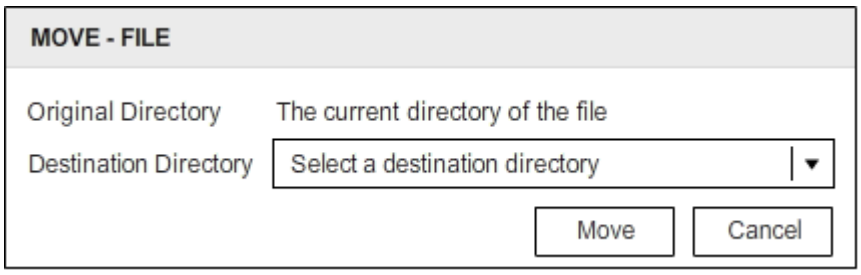
5.2.4 MOVE

This operation allows users to move files from one directory to another. Files can be moved between the root directory and any of the sub directories.

To move a file, the user must first select the file to be moved. If no files have been selected when this operation is chosen a pop up message is displayed with the following message.

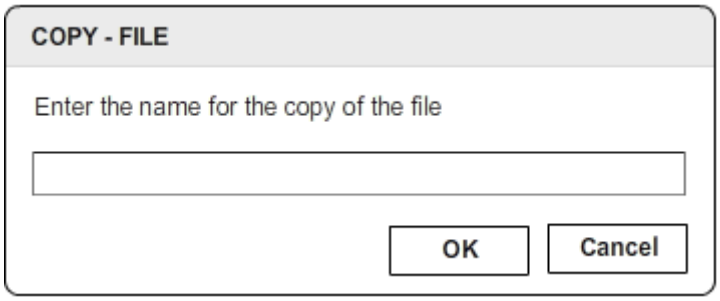
When moving a file, a pop up window will appear showing the root directory, followed by all the sub directories in alphabetical order in a drop down list. The current directory of the file can be included in this list.

The user will be able to select a new directory for the file. The application will allow users to move a file from a directory to the same target directory. This will not generate an error and it will not perform any operation either. However if the filename already exists in target directory then a warning message should be displayed.

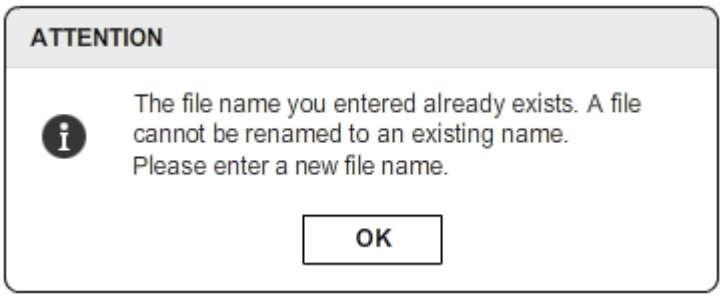


5.2.5 COPY

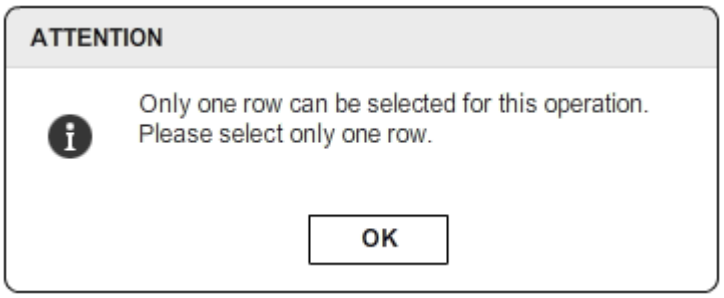
This option allows users to copy the file they have selected. When this option is selected a pop up is displayed which requests the new file name for the copy.



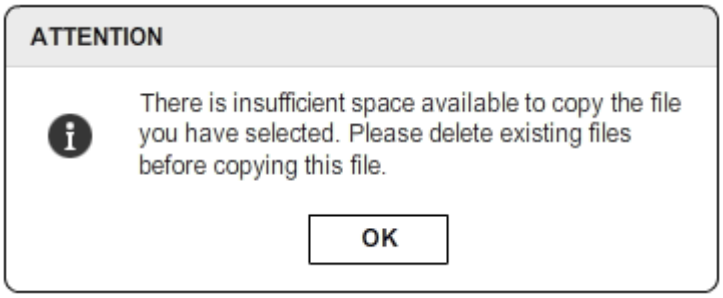
The name of the new file cannot be similar to an existing file. Before the file is copied, a check is made to confirm that a file does not exist with the new filename. If the file exists a warning message is presented to the user with the message and requests them to enter a new file name.



Users can only copy a single file at a time. If multiple rows are selected a modal warning pop will be presented to the user with the message.



Before copying a file a check should be made to ensure that there is sufficient space in the tenant's allocated directory as specified by the **`IEMaxFileStoreSize`** parameter. If there is insufficient space to upload the selected files, a pop up warning should be presented with the following message



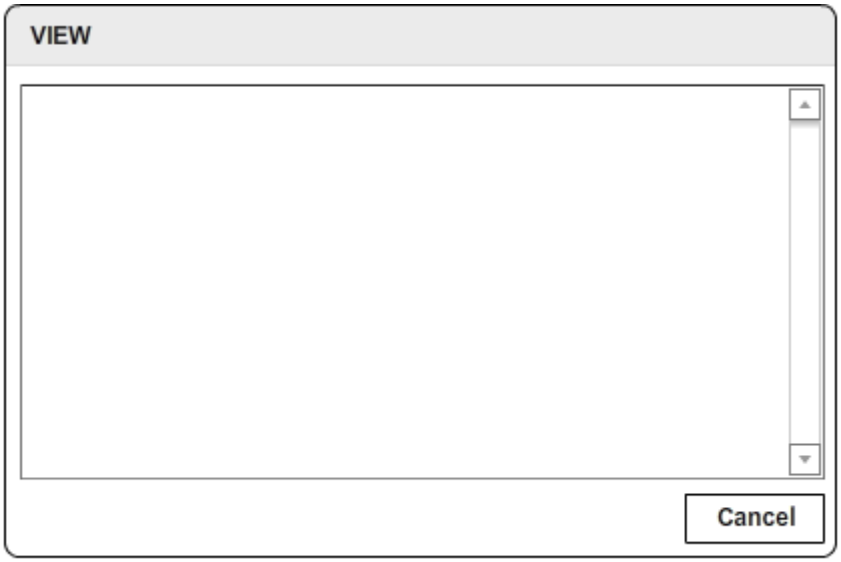
The limitation only copying one file at a time is to simplify the collection of the new name and to ensure that the directory size does not exceed the maximum allocated to the user.

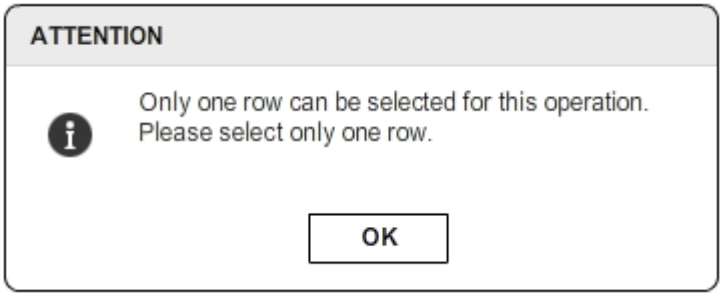
If no files have been selected when this operation is chosen a pop up message is displayed with the following message.

5.2.6 VIEW

This option allows a user to view the file without the ability to edit the file. The file is viewed through a pop up window. The window will have a Cancel button at the bottom right hand corner.

Users can only view a single file at a time. If multiple rows are selected a modal warning pop will be presented to the user with the message.





If no files have been selected when this operation is chosen a pop up message is displayed with the following message.

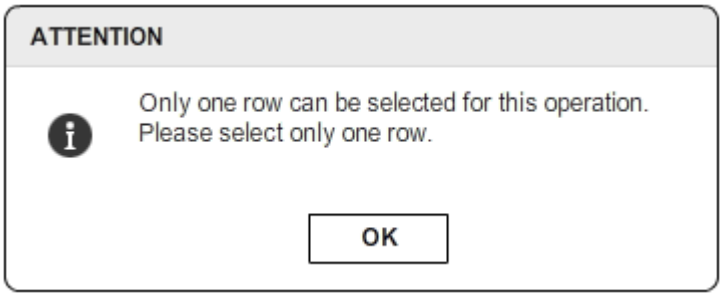
5.2.6.1 CANCEL

When viewing a file, the pop up window will have a Cancel option. This will allow users to close the file viewer window.

5.2.7 EDIT

This option allows a user to edit the file they have uploaded and make changes if required. The file edit tool should support text file formats.

Users can only edit a single file at a time. If multiple rows are selected a modal warning pop will be presented to the user with the message.



If no files have been selected when this operation is chosen a pop up message is displayed with the following message.

5.2.7.1 SAVE

When editing a file, the edit window will have a save option. This will allow users to save any changes they have made to the file.

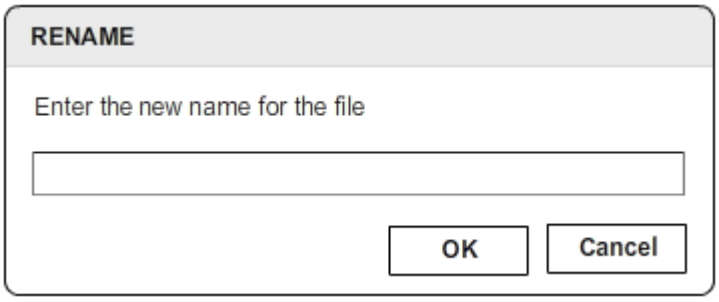
5.2.7.2 CANCEL

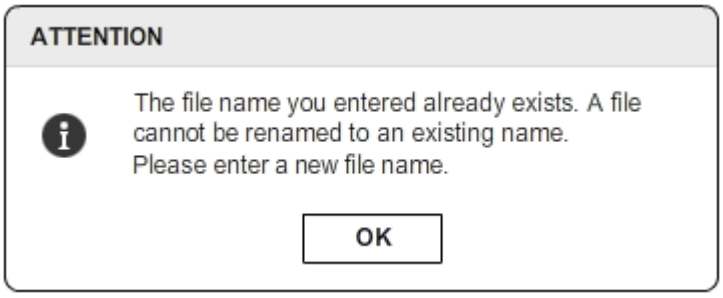
When editing a file, the edit window will have a Cancel option. This will allow users to cancel any changes and close the file viewer / edit window. If changes have been made to the file, then a warning notifying the user about the risk of losing changes without saving should be provided.

5.2.8 RENAME

This option allows users to rename the file they have selected. When this option is selected a pop up is displayed which requests the new file name.

The name of the new file cannot be similar to an existing file. Before the file is copied, a check is made to confirm that a file does not exist with the new filename. If the file exists a warning message is presented to the user with the message and requests them to enter a new file name.





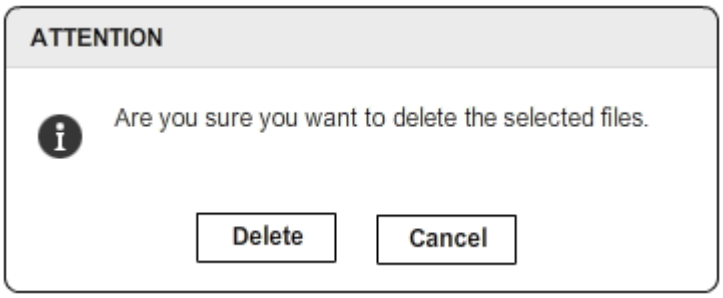
Users can only rename a single file at a time. If multiple rows are selected a modal warning pop will be presented to the user with the message. “Only one row can be selected for this operation. Please select only one row.”

If no files have been selected when this operation is chosen a pop up message is displayed with the following message.

5.2.9 DELETE

This option will allow users to delete files. One or more files may be selected for this operation.

A pop up warning will always be presented to the user with the following message.

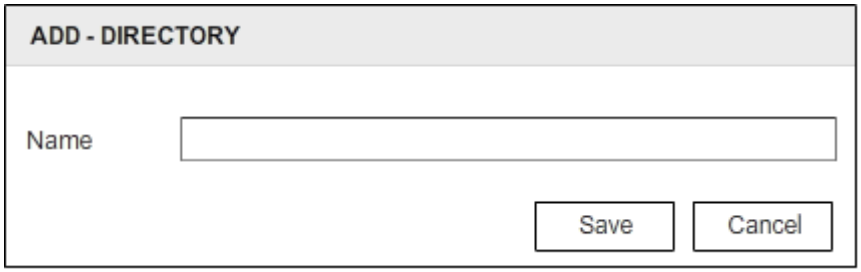


If no files have been selected when this operation is chosen a pop up message is displayed with the following message.

5.2.10 ADD DIRECTORY

Each tenant is provided with their own private directory for storing files. This is considered their root directory. Tenants can create sub directories off their root directory. The purpose of these sub directories is to store files prior to a scheduled upload.

The add directory operation will pop up a window requesting a directory name. Directories can only be created as sub directories off the tenant's main directory. Nested directory structures are not allowed.

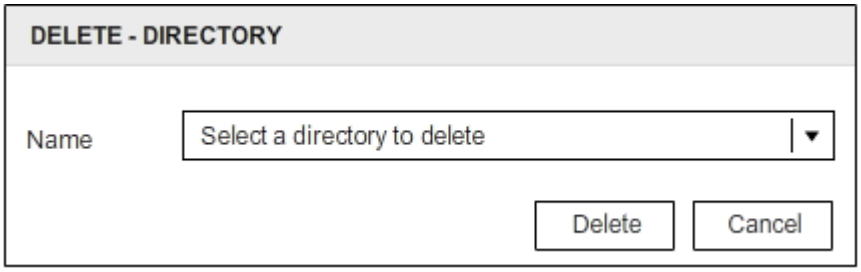


Each directory must be unique. If the user tries to create a directory names that already exists they will be provided with an error pop up message and requested to enter a unique directory name.

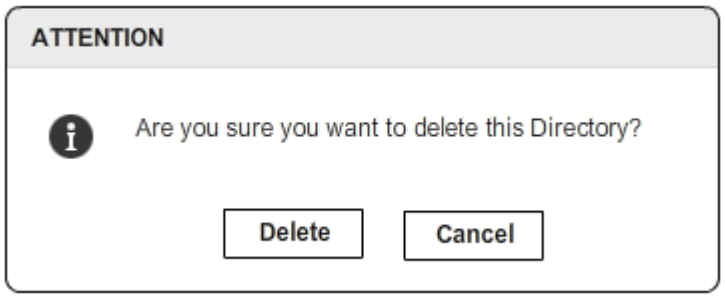
5.2.11 Delete Directory

In order to delete a directory, the directory must first be empty. Only sub directories can be deleted. The main root directory allocated to the tenant cannot be deleted.

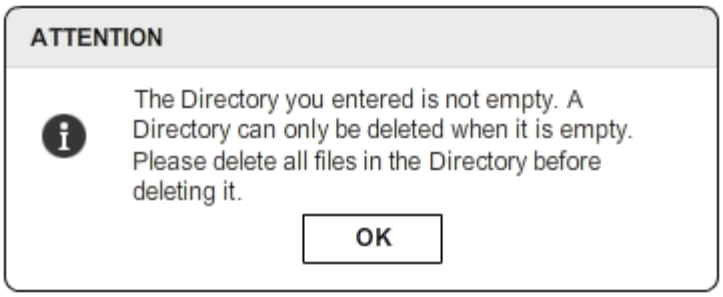
When deleting a directory a pop up window will appear allowing the user. A drop down box with all the available sub directories in alphabetical order will be presented to the user. Only sub directories are shown in this list, the root directory is not included in the drop down list.



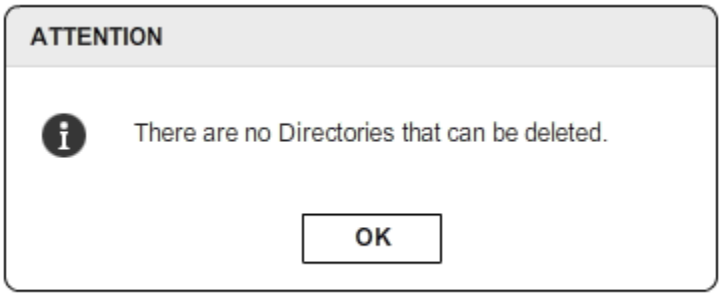
If the user selects a directory that is empty and can be deleted, a confirmation message is displayed.



If the user attempts to delete a directory that is not empty a warning message will be presented to the user.



If there are no subdirectories to delete when the user clicks on the delete Directory icon, the following message will appear.



5.2.12 File Storage Capacity Monitor

Checks are to be made when uploading new files into the file store and exporting data from a database table to the file store that the amount of storage space allocated to the tenant has not been exceeded.

A configurable parameter sets the tenant's limit that should be checked prior to uploading a new file. If that limit is exceeded, the file upload is not permitted. Another configurable parameter defines the limit that should be checked prior to exporting data from a database table to the file store. Generally this will be higher than the import limit to allow users to remove data from a database table. If this limit is exceeded, the database table export process is not permitted.

The file store capacity monitor should show the percentage space utilized as well as the amount of free space remaining. The percentage free space can be calculated by using the **`IEMaxFileStoreSize`** parameter for the tenancy.

5.2.13 File Manager Ribbon Functions Access Control (FUTURE)

Access to any of the features on the ribbon bar is determined by the access control provided to the user. The access control determines whether each of the functions on the ribbon bar are accessible to users. If they aren't accessible to users, buttons on the ribbon bar are shown in their disabled state.

5.3 Audit Log

The following actions will be written to an Audit log which is committed to a database. This database is common to all tenants

Each entry in the audit log consists of the following parameters:

Field	***Size***	***Comments***
Tenant	nvarchar(10)	The tenancy that the user belongs to
User	nvarchar(20)	The user id of the person that performed the action
Date Time	date time	Records when the action occurred in GMT format
Module	nvarchar(40)	Indicates the module from which audit logs were generated (e.g. File Manager)
Description	nvarchar(250)	A text description of the action taken by the user

The messages in audit log are to have the following formats for each of the functions below. A separate entry is to be created in the audit log for the action performed on each file. For example if multiple files are deleted, then an individual entry is to be placed in the audit log for each individual file name.

5.3.1 Audit Module Entry

Module Import Export - File Manger

5.3.2 Audit Module Description

Upload	File <***filename***> was uploaded from <***directory***>
Download	File <***filename***> was downloaded to <***directory***>
Move	File <***filename***> was moved from <***original directory***>to <***destination directory***>
Copy	File <***original filename***> was copied to <***new filename***>
View	File <***filename***> was viewed
Edit – Cancel	File <***filename***> was edited but no changes were made
Edit- Save	File <***filename***> was edited and changes were saved
Rename	File <***original filename***> was renamed to <***new filename***>
Deleted	File <***filename***> was deleted

5.3.3 Audit Log Location & Structure

Audit logs are to be written to a central database

5.4 FILE MANAGER CONFIGURATION PARAMETERS

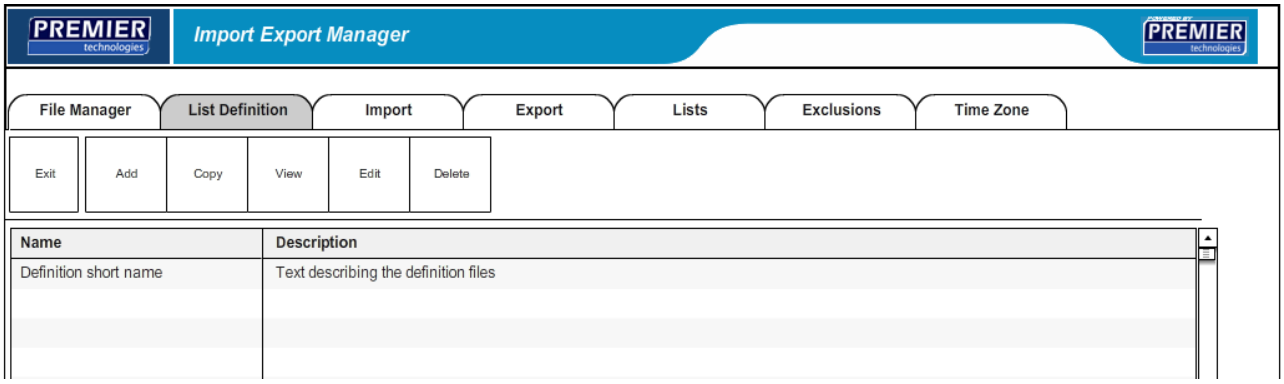
The following configuration parameters stored on per tenant basis are required for the File Manager module.

These configuration items are stored are found in the tenant configuration database.

Parameter	*Type*	*Default*	*Comments*
IEFileStoreLocation	nvarchar(250)		The full file path of the file store location allocated to the tenant.
IEMaxFileStoreSize	int		The max total storage size in Mbytes allowed for all the files placed in the tenant's allocated directory

6 LIST DEFINITION TAB

The Table Definition module is used to define the structure of database tables. The table definition module also includes the field validation rules that should be applied to data before it is imported into the table.



6.1 LIST DEFINITION GRID

The Table Definition module will display all the table definitions that have been defined by the tenant in a grid.

Users will only be able to select one row at a time in the grid.

Every list definition name includes a micro tenancy identifier. This consists of a 4 character tenancy identifier followed by an underscore. The micro tenancy identifier is not to be displayed in the definition name column of the grid, instead it is to be automatically hidden from view.

The columns in the grid are as follows from left to right.

Name	Unique Short name used as the key (micro tenancy id not displayed)
Description	Longer name used to better describe the table definition

Clicking on the header for each of the columns will sort the grid based on that column. The default sorting order will be alphabetical on the Name column.

Note that provision for a vertical scroll bar should always be included in the form. If no scroll bar is required this space is left unused.

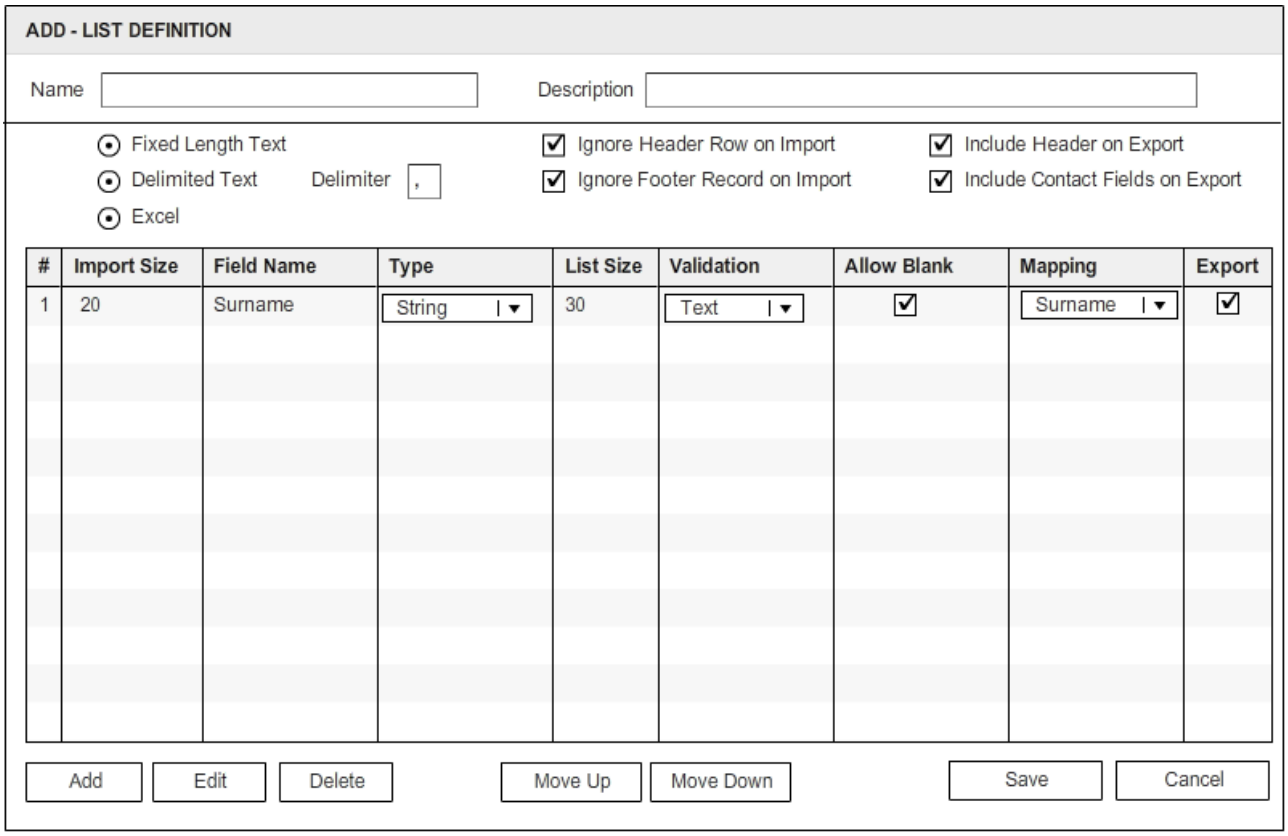
6.2 LIST DEFINITION RIBBON

6.2.1 EXIT

The exit button returns the user to the main menu

6.2.2 ADD

This option adds a new list definition. When the option to add a new table definition is selected a pop up window is provided titled ADD - LIST DEFINITION.

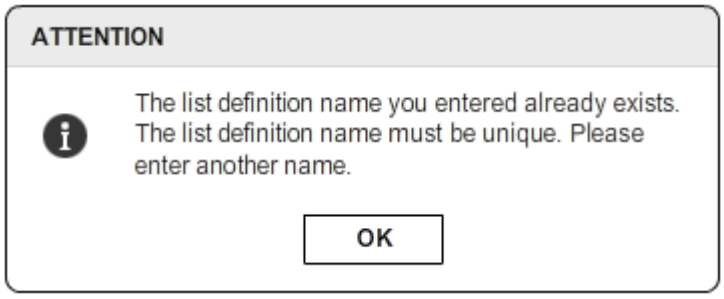


6.2.2.1 DEFINITION NAME AND DESCRIPTION

At the top of the pop up form are two fields being Name and Description. The first thing the user is required to do is to specify a unique name for the table definition. This is a short name of no more than 35 characters. This field is mandatory and cannot be left blank. The user can also enter a description however this field is not mandatory

When the list name is saved, the tenant ID followed by and underscore is automatically pre-pended to the list. This is to enforce micro tenancy. This is not visible to the user and never shown in this form.

When the list definition is to be saved, the first check should be that the Name of the list definition is unique. If the name if not unique, a pop up error message should be presented to the user with the following message.



6.2.2.2 Import File Format

Below the name are a series of radio buttons allowing users to select the format of the import file. The type of import file is determined by this selection. The options are:

- Fixed length text files
- Delimited files - requires the delimiter to be specified
- Excel
- XML (FUTURE)

6.2.2.3 Ignore Header and Footer

The user is given the option to specify whether the import files will include a header and footer that needs to be discarded. The header and footer are the first line and last line of the file and typically include column headings and totals.

If the header and footer lines are to be ignored, the check boxes below the description field should be checked.

6.2.2.4 Export Header and Contact Fields

When it comes to generating the export file, the user is given the option to specify whether to include a header in the export file as well as whether to include the system field which include the contact details added by the platform when the outbound contacts are made.

If the header is to be added and contact details to be included, the check boxes below the description field should be checked.

6.2.2.5 Field Definition Grid

A grid is displayed on the form into which the user can enter the table definition.

Only one row at a time can be selected in the grid. The grid will not allow the selecting of multiple rows. Users should be able to enter as many rows as required. Blank rows are not permitted.
The user should be able to order the rows as well. This will be achieved by selecting the row and using the two buttons at the bottom of the window titled Move Up and Moves Down.

The grid will consist of the following columns.

6.2.2.5.1 Field Order

This identifies the numerical order in which fields are found in the imported text files. The number is auto generated starting at 1 and increasing for each row.

Every field in the import file must be accounted for even if the field is not used in the table created when the list is to be imported. The same field definition will also be used when the table is exported.

6.2.2.5.2 Import Field Size

This column represents the size of the field as found in the import file.

This parameter treated differently depending on the file type being imported. For fixed length text files, the field represents the length of the field. For Delimited files, Excel or XML files the parameter represents the maximum size of the field that will be imported. Delimited fields that are longer than this parameter will be truncated.

6.2.2.5.3 List Field Name

This is the field name that will be created in the database. The field must be letters and numbers only and not contain any spaces. List field names must be unique within the same List definition.

6.2.2.5.4 List Field Type

This parameter is used to define the data type of the field. The options for this parameter are specified in the table tblDataType and are presented in a drop down list.

Refer to the documentation of tblDataType later in this document.

6.2.2.5.5 List Field Size

Depending on the specification of the field type, the size may need to be specified as well. This will determine the size of the length that will be created in the list table. Note that this does not have to be the full length of the field. Any remaining space is ignored.

The field types that require the size to be specified are identified in tblDataType. If the selected field does not require the size to be specified, then the background colour of this column is to be changed to Grey (RGB 192,192,192).

6.2.2.5.6 VALIDATION

This parameter identifies the type of validation that will be applied to data imported into the field. The validations are defined in the table tblFieldValidation and are presented in a drop down list.

Refer to the documentation of tblFieldValidation later in this document.

6.2.2.5.7 ALLOW BLANK

This parameter is used to determine whether the field is allowed to be blank. If this field is not checked, then the imported record must contain data. If it is blank, it will fail validation.

6.2.2.5.8 MAPPING

This parameter defines the function that is mapped to each imported field. This enables the dialer to determine which fields are the customer's name, phone number and time zone indicator.

The field mappings are presented in a drop down list. The values that appear in the drop down list are sourced from the table tblFieldMapping which is defined later in this document.

6.2.2.5.9 INCLUDE IN EXPORT

This parameter is used to determine whether the field is to be included when the list is to be exported. By default the check box should appear checked which will include the parameter in the export.

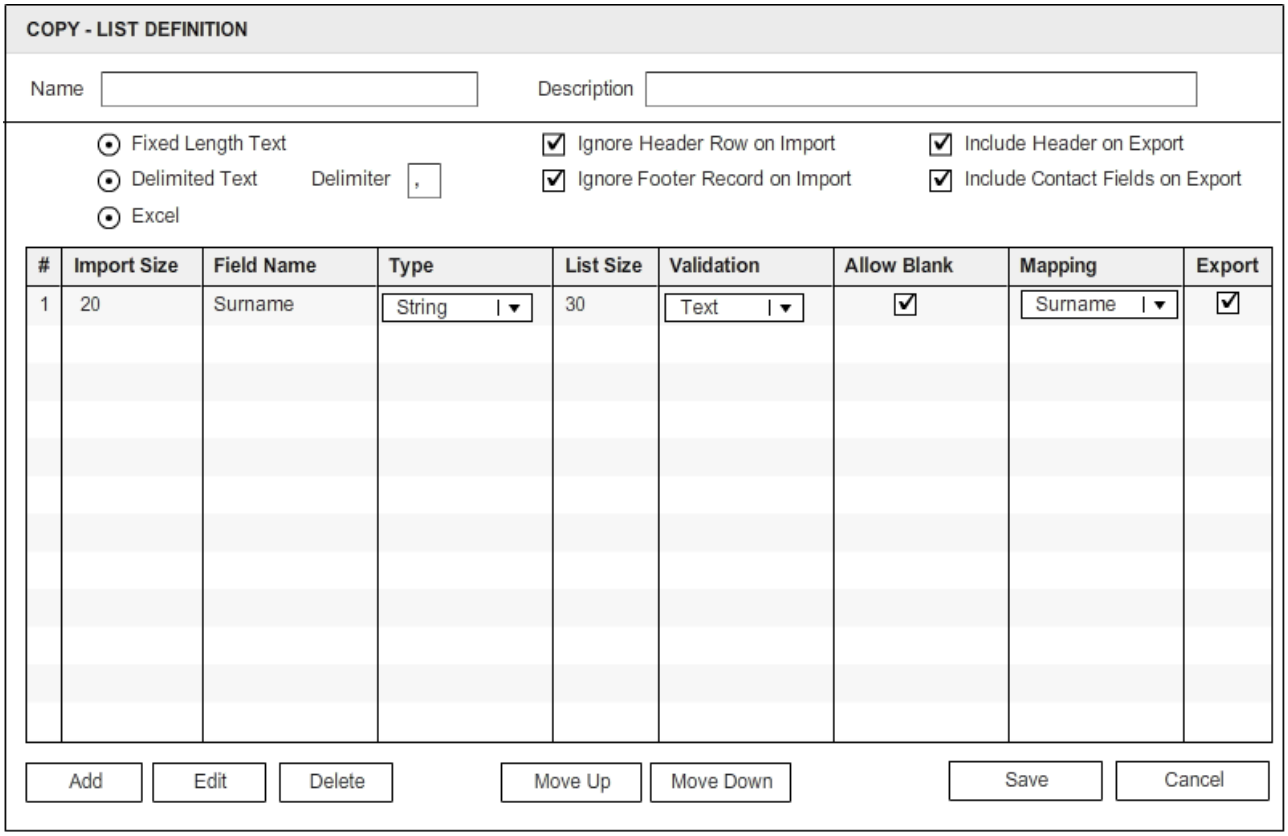
6.2.2.6 COMMAND BUTTONS

The Add, Save and Cancel buttons are always active.

The Edit, Delete, Move Up and Move Down buttons will only be active when a row is selected. If no row is selected, then the buttons will be disabled.

6.2.3 COPY

The Copy function allows the selected list definition to be copied. When this option is selected the same pop up window that is used for the Create operation is used, however all the details of the list definition are pre populate in the grid. The Definition name and definition description are blank. The title of this pop up should be COPY - LIST DEFINITIONS.



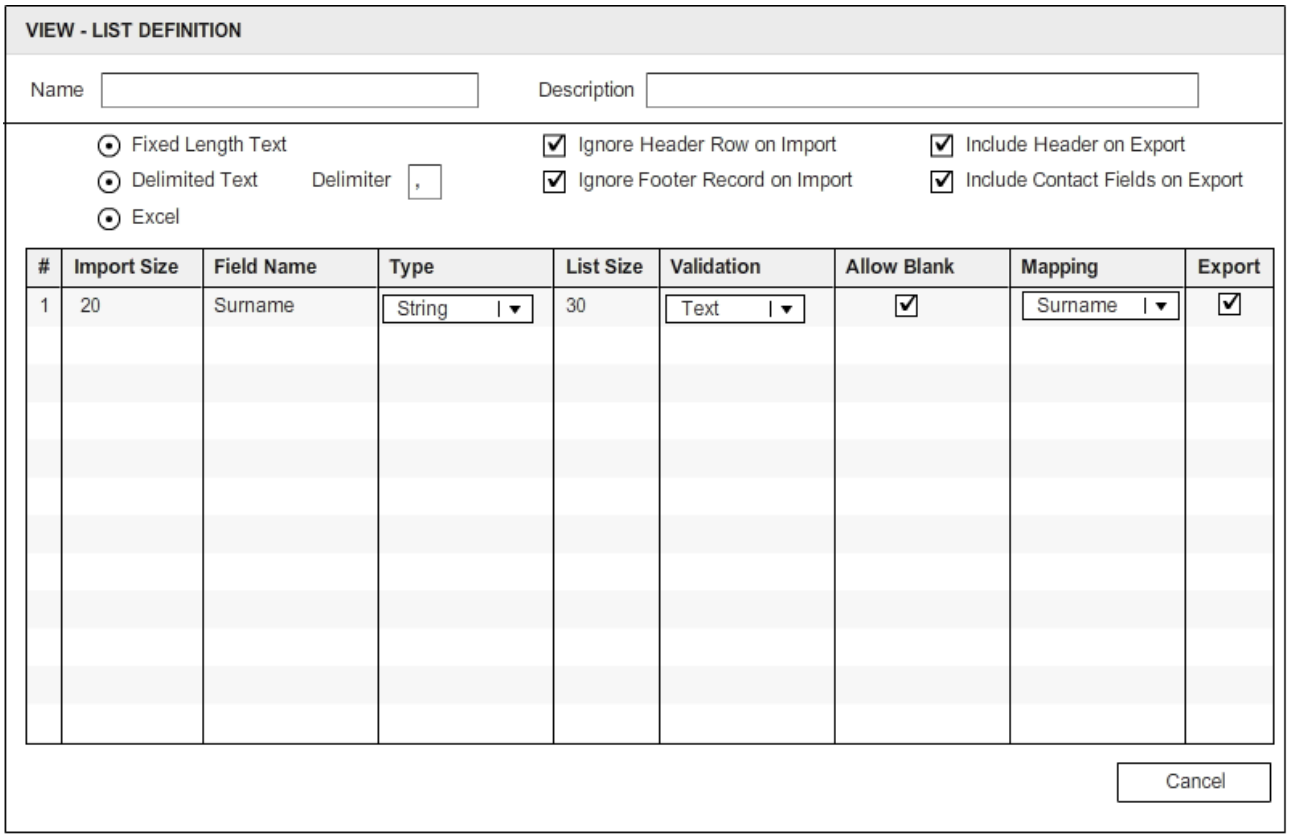
The user must enter a new definition name and optionally add a new description, then save the details using the save button on the form.

From this point, the same rules apply in relation to the uniqueness of the list definition names as in the case of when a new list definition is created.

If no definitions have been selected when this operation is chosen a pop up message is displayed with the following message.

6.2.4 VIEW

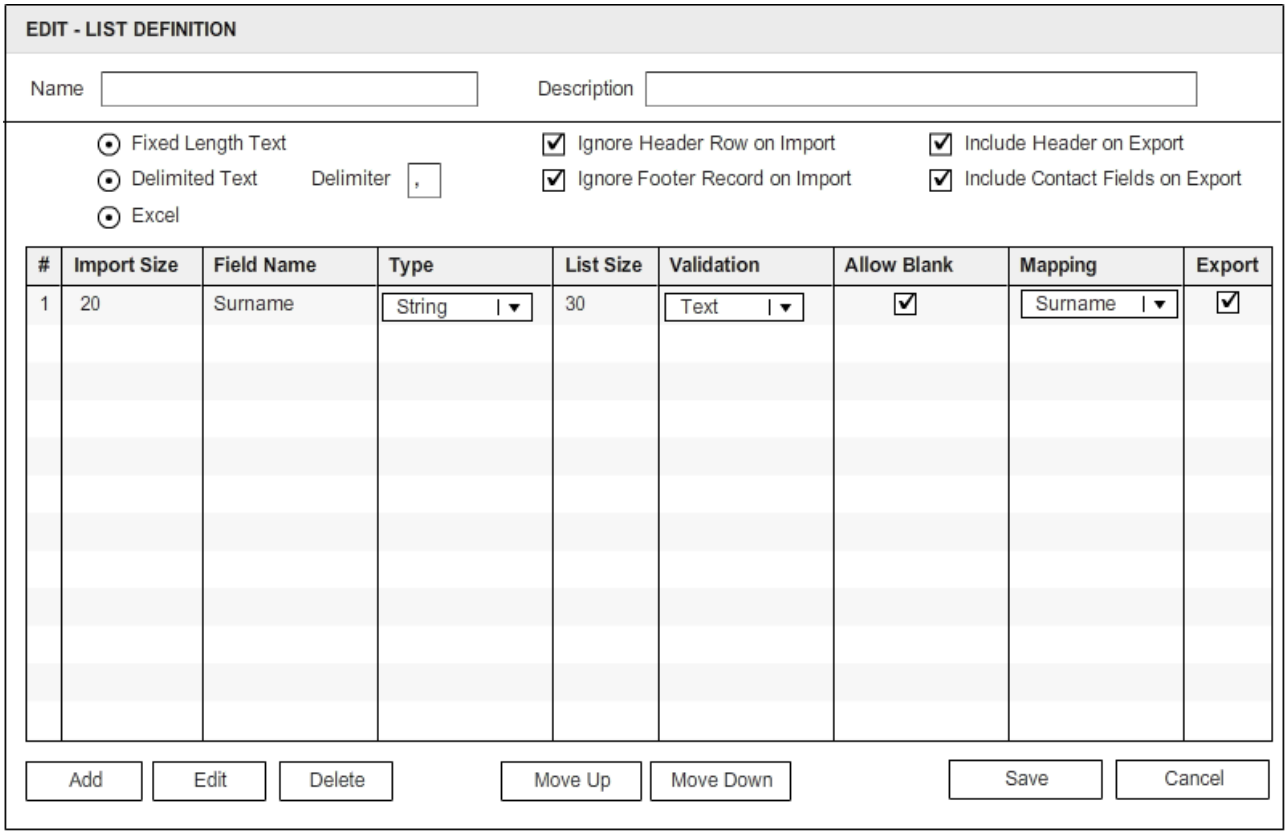
This option allows a user to view the table definition without the ability to edit it. The title of this pop up should be VIEW - LIST DEFINITIONS. All the buttons at the bottom of the form should be disabled, except for the Cancel button.



If no definitions have been selected when this operation is chosen a pop up message is displayed with the following message.

6.2.5 EDIT

The Edit function allows the selected list definition to be edited. When this option is selected the same pop up window that is used for the Create operation is used, however all the details of the list definition are pre populate in the grid. The title of this pop up should be EDIT - LIST DEFINITIONS.



Note that the List Definition Name CANNOT be edited. If the user wants to change the list definition name, they must make a fresh copy of the List Definition and give it a new name. The List Definition Description field is editable.

From this point, the same rules apply in relation to the uniqueness of the list definition names as in the case of when a new list definition is created.

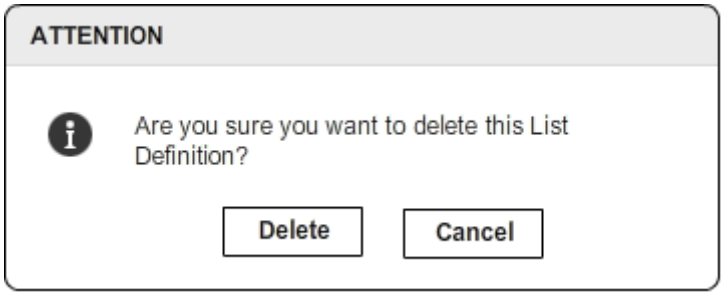
If no definitions have been selected when this operation is chosen a pop up message is displayed with the following message.

6.2.6 DELETE

The delete function allows the user to delete the selected table definition entry.

Prior to deleting the list definition, a check is made to see if the current list definition name is in use. If it is being used by a scheduled import or export process, then a pop up should be displayed with the message.

A pop up warning will always be presented to the user with the following message. “Are you sure you want to delete this entry.” This is then followed by the Name of the selected entry. This pop up will be modal and centered in the browser window. The title of the pop up will reflect the function being performed.



If no definitions have been selected when this operation is chosen a pop up message is displayed with the following message.

6.2.7 LIST DEFINITION RIBBON FUNCTIONS ACCESS CONTROL (FUTURE)

Access to any of the features on the ribbon bar is determined by the access control provided to the user. The access control determines whether each of the functions on the ribbon bar are accessible to users. If they aren’t accessible to users, buttons on the ribbon bar are shown in their disabled state.

6.3 AUDIT LOG

The following actions will be written to an Audit log which is committed to a database. This database is common to all tenants

Each entry in the audit log consists of three parameters. They are

Field	*Size*	*Comments*
User	nvarchar(20)	The user id of the person that performed the action
Tenant	nvarchar(10)	The tenancy that the user belongs to
Date Time	date time	Records when the action occurred in GMT format
Module	nvarchar(40)	Indicates the module from which audit logs were generated (e.g. File Manager)
Description	nvarchar(250)	A text description of the action taken by the user

The messages in audit log are to have the following formats for each of the functions below. A separate entry is to be created in the audit log for the action performed on each file. For example if multiple list definitions are deleted, then an individual entry is to be placed in the audit log for each individual list definition name.

6.3.1 AUDIT MODULE ENTRY

Module Import Export – List Definition

6.3.2 AUDIT MODULE DESCRIPTION

Add	List definition <***name***> was added
Copy	List definition <***original name***> was copied to <***new name***>
View	List definition <***name***> was viewed
Edit – Cancel	List definition ***<name>*** was edited but no changes were made
Edit- Save	List definition ***<name>*** was edited and changes were saved
Deleted	List definition <***name***> was deleted

6.3.3 AUDIT LOG LOCATION & STRUCTURE

Audit logs are to be written to a central database

6.4 DATABASE TABLE DEFINITION – LIST DEFINITIONS

6.4.1 TBLLISTDEFINITION

This table contains the details of the List Definition and also contains the key that is used to lookup the List Definition Fields table that contains all the information about all the fields that will be used to create a database tables within the Tenant's database.

6.4.1.1 STRUCTURE

Field	Type	Comment
TenantID	nvarchar(10) ***Index***	Contains the unique tenant ID
ListDefinitionName	nvarchar(25) ***Index***	The unique name used to identify the list definition. This is a mandatory field and cannot be blank. Note the first 5 characters of this field are always the micro tenancy identifier + "_"
Description	nvarchar(40)	A larger optional description of the list definition.
FileType	int	Indicates the type of file used. 0 = Fixed length Text, 1 = Delimited text file 2 = Excel
Delimiter	nvarchar(1)	The delimiter character for delimited text files.
IgnoreImportHeader	boolean	Indicates whether to ignore the header on import 1 = Ignore header record, 0 = Don't ignore header record
IgnoreImportFooter	boolean	Indicates whether to ignore the footer on import 1 = Ignore footer record, 0 = Don't ignore footer record
ExportHeader	boolean	Indicates whether the export a header record 1 = Export a header record 0 = Don't export a header record
ExportContactFields	boolean	Indicates whether to export the system contact fields as well 1 = Export system contact fields 0 = Don't export system contact fields.

To create a new List Definition, the user must first nominate the unique name for the List Definition. This List Definition name only needs to be unique within the tenancy and is used as the key to identify all the records in this table that make up the list definition

6.4.2 TBLLISTDEFINITIONFIELDS

This table contains the List Definition fields that will be used to create a database tables within the Tenant's database.

6.4.2.1 STRUCTURE

Field	Type	Comment
TenantID	nvarchar(10) ***Index***	Contains the unique tenant ID
ListDefinitionName	nvarchar(25) ***Index***	The unique name used to identify the list definition. This is a mandatory field and cannot be blank. Note the first 5 characters of this field are always the micro tenancy identifier + "_"
FieldID	Int	A unique ID for each field in the table. This field is used to control the order in which the table definition fields are displayed.
ImportSize	int	The size of the field in characters in as found in the import file. This is only used for fixed length import files.
FieldName	nvarchar(40)	The name of the field. This cannot contain spaces.
FieldType	nvarchar(20)	The type of field as specified below: nvarchar Variable length character string int Integer boolean Boolean identifier float Floating point number date/time Date time phone Phone number (nvarchar in database) Email Email Address (nvarchar in database)
Field TypeIndex	Int	Index value of the field type (Used for backward compatibility to UIP) nvarchar ID = 1 int ID = 2 boolean ID = 3 float ID = 4 date/time ID = 5 phone ID = 6 Email ID = 7
Size	Int	The length of the field where required: nvarchar Must specify size int No size specification required boolean No size specification required float No size specification required date/time No size specification required phone Must specify size Email Must specify size
Validation	nvarchar(20)	Indicates the type of validation that should be performed on this field. Selected from the tblValidationType table

AllowBlank	Boolean	Indicates if blanks are allowed in this field. (default: true)
Mapping	nvarchar(20)	Drop down list with the range of field mapping that is to be associated with this table field. Field mappings are not mandatory. The first entry in the drop down list should be blank, allowing the user to leave this entry blank. Field mappings are defined below.
AllowExport	Boolean	Indicates if this field should be exported after dialing. (default: true)

6.4.3 Field Mapping Definitions

The field mappings are used when creating a List and provide the dialer with insight into what each of the fields in the List are used for.

Note the Field Mappings should always be populated by a drop down list with a blank entry at the top. Field mappings are not mandatory so users can leave them blank.

ID	Field Type	Description
1	First name	The field that identifies the first name
2	Last name	The field that identifies the last name
3	Phone1	Work Phone number field
4	Phone2	Mobile Phone number field
5	Phone3	Home Phone number field
6	Phone4	Phone number field
7	Phone5	Phone number field
8	Phone6	Phone number field
9	Time Zone	The time zone of the customer in this record. ***THE TIME ZONE FIELD CANNOT BE BLANK***
10	SSN	Social Security number - used for exclusion list
11	Account	Customer account number - used for exclusion list
12	Email	Email address for email interactions

The ID value is used in the List creation process to indicate to the dialer the purpose of mapping of specific fields.

6.4.4 Mandatory Field Validations

When fields in a table have been mapped with a specific field mapping, then additional mandatory validations should be performed against fields to ensure that those fields also meet the validation

requirements of how they've been mapped. These mandatory validations are performed in addition to any other field validations that have been configured as part of the table definition.

6.4.4.1 Phone1, Phone2, Phone3, Phone4, Phone5 or Phone6 Mappings

These fields must be imported as phone numbers. All characters other than +0123456789 must be removed. The "+" is only valid as the first character.

6.4.4.2 FirstName LastName Mapping

No validation is performed on these fields.

6.4.4.3 SSN Mapping

This field must only contain the characters 0123456789. All other characters should be ignored or removed.

6.4.4.4 Account Mapping

No validation is performed on this field. Letters, number and special symbols are allowed

6.4.4.5 Timezone Mapping

This field must contain a valid entry from the tenant's TimeZone table and CANNOT be blank.

6.4.4.6 Email Mapping

This field must contain an entry which is structured as a valid email address.

6.4.5 TBLFIELDVALIDATION

This table contains the definition of the validations that will be applied to fields when they are being imported into a database table.

Question
Does this need to be a look up table or should it just be hard coded into the app?
A lookup table is useful if we're going to have different validations for different customers. I'm not sure if this is needed though.

6.4.5.1 UNIVERSAL VALIDATIONS

Validations that have a blank TenantID will be considered Universal Validations and available to all tenancies. Validations that specify a TenantID will be restricted to that Tenant.

6.4.5.2 STRUCTURE

Field	Type	Comment
TenantID	nvarchar(10)	Contains the unique tenant ID
Name	nvarchar(20)	The unique name used to identify the field validation. This is a mandatory field and cannot be blank.
Description	nvarchar(40)	A larger optional description of the field validation.

To create a new field validation definition, the user must first nominate the unique name for the field validation. This name only needs to be unique within the tenancy and is used as the key to identify all the records in this table that make up the field validation definition

6.4.5.3 CONTENTS

This table is populated with a list of possible validation types. These validation types determine the validation routine that will be applied to each field. Additional validation types will be added over time.

The Following validations will be included as Universal Validations.

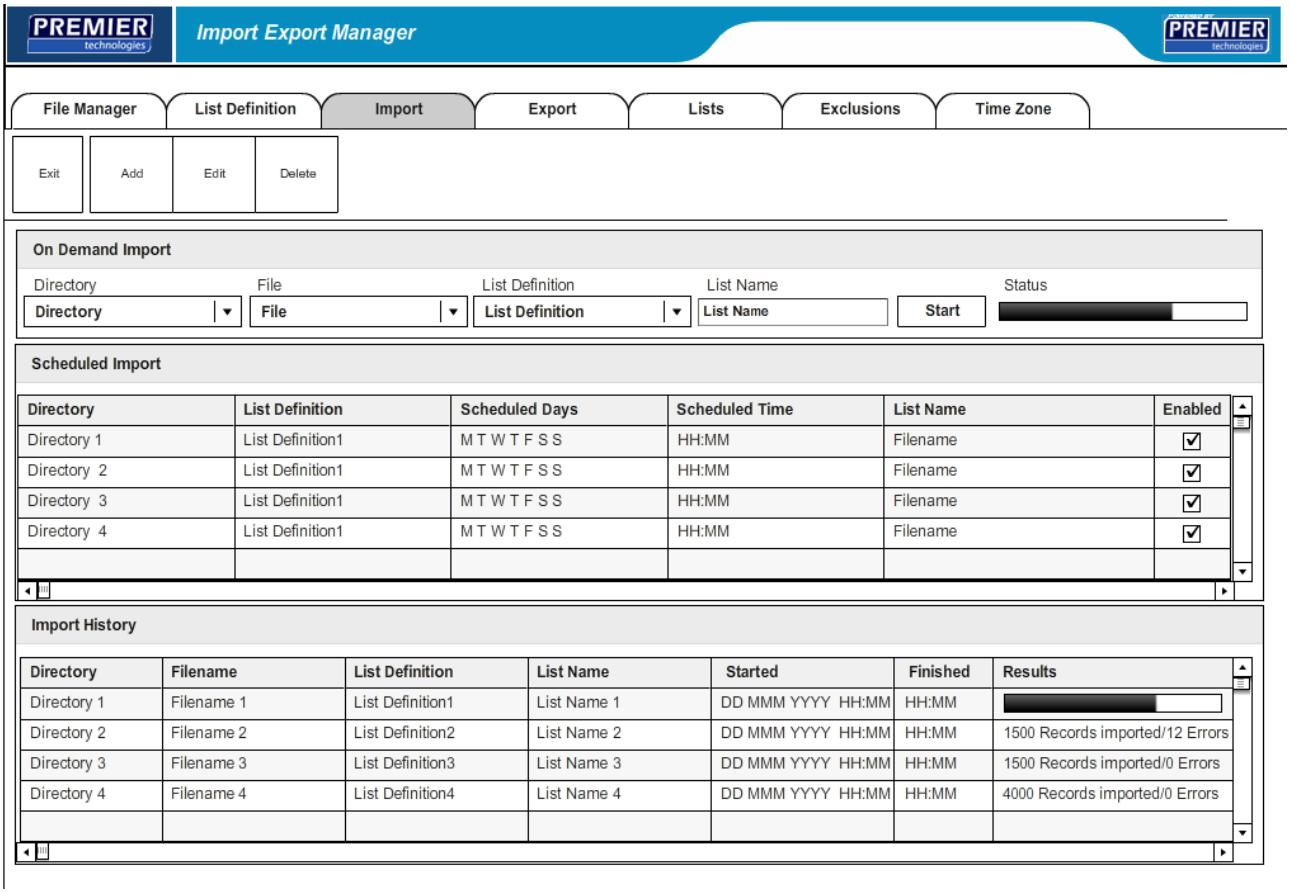
Validation	Validation Rules
Alphanumeric	Letters and numbers allowed Trim all leading, and trailing white space. Length must be equal, or less than FieldLength. If AllowBlanks = false, then length must be > 0
~~Length~~	~~Defines the min / max length of the input~~ (Removed in version 1.05)
Integer	Must be a valid integer containing only +-0123456789 Must be a valid integer or Blank (Null) if Allow Blank = true

Validation	Validation Rules
Numeric	Same as integer with optional decimals
Decimal2	Must be a valid numeric amount with no more than 2 decimal digits (used for currency amounts)
Decimal3	Must be a valid numeric amount with no more than 3 decimal digits (used for currency amounts)
Decimal4	Must be a valid numeric amount with no more than 4 decimal digits (used for currency amounts)
Date/Time	Must be a valid date/time (please note when validating a date, formats can vary by region. Eg. dd/mm/yyyy or mm/dd/yyyy are both possible Or Blank (Null) if Allow Blank = true
Date yyyymmdd	Valid date format, this will allow one optional character between each of the year month and day identifiers
Date ddmmyyyy	Valid date format, this will allow one optional character between each of the year month and day identifiers
Date mmddyyyy	Valid date format, this will allow one optional character between each of the year month and day identifiers
Time 2400hr	Valid date time in 2400 hr format
Time AMPM	Valid date time in 12:00 AM/PM format
PhoneNumber	When data is imported into this field, all characters other than +0123456789 should be removed. The "+" symbol is only valid as the first character Or Blank (Null) if Allow Blank = true
EmailAddress	A properly structured and formed email address Or Blank (Null) if Allow Blank = true
Letters only	Alphabet characters and blanks are allowed. No special characters or digits allowed
Time Zone	Must be a valid entry that is present in the time zone table.

7 IMPORT TAB

The import module takes files that have been imported through the File Manager tab together with list definitions created in the List Definition tab and creates a dialing table in the tenants database then imports the data contained in the imported file.

The import tab allows users to import a file on demand as well as scheduling an import. This tab also includes a historical log of imports that have been conducted in the past.



7.1 IMPORT PANEL

The Import panel consists of three sections detailed below.

7.1.1 ON DEMAND IMPORT

The On demand import panel allows a user to import a list immediately.

To action an import on demand, the use must select a directory the file is located in from a drop down list. The drop down list should contain the root directory at the top of the drop down list followed by all the sub directories in alphabetical order.

When this panel is populated the root directory for the tenant is selected in the directory drop down list by default.

The file must be selected from a drop down list of files that have been loaded into the tenant's directory. Only files for the selected directory are to be displayed in the drop down list. When the panel is first

displayed, only the files in the root directory are displayed as is the default directory that has been selected.

A list definition must be selected once again using a drop down list of list definitions that have been created.

The list name to be created must then be specified by the user. The list name must be unique and not include spaces. If the list name is not unique the following popup will be presented to users.

Once these details have been entered, the user should click on the start button to initiate the import.

While the list is loading a progress bar should show the progress of the list import. When the import is complete, the progress bar should be replaced with the text “Completed hh:mm” where hh:mm is the time the list import was completed.

7.1.2 SCHEDULED IMPORT

The Scheduled Import panel lists the scheduled imports that have been configured through the use of the Add, Edit and Delete icons on the ribbon bar. By default the Scheduled import grid is ordered by Scheduled time in ascending order.

The Scheduled Import process reads in all the data from all the files found in the nominated directory at the time of the scheduled import and loads them into a table specified by the List Definition configuration. The only exception is that the import process ignores error files. These are files that have an extension being either “.errorlog” or “.errordata” which are created by the import process to record import errors.

The columns in the Scheduled Import grid are as follows.

Directory	Identifies the directory in which the files to be imported are to be found. Any files located in this directory at the time of import will be loaded into the List.
List Definition	Defines the List Definition structure to be used by the scheduled import process.
Scheduled Days	Defines the days of the week when the import will take place.
Scheduled Time	Defines the time when the import will take place. Only one time can be nominated per schedule. **If a file is to be imported multiple times a day, then a scheduled import entry is to be created for each time that an import is to take place.**
List Name	Defines the list name to be created with the data.
Enabled	This option allows defined Import Schedules to be enabled and disabled without having to remove them from the Scheduled import list. The scheduled import process will only take place if the Enabled check box is ticked.

7.1.3 IMPORT HISTORY

The Import History grid lists the all past imports and scheduled imports in progress. It serves as a record of all Imports and is sorted by default in reverse order based on the date the import was started.

The Import History grid can be sorted on all fields other than the results field.

Data about an On Demand import is added to this grid only when the On Demand import has been completed.

Data about scheduled imports is added to this grid the moment the scheduled import starts. While the import is in progress, a progress bar will be shown in the results. When the import has been completed the Results field will display the following.

XXX Records imported / 0 Errors
XXX Records imported / YY Errors. See error log file.

Where:

XXX represents the number of records imported correctly.
YY represents the number of errors.

If there are errors, then the number of errors is followed by the phrase “See error log file.”

Note that one entry in the Import History grid is created for each individual file that has been imported. If a schedule import finds multiple files in a directory, then a record in the Import History grid will be created for each file.

The error log is created with the same name and in the same directory as the file being imported, but with a “.errorlog” extension. The error log file contains information about all the records that failed the import process.

The data from the records that filed the import process are written to a file with the same name and format as the original file but with a “.errordata” extension. The failed records are placed in this file so that they can be manually edited, then imported again once the file is renamed.

The columns in the Import History grid are as follows.

Directory	Identifies the directory in which the imported files were found.
File Name	The name of the file that was imported.
List Definition	Defines the List Definition structure that was used by the scheduled import process.
List Name	Defines the list name that was created when the data was imported.
Started	The date and time when the import process was started
Completed	The date and time when the import process was completed. This field is blank if the import process is still in progress
Results	Shows the progress indicator while the import is in progress as well as the number of records imported and number of errors encountered.

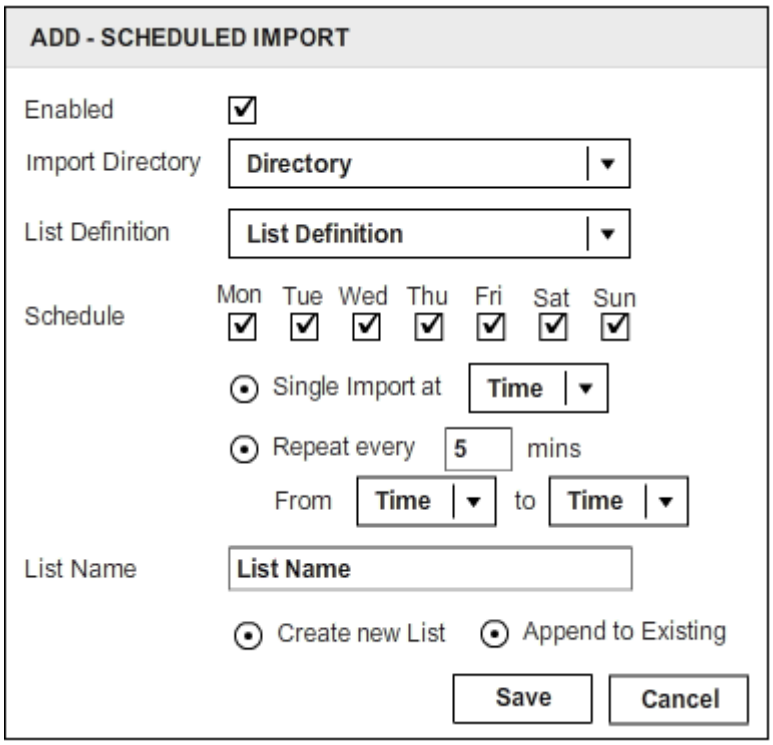
7.2 IMPORT MODULE RIBBON

7.2.1 EXIT

The exit button returns the user to the main menu

7.2.2 ADD

This option adds a new scheduled import. When the option to add a new import schedule is selected a pop up window is provided titled ADD – SCHEDULED IMPORT



The pop up consists of the following elements.

7.2.2.1 ENABLED

A check box is provided to indicate whether the scheduled import is enabled or not. The schedule only runs if the check box is ticked. This allows a scheduled import to be defined without putting it in production.

7.2.2.2 IMPORT DIRECTORY

The user can select the directory from which the data files will be sourced through this option. A drop down list is provided with all the sub directories allocated to the tenant.

Note that this drop down list must EXCLUDE the sub directory called **`Imported`**. This is a special directory into which files that have been loaded into the list are archived to.

The schedule import process will read all files that are found in the nominated directory and import them into the list. The only exception are files with the following extensions.

".errorlog"	error log file indicating the reason records failed the import process
".errordata"	data records which failed the import process

7.2.2.3 LIST DEFINITION

The user can select the list definition to be used to interpret the data file from the drop down list. This drop down list should be populated from **`tblListDefinition`**. The key ListDefinitionName should be shown in the drop down list in alphabetical order.

7.2.2.4 SCHEDULE

The schedule allows the user to select the days of the week the import is to be performed. The default value for these check boxes is to have Monday to Friday selected and Saturday and Sunday unselected.

The user is also able to select two options for the time during the day that the import will be performed. The import time can be selected from a drop down list of available times expressed in 10 minute intervals throughout the day. The user can select to have a single import per day at a specified time.

Alternatively the user can select to have periodic imports at regular intervals between a specified start and end time. The start and end times can be selected from a drop down list that includes a list of available times expressed in 10 minute intervals.

The end time must be later than the start time. Once the start time has been changed, the end time should be checked and if it is less than the start time it should be changed to be equal to the start time.

Similarly when the end time is changed, the start time should be checked. If the start time is after the end time, the start time should be changed to be equal to the end time.

The default value for the single import time is to be set to 8am. The default value for the from and to time for repeating imports are 8 am and 5 pm,

In all the time drop down lists, the time format will start be as follows. The time entries will start with 12:00 midnight, 12:10 AM, 12:20 AM through to 11:50 AM, 12:00 MIDDAY, 12:10 PM, 12:20 PM and finishing at 11:50 PM. All times are to be shown in 12 hour AM/PM format.

Note that times are entered by the user in their time zone, however time should be stored in GMT in the database.

7.2.2.5 LIST NAME

The list name field allows the user to enter the name of the list. The base list name can be up to 40 characters. An additional 5 characters being the micro tenancy indicator are automatically added to the list name but should not be shown to the user.
List names can only contain letters (a..z, A..Z) , underscore, dash and numbers, other special characters are not permitted.

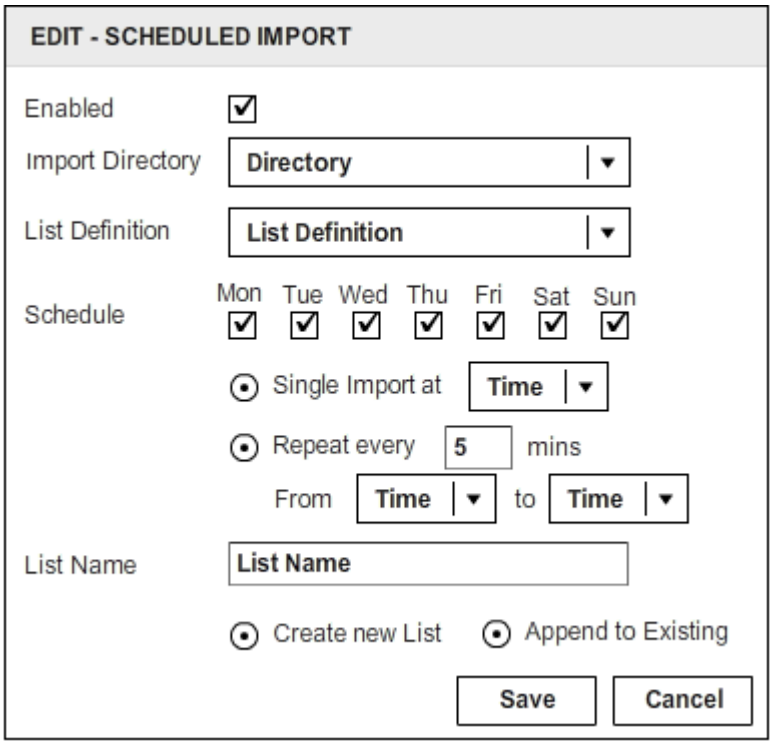
Underneath the list name, the user can identify whether they want records appended to an existing list or a new list name to be created with the data being imported.

7.2.2.6 COMMAND BUTTONS

There are two command buttons which are used to save the changes and close the pop up or cancel and close the popup.

7.2.3 EDIT

This option allows the user to edit a scheduled import. When the option to edit an import schedule is selected a pop up window is provided titled EDIT – SCHEDULED IMPORT



The pop up is presented with all the existing details populated in the form. The same validation rules apply when a schedule is edited as described in the previous section when a new schedule is added.

7.3 IMPORT DATABASE TABLE STRUCTURES

7.3.1 TBLIMPORTSCHEDULE

This table contains the definition of the Import schedule

7.3.1.1.1 STRUCTURE

Field	Type	Comment
TenantID	nvarchar(10)	Contains the unique tenant ID
ImportDirectory	nvarchar(80)	The name of the directory in which the data files used during the import process will be located. This directory location is expressed relative to the root directory of each tenant.
ListDefinitionName	nvarchar(25)	The name of the list definition that is to be used for this scheduled import.
MonSchedule	boolean	Indicates if the schedule is to run on Monday
TueSchedule	boolean	Indicates if the schedule is to run on Tuesday
WedSchedule	boolean	Indicates if the schedule is to run on Wednesday
ThuSchedule	boolean	Indicates if the schedule is to run on Thursday
FriSchedule	boolean	Indicates if the schedule is to run on Friday
SatSchedule	boolean	Indicates if the schedule is to run on Saturday
SunSchedule	boolean	Indicates if the schedule is to run on Sunday
SingleImport	boolean	Indicates if the import is just to happen once. If false this indicates the import is to be repeated as defined by the repeat parameters in the table
ScheduleTime	time	The time in the day the schedule will run if the import is only to be run once
RepeatFromTime	time	This is the time from which the import process will start repeating at an interval set by RepeatMins
RepeatToTime	time	This is the time which the import process will stop repeating.
RepeatMins	int	The number of minutes the import process is to be repeated between the RepeatFromTime and the RepeatToTime
ScheduleEnabled	boolean	Indicates if the schedule is enabled and will be run

7.3.2 TBLIMPORTHISTORY

This table contains the historical information of past import processes.

7.3.2.1.1 STRUCTURE

Field	Type	Comment
TenantID	nvarchar(10)	Contains the unique tenant ID
ImportDirectory	nvarchar(80)	The name of the directory in which the data files used during the import process will be located. This directory location is expressed relative to the root directory of each tenant.
Filename	nvarchar(160)	The filename of the file that was imported
ListDefinitionName	nvarchar(25)	The name of the list definition that is to be used for this scheduled import.
Listname	nvarchar(45)	The name of the list created as a result of the import process ***Note that the first 5 characters of this name contain the micro tenant indicator. This should not be displayed to users.***
StartDateTime	Date	The date and time the import started
EndTime	time	The time the import finished
ProcessedOK	long int	The number of records that were processed successfully. This figure needs to be >1,000,000
FailedRecords	long int	The number of records that failed to be imported

7.4 IMPORT FILE GENERATION PROCESS

The import process is made up of several steps. They are:

a) The creation of a new database table for the list as defined by the List Definition used for the import.
b) Reading the file and validating each field prior to inserting it into the table
c) Writing exceptions to the error log and error data file

7.4.1 TABLE CREATION

The table creation process creates a table for each list that is imported. The database in which the table is to be created is specified by the parameter **`ListDatabaseName`**.

When on demand imports are performed, a new table for the list is created each time. For Scheduled imports a new table for the list is created if specified when the scheduled import was created, otherwise the records are added to the existing table.

If the Scheduled import is configured to add records to the existing table for the list, but the table for the list does not exist, then a new table will be created. This condition will not raise an error.

The table structure for the database table is determined by the List Definition that is associated with the import process.

Note that in addition to the fields specified in the List Definition, additional fields must be added to the table for the list to record the details about the contact.

The additional fields that are to be **INSERTED** at the start of the list are:

Field	Type	Comment
Record_Num	int	NOT NULL,
Account_Number	varchar(10)	NOT NULL,

The additional fields that are to be **ADDED** at the end of the list are:

Field	Type	Comment
Area_c	nchar(3)	NULL,
TimeZone_Id	int	NULL,
Dial_Count	int	NULL,
Call1_Phone	varchar(32)	NULL,
Call1_dt	datetime	NULL,
Disp1_Id	int	NULL,
Agent1_c	nvarchar(16)	NULL,
Call2_Phone	varchar(32)	NULL,
Call2_dt	datetime	NULL,
Disp2_Id	int	NULL,
Agent2_c	nvarchar(16)	NULL,
Call3_Phone	varchar(32)	NULL,
Call3_dt	datetime	NULL,
Disp3_Id	int	NULL,
Agent3_c	nvarchar(16)	NULL,

Field	Type	Comment
Callback_dt	datetime	NULL,
Callback_Phone	varchar(32)	NULL,
DoNotCall	nchar(1)	NULL,
DynaOrder	int	NULL,
Phone1TimeZoneId	int	NULL,
Phone2TimeZoneId	int	NULL,
Phone3TimeZoneId	int	NULL,
Call4_Phone	varchar(32)	NULL,
Phone4TimeZoneId	int	NULL,
Call4_dt	datetime	NULL,
Disp4_Id	int	NULL,
Agent4_c	nvarchar(16)	NULL,
Call5_Phone	varchar(32)	NULL,
Phone5TimeZoneId	int	NULL,
Call5_dt	datetime	NULL,
Disp5_Id	int	NULL,
Agent5_c	nvarchar(16)	NULL,
Call6_Phone	varchar(32)	NULL,
Phone6TimeZoneId	int	NULL,
Call6_dt	datetime	NULL,
Disp6_Id	int	NULL,
Agent6_c	nvarchar(16)	NULL

7.4.2 File Read and Field Validation

Once the table for the list has been created, the import file will be read and the records parsed into the database.

The list definition file will identify whether there will be a header and footer file in the import file that need to be ignored.

Prior to inserting each record into the database, each field in the record needs to be checked against the constraints document in the List Definition. The two checks are a check against the Validation specified in the List Definition for the field and a check against the Allow Blank criteria specified for the field in the List Definition.

In a fixed width file, all lines should be of equal length, summing up to the total of the defined field lengths.

In a CSV file, the number of fields on each row must match the number of defined fields.

If the record fails a validation then it should be written out to the ".errordata" file and an entry written into the ".errorlog" file.

When one error is detected, the remainder of the record should be skipped and the import process should continue to attempt to import the next record.

7.4.3 ARCHIVING IMPORTED FILE

As part of the import process, once the file has been imported it is automatically moved to a sub directory called "**`Imported`**". This directory is automatically created if it doesn't exist.

Before moving the file into this directory, the file name is prepended with the following text: "Imported on yyyymmdd hhmm -". This text is prepended to the file name to ensure that it is unique. Once the file has been renamed, it should be moved into the **`Imported`** subdirectory.

The complete file is moved into the **`Imported`** directory. Records that have failed the import are copied into the .errordata file that is generated.

7.4.4 ERROR LOG GENERATION

The error log is created with the same name and in the same directory as the file being imported, but with a ".errorlog" extension. The error log file contains information about all the records that failed the import process.

The entry in the error log should be in the following format.

`Failed import on field XX<`***`tab`***`><`***`Original Record`***`>`

Where

XX	represents the first field that failed the validation test,
<***tab***>	represents a tab character
<***Original Record***>	represents the complete original record

The data from the records that filed the import process are also written to a file with the same name as the original file but with a ".errordata" extension. The failed records are placed in this file so that they can be manually edited, then imported again once the file is renamed.

7.4.5 IMPORTED DIRECTORY AUTO DELETION PROCESS

An Auto Delete process is to be created to delete files in the Imported subdirectory automatically after a fixed number of days. The number of days is defined by the parameter **`ImportedFileDeleteDays`**.

7.4.6 IMPORT MODULE RIBBON FUNCTIONS ACCESS CONTROL (FUTURE)

Access to any of the features on the ribbon bar is determined by the access control provided to the user. The access control determines whether each of the functions on the ribbon bar are accessible to users. If they aren't accessible to users, buttons on the ribbon bar are shown in their disabled state.

Also in future versions, we should provide more information on why importing fails.

7.5 AUDIT LOG

The following actions will be written to an Audit log which is committed to a database. This database is common to all tenants

Each entry in the audit log consists of three parameters. They are

Field	*Size*	*Comments*
User	nvarchar(20)	The user id of the person that performed the action
Tenant	nvarchar(10)	The tenancy that the user belongs to
Date Time	date time	Records when the action occurred in GMT format
Module	nvarchar(40)	Indicates the module from which audit logs were generated (e.g. File Manager)
Description	nvarchar(250)	A text description of the action taken by the user

The messages in audit log are to have the following formats for each of the functions below. A separate entry is to be created in the audit log for the action performed on each file. For example if multiple scheduled imports are deleted, then an individual entry is to be placed in the audit log for each individual scheduled import.

7.5.1 AUDIT MODULE ENTRY

Module Import Export – Import

7.5.2 AUDIT MODULE DESCRIPTION

Add	Scheduled Import using <***List Definition***> from <***Directory***> with parameters <***Scheduled Days***> <***Time***> <***Enabled***> was added
Edit – Cancel	Scheduled Import using <***List Definition***> from <***Directory***> with parameters <***Scheduled Days***> <***Time***> <***Enabled***> was edited but no changes were made
Edit- Save	Scheduled Import using <***List Definition***> from <***Directory***> with parameters <***Scheduled Days***> <***Time***> <***Enabled***> was edited and changes were saved
Deleted	Scheduled Import using <***List Definition***> from <***Directory***> with parameters <***Scheduled Days***> <***Time***> <***Enabled***> was deleted

7.5.3 AUDIT LOG LOCATION & STRUCTURE

Audit logs are to be written to a central database

7.6 IMPORT CONFIGURATION PARAMETERS

The following configuration parameters stored on per tenant basis are required for the Import module.

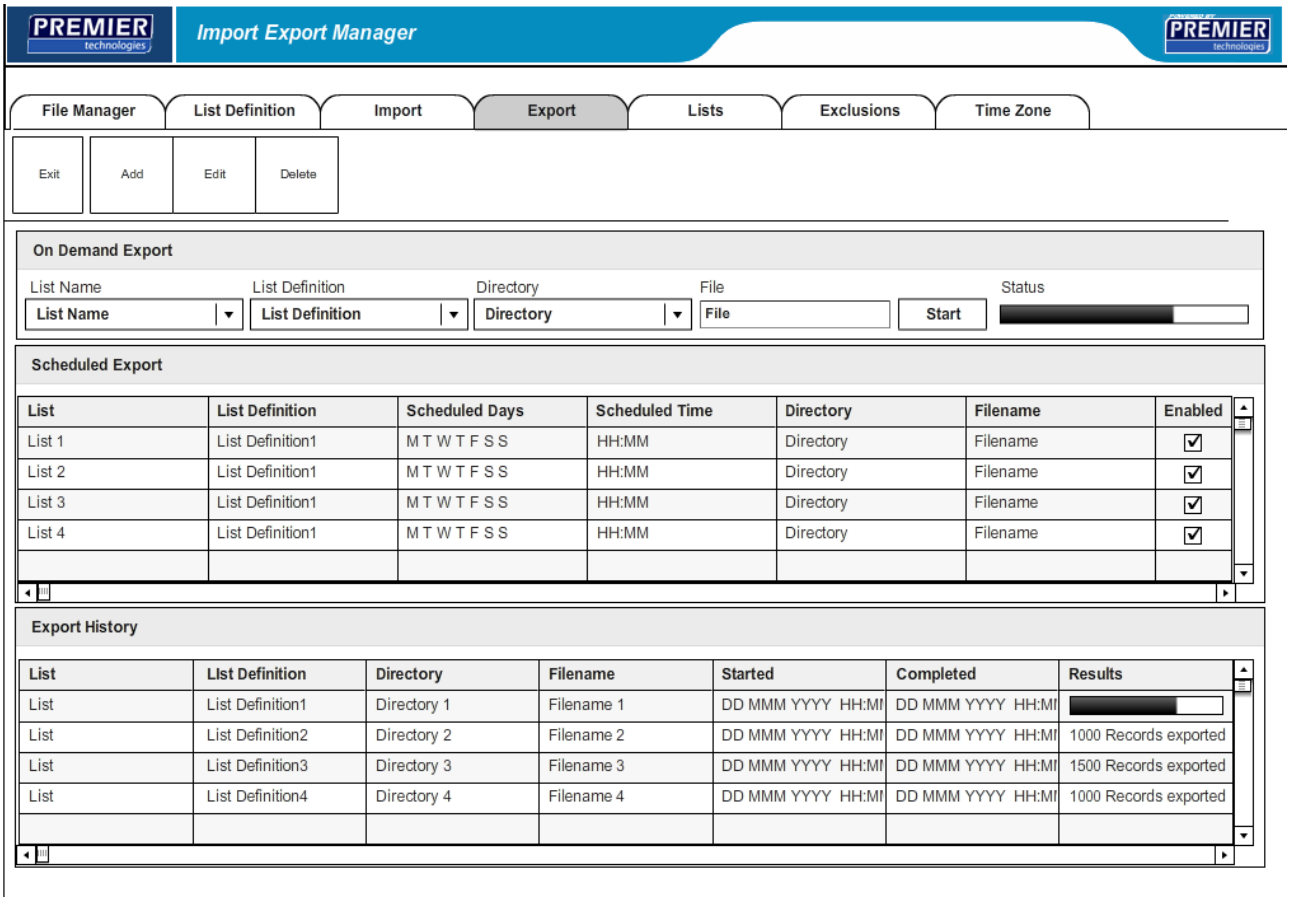
These configuration items are stored are found in the tenant configuration database.

Parameter	*Type*	*Default*	*Comments*
ImportedFileDeleteDays	int	7	The full file path of the file store location allocated to the tenant.
ListDatabaseName	nvarchar(60)		The name of the database in which tenant lists are created.

8 EXPORT TAB

The export module allows users to export the data from lists to flat files for archiving or processing on other platforms.

The export tab allows users to export a list on demand as well as scheduling an export. This tab also includes a historical log of exports that have been conducted in the past.



8.1 EXPORT PANEL

The Export panel consists of three sections detailed below.

8.1.1 ON DEMAND EXPORT

The On demand export panel allows a user to export a list immediately.

To action an export on demand, the use must select the list name from the available lists on the platform.

A list definition must be selected once again using a drop down list of list definitions that have been created.

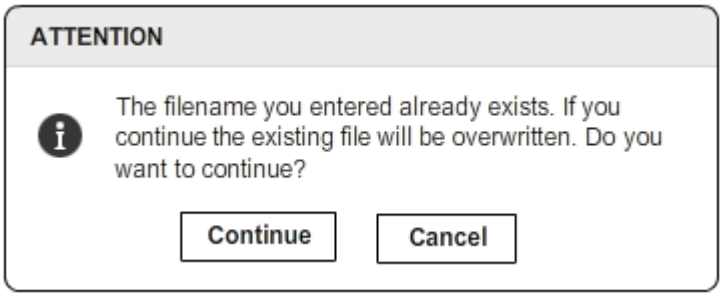
A directory into which the list will be exported needs to be specified. The directory can be selected from a drop down list. The drop down list should contain the root directory at the top of the drop down list followed by all the sub directories in alphabetical order.

When this panel is populated the root directory for the tenant is selected in the directory drop down list by default.

The file name to be created must then be specified by the user. The file name must be unique and not include spaces.

Once these details have been entered, the user should click on the start button to initiate the export.

The filename must be validated to ensure that it is unique. If a file already exists by that name a pop up warning will be displayed to the user advising them that the file name they entered already exists. If the user continues, the file specified by the filename they entered will be deleted and the list they specified exported to a new file with the specified filename.



While the list is being exported a progress bar should show the progress of the list export. When the export is complete, the progress bar should be replaced with the text “Completed hh:mm” where hh:mm is the time the list export was completed.

8.1.2 SCHEDULED EXPORT

The Scheduled Export panel lists the scheduled exports that have been configured through the use of the Add, Edit and Delete icons on the ribbon bar. By default the Scheduled export grid is ordered by Scheduled time in ascending order.

The Scheduled Export process extracts the data from the specified list and saves all the data into the nominated directory using the file name specified.

The columns in the Scheduled Import grid are as follows.

List	Defines the list that will be exported.
List Definition	Defines the List Definition structure to be used by the scheduled export process.
Scheduled Days	Defines the days of the week when the export will take place.
Scheduled Time	Defines the time when the export will take place. Only one time can be nominated per schedule. **If a file is to be exported multiple times a day, then a scheduled export entry is to be created for each time that an export is to take place.**
Directory	Identifies the directory into which the list will be exported
Filename	The file name of the file being exported.
Enabled	This option allows defined Export Schedules to be enabled and disabled without having to remove them from the Scheduled export list. The scheduled export process will only take place if the Enabled check box is ticked.

8.1.3 EXPORT HISTORY

The Export History grid lists the all past exports and scheduled exports in progress. It serves as a record of all Exports and is sorted by default in reverse order based on the date the export was started.

The Export History grid can be sorted on all fields other than the results field.

Data about an On Demand export is added to this grid only when the On Demand export has been completed.

Data about scheduled exports is added to this grid the moment the scheduled export starts. While the export is in progress, a progress bar will be shown in the results. When the export has been completed the Results field will display the following.

XXX Records exported

Where:

XXX represents the number of records exported.

If there are errors, then the number of errors is followed by the phrase “See error log file.”

The columns in the Export History grid are as follows.

List	Defines the list that was exported.
List Definition	Defines the List Definition structure that was used by the scheduled import process.
Directory	Identifies the directory in which the imported files were found.
File Name	The name of the file that was exported.
Started	The date and time when the export process was started
Completed	The date and time when the export process was completed. This field is blank if the export process is still in progress
Results	Displays progress of scheduled exports and the number of record exported

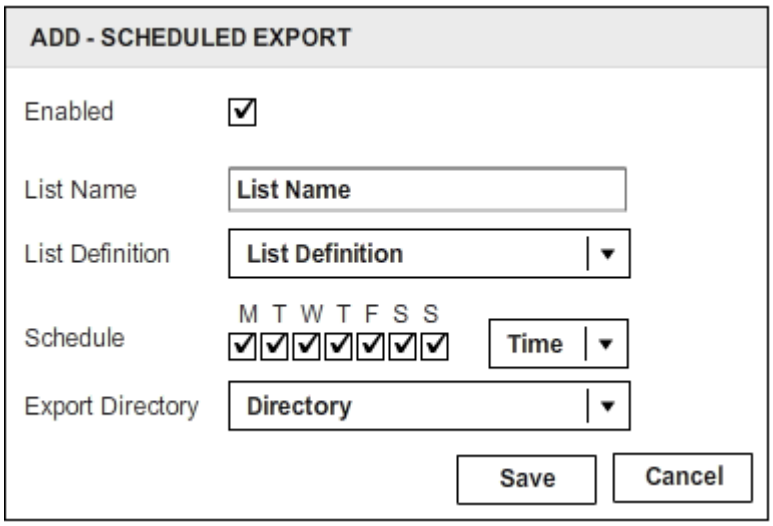
8.2 EXPORT MODULE RIBBON

8.2.1 EXIT

The exit button returns the user to the main menu

8.2.2 ADD

This option adds a new scheduled export. When the option to add a new export schedule is selected a pop up window is provided titled ADD – SCHEDULED EXPORT



The pop up consists of the following elements.

8.2.2.1 ENABLED

A check box is provided to indicate whether the scheduled export is enabled or not. The schedule only runs if the check box is ticked. This allows a scheduled export to be defined without putting it in production.

8.2.2.2 LIST NAME

The list name allows the user to enter the name of the list. To be exported. The user does not have to include the micro tenancy indicator which is automatically added to the list name as part of the import process.

List names can only contain letters (a..z, A..Z) , underscore, dash and numbers, other special characters are not permitted.

8.2.2.3 LIST DEFINITION

The user can select the list definition to be used to interpret the data file from the drop down list. This drop down list should be populated from **`tblListDefinition`**. The key ListDefinitionName should be shown in the drop down list.

8.2.2.4 SCHEDULE

The schedule allows the user to select the days of the week the export is to be performed. The default value for these check boxes is to have Monday to Friday selected and Saturday and Sunday unselected.

The user is also able to specify the time during the day that the export will be performed. The default value for the time is to be set to 8pm.

In all the time drop down lists, the time format will start be as follows. The time entries will start with 12:00 midnight, 12:10 am, 12:20 am through to 11:50 am, 12:00 midday, 12:10 pm, 12:20 pm and finishing at 11:50 pm. Note that times are entered by the user in their time zone, however time should be stored in GMT in the database.

8.2.2.5 EXPORT DIRECTORY

The user can select the directory into which the data will be exported. A drop down list is provided with all the sub directories allocated to the tenant.

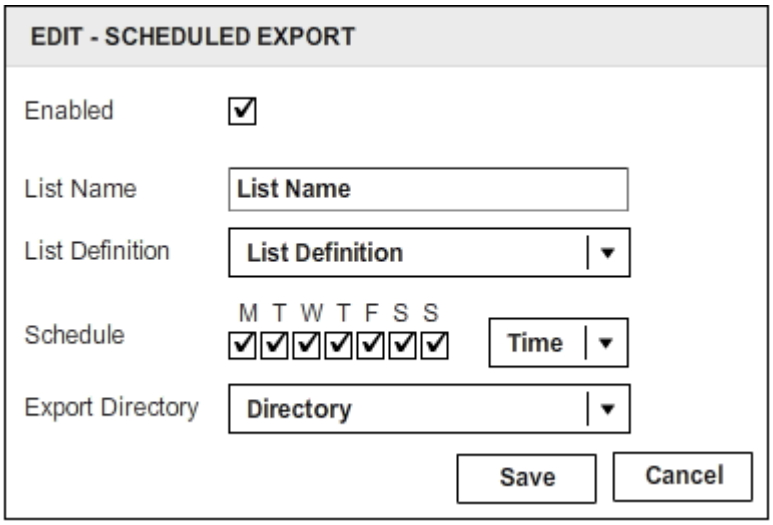
Note that this drop down list must EXCLUDE the sub directory called **`Imported`**. This is a special directory into which files that have been loaded into the list are archived to.

8.2.2.6 COMMAND BUTTONS

There are two command buttons which are used to save the changes and close the pop up or cancel and close the popup.

8.2.3 EDIT

This option allows the user to edit a scheduled export. When the option to edit an export schedule is selected a pop up window is provided titled EDIT – SCHEDULED EXPORT



The pop up is presented with all the existing details populated in the form. The same validation rules apply when a schedule is edited as described in the previous section when a new schedule is added.

8.3 EXPORT DATABASE TABLE STRUCTURES

8.3.1 TBLEXPORTSCHEDULE

This table contains the definition of the Export schedule

8.3.1.1.1 STRUCTURE

Field	Type	Comment
TenantID	nvarchar(10)	Contains the unique tenant ID
ListName	Nvarchar(25)	The name of the list to be exported ***Note that the first 5 characters of this name contain the micro tenant indicator. This should not be displayed to users.***
ListDefinitionName	nvarchar(25)	The name of the list definition that is to be used for this scheduled export.
MonSchedule	boolean	Indicates if the schedule is to run on Monday
TueSchedule	boolean	Indicates if the schedule is to run on Tuesday
WedSchedule	boolean	Indicates if the schedule is to run on Wednesday
ThuSchedule	boolean	Indicates if the schedule is to run on Thursday
FriSchedule	boolean	Indicates if the schedule is to run on Friday
SatSchedule	boolean	Indicates if the schedule is to run on Saturday
SunSchedule	boolean	Indicates if the schedule is to run on Sunday
ScheduleTime	time	The time in the day the schedule will run
ExportDirectory	nvarchar(80)	The name of the directory into which the data files used during the import process will be located. This directory location is expressed relative to the root directory of each tenant.
Filename	nvarchar(160)	The filename of the file into which the data will be exported.
ScheduleEnabled	boolean	Indicates if the schedule is enabled and will be run

8.3.2 tblExportHistory

This table contains the historical information of past import processes.

8.3.2.1.1 Structure

Field	Type	Comment
TenantID	nvarchar(10)	Contains the unique tenant ID
Listname	nvarchar(45)	The name of the list created as a result of the import process ***Note that the first 5 characters of this name contain the micro tenant indicator. This does not have to be entered by the users.***
ListDefinitionName	nvarchar(25)	The name of the list definition that is to be used for this scheduled export.
ExportDirectory	nvarchar(80)	The name of the directory in which the data files will be placed during the export process. This directory location is expressed relative to the root directory of each tenant.
Filename	nvarchar(160)	The filename of the export file
StartDateTime	Date	The date and time the import started
EndTime	time	The time the import finished
ProcessedOK	long int	The number of records that were processed successfully. This figure needs to be >1,000,000

8.4 Export File Generation Process

The export process reads the table associated with the list and dumps the data into a file as specified in the list definition.

The Export process uses the List Definition in reverse and creates the same type (fixed length, delimited or excel) as used during the import process.

8.4.1 Include Header Record

If the list definition specifies to include a header record, the export process should write a header record as the first record in the export file.

The field names in the list should be used as the header content.

8.4.2 Include Contact Fields on Export

If the list definition specifies to export the contact fields, then these additional fields should be added after the fields defined in the list definition.

8.4.3 Export Module Ribbon Functions Access Control (FUTURE)

Access to any of the features on the ribbon bar is determined by the access control provided to the user. The access control determines whether each of the functions on the ribbon bar are accessible to users. If they aren't accessible to users, buttons on the ribbon bar are shown in their disabled state.

8.5 AUDIT LOG

The following actions will be written to an Audit log which is committed to a database. This database is common to all tenants

Each entry in the audit log consists of three parameters. They are

Field	*Size*	*Comments*
User	nvarchar(20)	The user id of the person that performed the action
Tenant	nvarchar(10)	The tenancy that the user belongs to
Date Time	date time	Records when the action occurred in GMT format
Module	nvarchar(40)	Indicates the module from which audit logs were generated (e.g. File Manager)
Description	nvarchar(250)	A text description of the action taken by the user

The messages in audit log are to have the following formats for each of the functions below. A separate entry is to be created in the audit log for the action performed on each file. For example if multiple export schedules are deleted, then an individual entry is to be placed in the audit log for each individual export schedule.

8.5.1 AUDIT MODULE ENTRY

Module Import Export – Export

8.5.2 AUDIT MODULE DESCRIPTION

Add	Scheduled Export of <***List***> using <***List Definition***> into <***Filename***> located in directory <***Directory***> with parameters <***Scheduled Days***> <***Time***> <***Enabled***> was added
Edit – Cancel	Scheduled Export of <***List***> using <***List Definition***> into <***Filename***> located in directory <***Directory***> with parameters <***Scheduled Days***> <***Time***> <***Enabled***> was edited but no changes were made
Edit- Save	Scheduled Export of <***List***> using <***List Definition***> into <***Filename***> located in directory <***Directory***> with parameters <***Scheduled Days***> <***Time***> <***Enabled***> was edited and changes were saved
Deleted	Scheduled Export of <***List***> using <***List Definition***> into <***Filename***> located in directory <***Directory***> with parameters <***Scheduled Days***> <***Time***> <***Enabled***> was deleted

8.5.3 AUDIT LOG LOCATION & STRUCTURE

Audit logs are to be written to a central database

8.6 EXPORT CONFIGURATION PARAMETERS

The following configuration parameters stored on per tenant basis are required for the Export module. These configuration items are stored are found in the tenant configuration database.

Parameter	*Type*	*Default*	*Comments*
ListDatabaseName	nvarchar(60)		The name of the database in which tenant lists are located.

9 LISTS

The Lists module displays the number of lists currently loaded on the platform as well as the number of records in each list.

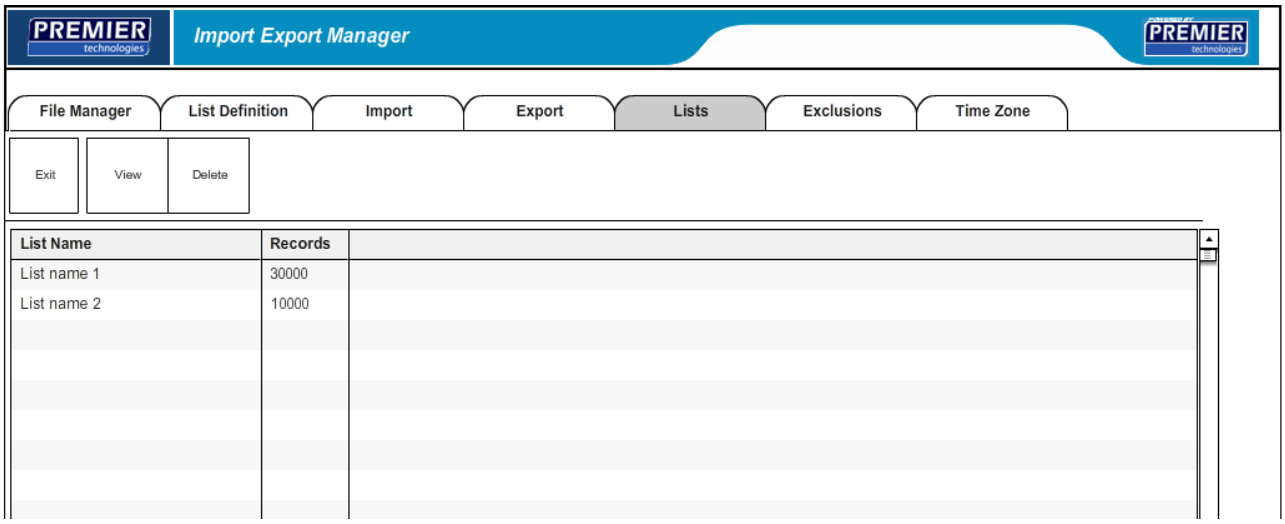
9.1 LISTS GRID

On entry to the Lists tab, the grid is refreshed with all the Lists that are found in platform for that tenant. The database name in which the lists are located is provided by the parameter **`ListDatabaseName`** which is sourced from the tenant configuration settings database.

Space for a vertical scroll bar is to be provisioned in the screen layout regardless of whether it is required.

Only one record at a time can be selected on the grid. Multiple selections are not permitted. To either view or delete a list, the user must select the list first then click on the icon in the ribbon bar for the operation they require.

9.2 LISTS TAB AND RIBBON

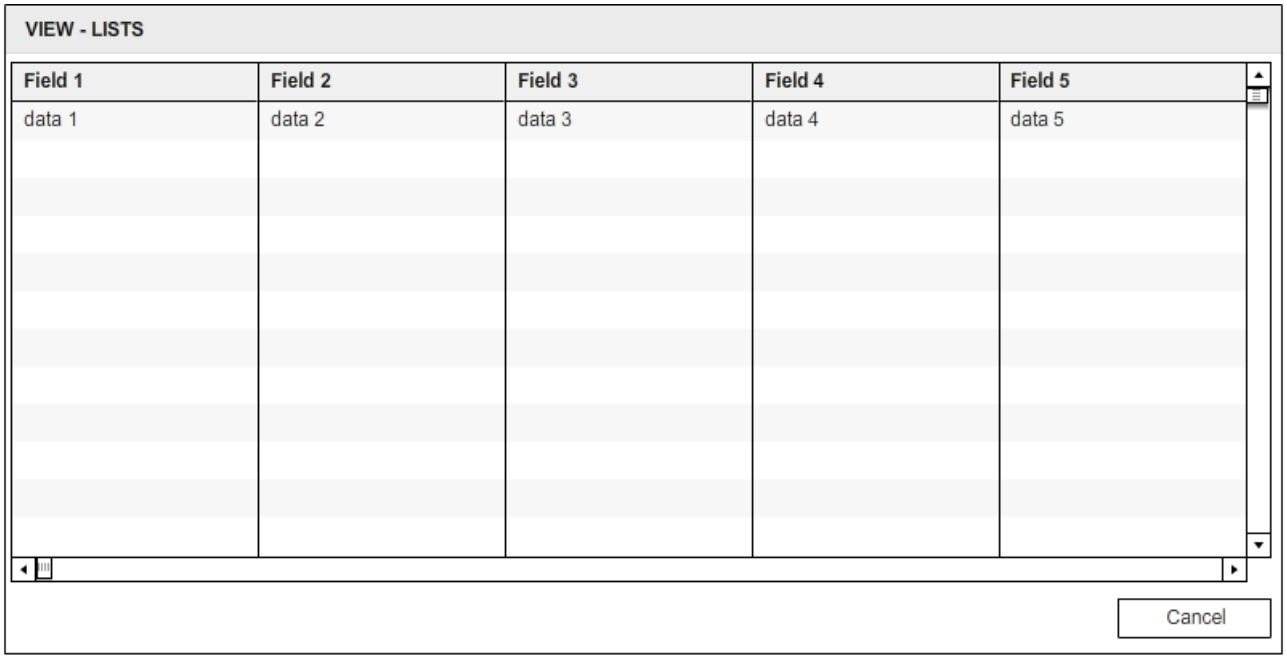


9.2.1 EXIT

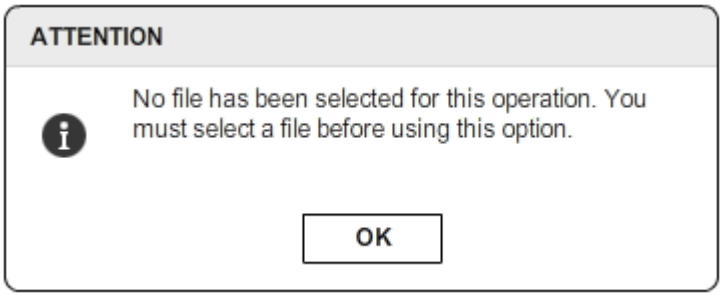
The exit button returns the user to the main menu

9.2.2 VIEW

This option allows a user to view a list they selected without the ability to edit the contents of the list. The file is viewed through a pop up window. The window will have a Cancel button at the bottom right hand corner.



If no files have been selected when this operation is chosen a pop up message is displayed with the following message.



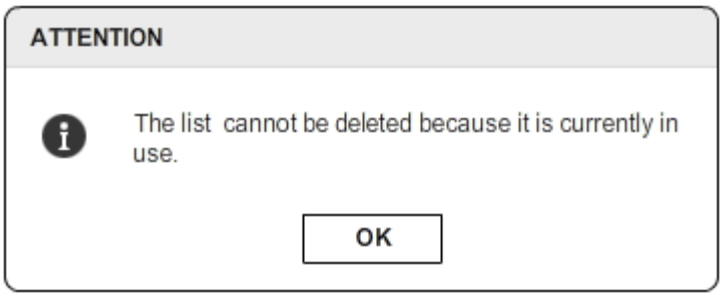
9.2.2.1 CANCEL

When viewing a file, the pop up window will have a Cancel option. This will allow users to close the file viewer window.

9.2.3 DELETE

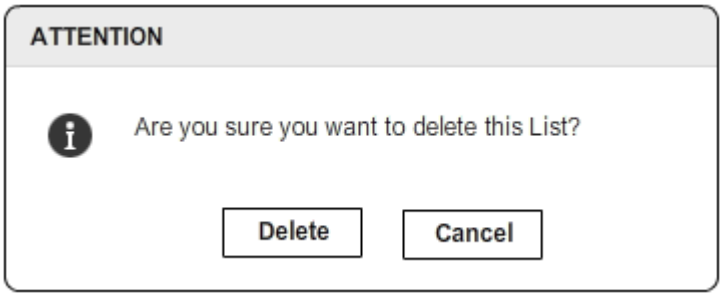
This option will allow users to delete files. One or more files may be selected for this operation.

If the list is currently in use a pop up will be presented to the user to advise them that the list cannot be deleted because it is still being used.

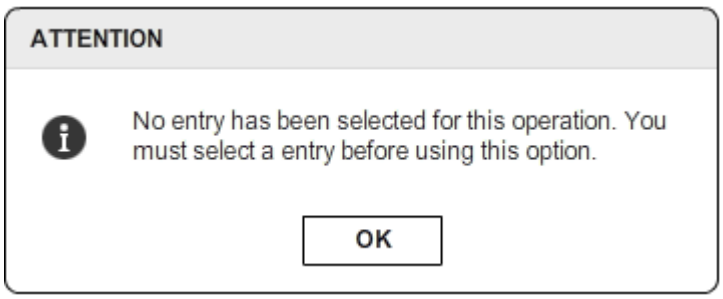


TO BE DONE
Confirm how to tell whether a list is currently being used.

If the list is not currently being used, then it is eligible to be deleted. A pop up warning will always be presented to the user with the following message.



If no list has been selected when this operation is chosen a pop up message is displayed with the following message.



9.2.4 Lists Ribbon Functions Access Control (FUTURE)

Access to any of the features on the ribbon bar is determined by the access control provided to the user. The access control determines whether each of the functions on the ribbon bar are accessible to users. If they aren't accessible to users, buttons on the ribbon bar are shown in their disabled state.

9.3 Audit Log

The following actions will be written to an Audit log which is committed to a database. This database is common to all tenants

Each entry in the audit log consists of the following parameters:

Field	*Size*	*Comments*
Tenant	nvarchar(10)	The tenancy that the user belongs to
User	nvarchar(20)	The user id of the person that performed the action
Date Time	date time	Records when the action occurred in GMT format
Module	nvarchar(40)	Indicates the module from which audit logs were generated (e.g. File Manager)
Description	nvarchar(250)	A text description of the action taken by the user

The messages in audit log are to have the following formats for each of the functions below. A separate entry is to be created in the audit log for the action performed on each file. For example if multiple lists are deleted, then an individual entry is to be placed in the audit log for each individual list.

9.3.1 Audit Module Entry

Module Import Export - Lists

9.3.2 Audit Module Description

View List <***list name***> was viewed
Deleted List <***list name***> was deleted

9.3.3 Audit Log Location & Structure

Audit logs are to be written to a central database

9.4 Lists Configuration Parameters

The following configuration parameters stored on per tenant basis are required for the Lists module.

These configuration items are stored are found in the tenant configuration database.

Parameter	*Type*	*Default*	*Comments*
ListDatabaseName	nvarchar(60)		The name of the database in which tenant lists are located.

10 EXCLUSIONS

The Exclusions module allows users to manage the Exclusions currently loaded on the platform. Users can add, edit and delete individual exclusions as well as import and export the complete exclusions list.

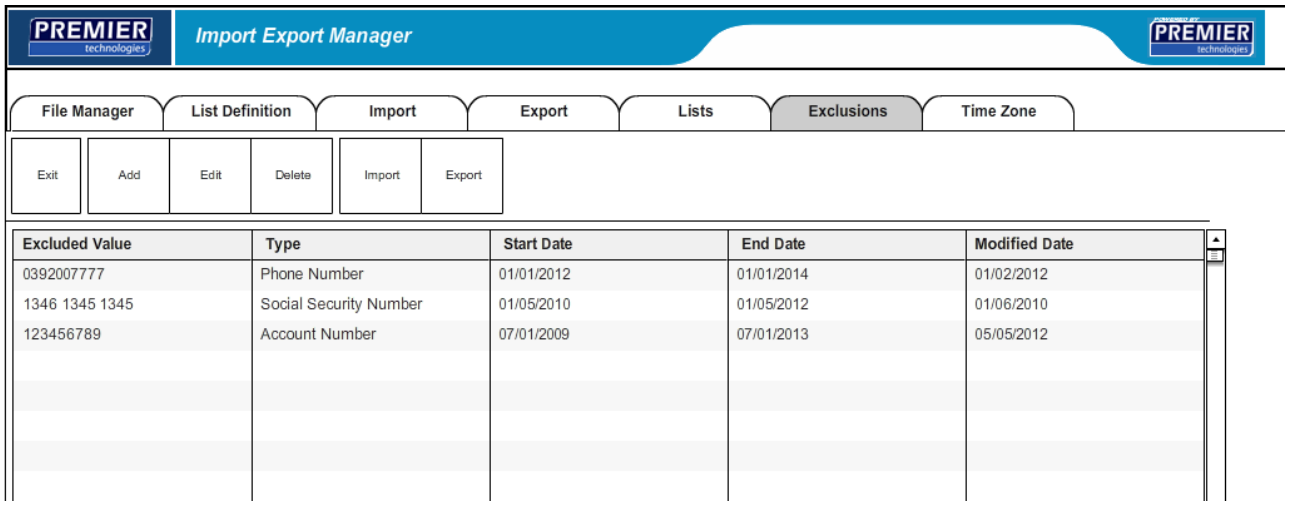
10.1 EXCLUSIONS GRID

On entry to the Exclusions tab, the grid is refreshed with all the Exclusions that are found in platform for that tenant.

Space for a vertical scroll bar is to be provisioned in the screen layout regardless of whether it is required.

Only one record at a time can be selected on the grid. Multiple selections are not permitted. To either view or delete a list, the user must select the list first then click on the icon in the ribbon bar for the operation they require.

10.2 EXCLUSIONS TAB AND RIBBON



10.2.1 EXIT

The exit button returns the user to the main menu

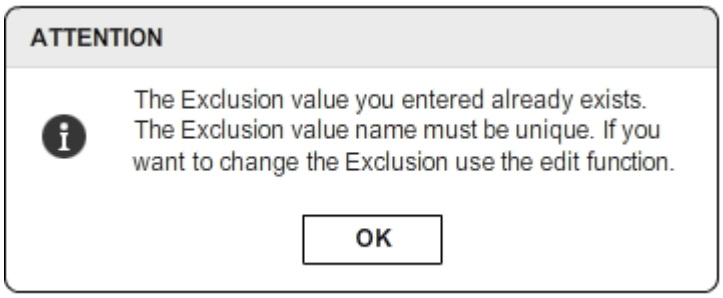
10.2.2 ADD

This option allows a user to add an Exclusion value. To add an exclusion, the exclusion value must be supplied along with an identifier for the type of exclusion. Valid types are Phone number, Account number of Social Security Number. When this option is selected a pop up is presented with the title ADD - EXCLUSION.

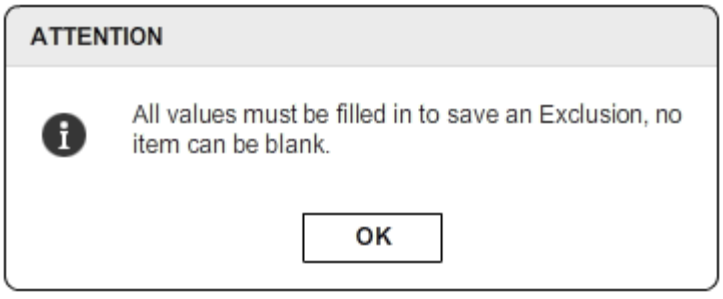
The Start date and End date over which the exclusion applies must also be entered. The default value for the start date is today and the end date is three years from today. The end date must be after the start date.

Once the start date has been changed, the end date should be checked and if it is less than the start date it should be changed to be equal to the start date. Similarly when the end date is changed, the start date should be checked. If the start date is after the end date, the start date should be changed to be equal to the end date. Dates cannot be blank, they must contain valid data.

If the user enters an exclusion value that already exists, the following pop up will be displayed.



Both the exclusion value and the exclusion type must be entered. If any item is blank when attempting to add the exclusion, the following message must be displayed.



10.2.3 EDIT

This option allows a user to edit an Exclusion vale. When editing an Exclusion value, only the dates can be changed. The exclusion value and type are fixed once they've been entered. If the users wants to change these items, they should delete the exclusion and add a new one.

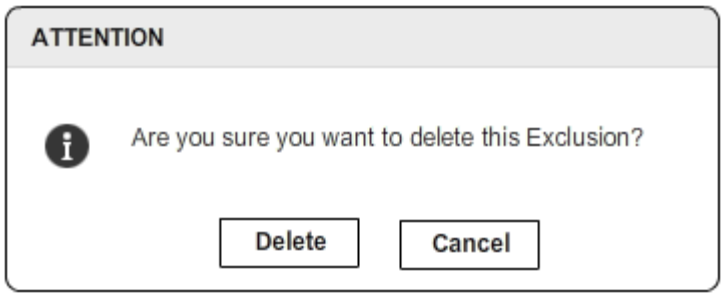
The Start date and End date over which the exclusion applies must also be entered. The default value for the start date is today and the end date is three years from today. The end date must be after the start date.

Once the start date has been changed, the end date should be checked and if it is less than the start date it should be changed to be equal to the start date. Similarly when the end date is changed, the start date should be checked. If the start date is after the end date, the start date should be changed to be equal to the end date. Dates cannot be blank, they must contain valid data.

If no exclusion has been selected when this operation is chosen a pop up message is displayed with the following message.

10.2.4 DELETE

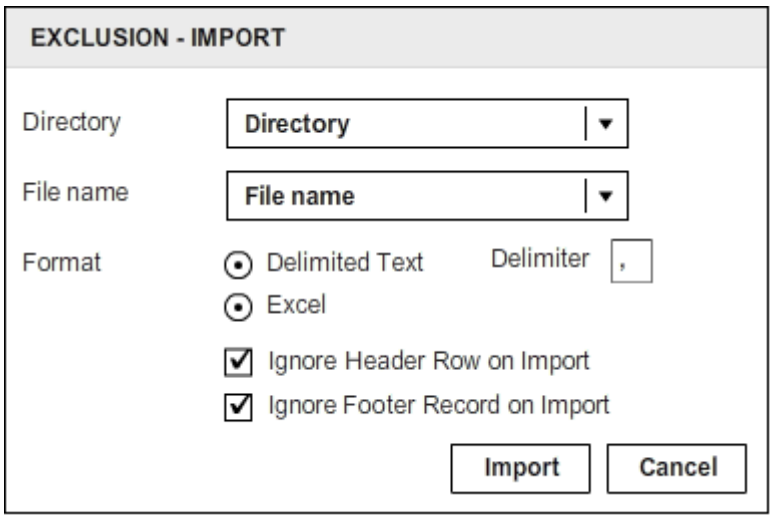
This option will allow users to delete an Exclusion entry. Only one entry at a time can be deleted. When the delete operation is used a warning message will be presented to the user.



If no exclusion has been selected when this operation is chosen a pop up message is displayed with the following message.

10.2.5 IMPORT

The Exclusion import function allows the user to import a bulk list of exclusions. The exclusions have to be formatted correctly but can be in either delimited text format or Excel format. When this option is selected the following pop up is presented to the user.



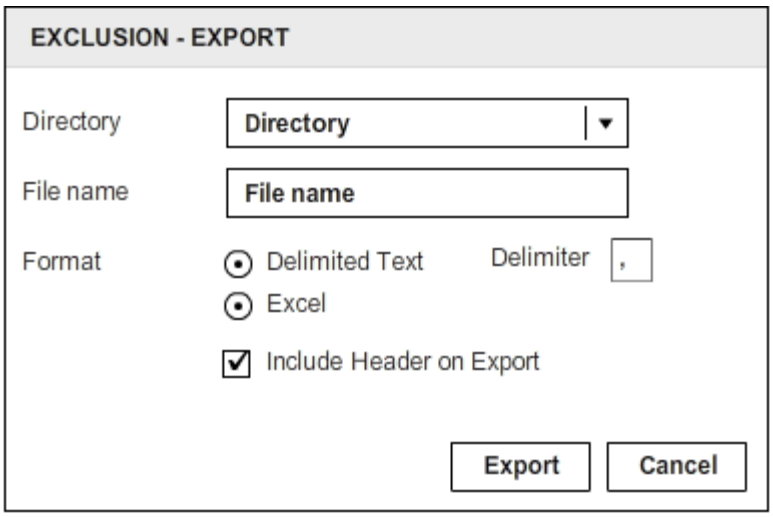
The user must specify the directory that the exclusion file is to be found. The directory can be selected from a drop down list. This list should have the root directory for the tenancy first, then all the sub directories in alphabetical order.

The filename must also be specified. This can be selected from the drop down list. This list should show all the files in the nominated directory.

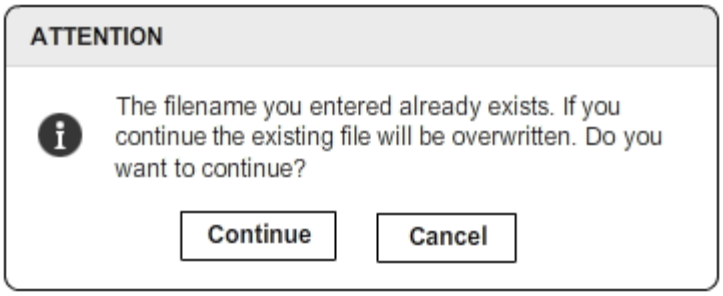
The user is given the option to specify the file the file format and whether to ignore the first or last record in the file as being headers or footers

10.2.6 EXPORT

The exclusion export function allows users to export the exclusion list to a file. When this option is selected, the following pop up is presented to the user.



The user can select the format of the file and whether to include a header record in the export. The file name of the export file must be unique. If a file already exists with this name, the following message will be presented to the user. If they elect to continue the export will over write the exiting file.



10.2.7 LISTS RIBBON FUNCTIONS ACCESS CONTROL (FUTURE)

Access to any of the features on the ribbon bar is determined by the access control provided to the user. The access control determines whether each of the functions on the ribbon bar are accessible to users. If they aren't accessible to users, buttons on the ribbon bar are shown in their disabled state.

10.3 FUTURE FUNCTIONALITY

Record the User ID that added the exclusion and allow them to add a comment about why the exclusion was added.
Allow exclusions to be set by campaign rather than across all campaigns.

10.4 Exclusion Database Table Structures

10.4.1 Exclusion Table

The structure of the exclusion table is documented below. This table structure must be used to maintain backward compatibility with the existing platform.

Field	*Size*	*Comments*
Tenant	nvarchar(10)	The tenancy that the user belongs to
ExclusionTypeId	int	The type of exclusion **NOT NULL** 0 = None, 1 = Social Security Number, 2 = Account Number, 3 = Phone Number
ExclusionValue	nvarchar(40)	The value of the item being excluded **NOT NULL**
Application_Id	int	Unused, set to zero **NOT NULL**
StartDt	date time	The start date of the exclusion
EndDt	date time	The end date of the exclusion
ModifiedDt	date time	When the exclusion is updated
Record_num	numeric(10,0)	Integer going up to 10 digits in length **NOT NULL**

10.4.2 Future Additional Fields

These fields may be added in the future to provide more information about the exclusions

AppliedByUserID	ncarchar(20)	The user id of the person that applied the Exclusion
Comment	ncarchar(80)	Comments explaining why the exclusion was applied

10.5 AUDIT LOG

The following actions will be written to an Audit log which is committed to a database. This database is common to all tenants

Each entry in the audit log consists of the following parameters:

Field	*Size*	*Comments*
Tenant	nvarchar(10)	The tenancy that the user belongs to
User	nvarchar(20)	The user id of the person that performed the action
Date Time	date time	Records when the action occurred in GMT format
Module	nvarchar(40)	Indicates the module from which audit logs were generated (e.g. File Manager)
Description	nvarchar(250)	A text description of the action taken by the user

The messages in audit log are to have the following formats for each of the functions below. A separate entry is to be created in the audit log for the action performed on every Exclusion.

10.5.1 AUDIT MODULE ENTRY

Module Import Export - Exclusions

10.5.2 AUDIT MODULE DESCRIPTION

Add	Exclusion <***Type***> on <***Value***> from <***StartDt***> to <***EndDt***> was added
Edit	Exclusion <***Type***> on <***Value***> from <***StartDt***> to <***EndDt***> was edited but not saved.
Edit – Cancel	Exclusion <***Type***> on <***Value***> from <***StartDt***> to <***EndDt***> was edited but no changes were made
Edit- Save	Exclusion <***Type***> on <***Value***> from <***StartDt***> to <***EndDt***> was edited and changes were saved
Deleted	Exclusion <***Value***> was deleted

10.5.3 AUDIT LOG LOCATION & STRUCTURE

Audit logs are to be written to a central database

10.6 LISTS CONFIGURATION PARAMETERS

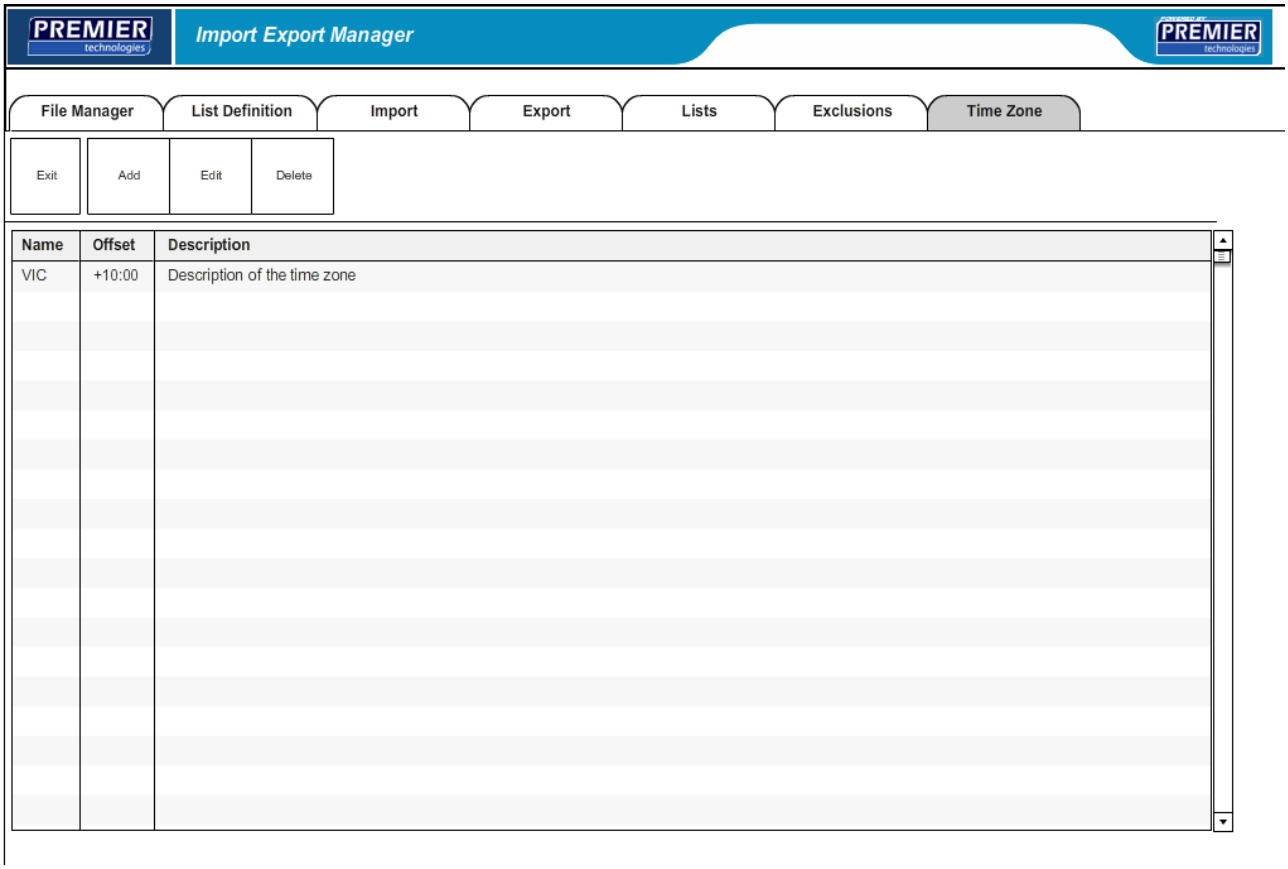
The following configuration parameters stored on per tenant basis are required for the Lists module.

These configuration items are stored are found in the tenant configuration database.

Parameter	*Type*	*Default*	*Comments*
ExclusionDatabaseName	nvarchar(60)		The name of the database in which tenant Exclusions are located.

11 TIME ZONE TAB

This tab allows users to manage the time zone values that are to be used within their tenancy.



11.1 TIME ZONE GRID

On entry to the Time Zone tab, the grid is refreshed with all the time zone entries that are defined for the tenant.

The columns in the grid are as follows from left to right.

Name	Time zone name
Offset	Time zone offset value
Description	Longer description of the time zone.

Space for a vertical scroll bar is to be provisioned in the screen layout regardless of whether it is required.

Users will only be allowed to select one row at a time on the grid. Multiple row selections are not permitted.

11.2 TIME ZONE RIBBON

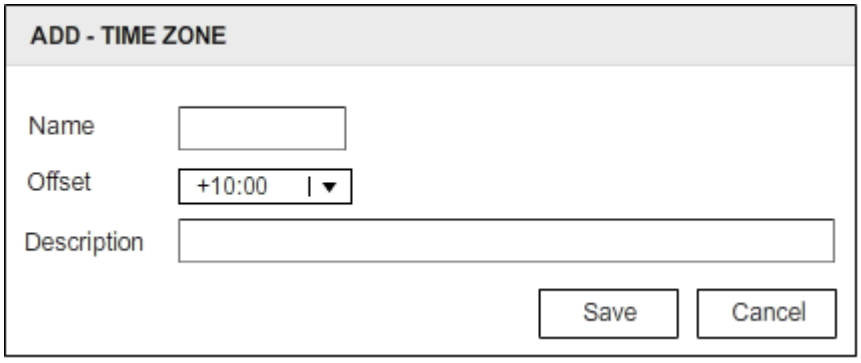
11.2.1 EXIT

The exit button returns the user to the main menu

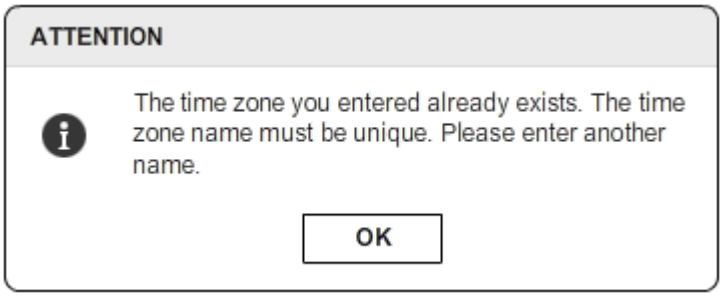
11.2.2 ADD

This option allows users to add a new time zone entry. When a user selects this option a pop up form appears which is to be used for managing time zones. The user will need to enter a unique name for the time zone entry and select an offset value from the drop down list.

The offset drop down list will be pre populated with offsets in half hour increments from -12:00 to +12:00. The description is optional and can be entered by the user if required.

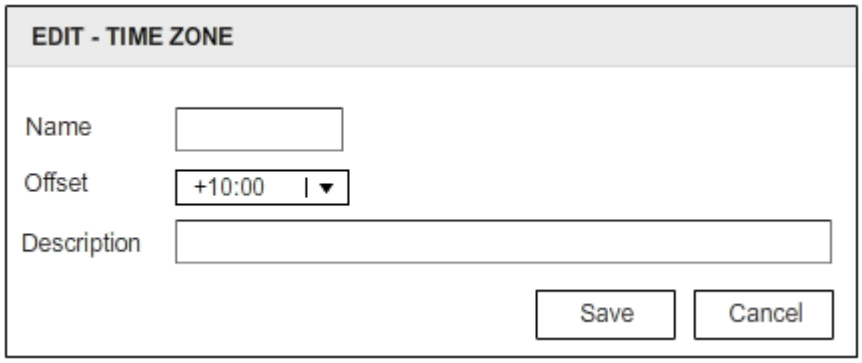


When the time zone entry is to be saved, the first check should be that the Name of the time zone is unique. If the name if not unique, a pop up error message should be presented to the user with the following message.



11.2.3 EDIT

The Edit function allows the selected time zone entry to be edited. When this option is selected the same pop up window that is used for the Add operation is used, however all the details of the time zone are pre populate in the form. The title of this pop up should be EDIT – TIME ZONE



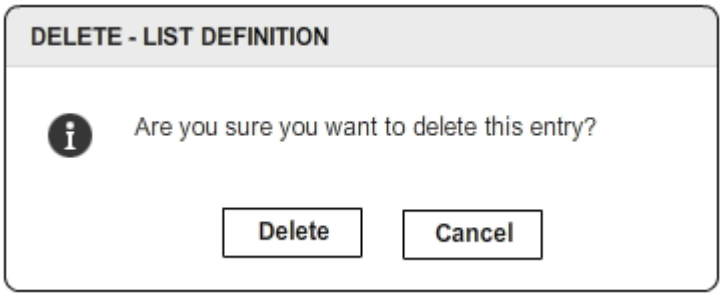
Note that the time zone Name CANNOT be edited. If the user wants to change the time zone name, they must add a new one. The Offset and Description fields are editable.

From this point, the same rules apply in relation to the uniqueness of the time zone Names as in the case of when a new time zone is added.

If the user selects this option without first highlighting a row in the grid, then the following pop up is displayed.

11.2.4 DELETE

This option allows users to delete a time zone entry.
A pop up warning will always be presented to the user with the following message.



If the user selects this option without first highlighting a row in the grid, then the following pop up is displayed.

11.2.5 Time Zone Ribbon Functions Access Control (FUTURE)

Access to any of the features on the ribbon bar is determined by the access control provided to the user. The access control determines whether each of the functions on the ribbon bar are accessible to users. If they aren't accessible to users, buttons on the ribbon bar are shown in their disabled state.

11.3 AUDIT LOG

The following actions will be written to an Audit log which is committed to a database. This database is common to all tenants

Each entry in the audit log consists of three parameters. They are

Field	*Size*	*Comments*
User	nvarchar(20)	The user id of the person that performed the action
Tenant	nvarchar(10)	The tenancy that the user belongs to
Date Time	date time	Records when the action occurred in GMT format
Module	nvarchar(40)	Indicates the module from which audit logs were generated (e.g. File Manager)
Description	nvarchar(250)	A text description of the action taken by the user

The messages in audit log are to have the following formats for each of the functions below. A separate entry is to be created in the audit log for the action performed on each entry. For example if multiple time zone entries are deleted, then an individual entry is to be placed in the audit log for each individual time zone entry.

Add	Time Zone <***name***> was added
Edit – Cancel	Time Zone <***name***> was edited but no changes were made
Edit- Save	Time Zone <***name***> was edited and changes were saved
Deleted	Time Zone <***name***> was deleted

11.3.1.1 AUDIT LOG LOCATION & STRUCTURE

Audit logs are to be written to a central database

11.4 TBLTIMEZONE TABLE

This table is populated with list of possible Timezones. It can be edited by users and contains all the time zone values for the tenancy.

Field	*Size*	*Comments*
Tenant	nvarchar(10)	The tenancy that the time zone entry belongs to
Name	nvarchar(20)	The short name of the time zone
Offset	nvarchar(6)	The offset value for the time zone
Description	nvarchar(60)	A text description of the time zone