

Recycle Bin for vtiger

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Introduction

The new feature 'Recycle Bin', for vtiger is much similar to the one in an operating system. In an operating system the recycle bin will hold the files or folders deleted from the file system whereas in vtiger, the recycle bin will hold all the deleted records in vtiger. This features is available for Accounts, Campaigns, Calendar, Contacts, Email, FAQ, Trouble Tickets, Invoice, Leads, Notes, Potentials, Price Books, Products, Purchase Order, Quotes, Reports, Sales Order and Vendors modules.

Usage

Recycle Bin feature has been supported for both admin as well as non-admin users.

For non-admin user -> Recycle Bin comes under **Tools** menu.

For admin user -> Recycle Bin comes under **Tools** Menu as well as in **Settings** under **Studio section**. Added feature for the admin user other than restoring the records is that the admin user can delete the records permanently from recyclebin.

The records are shown based on the module which it belongs to. Only the records of a particular module can be viewed at a time. We can select the module name from the drop down provided.

(Only for Admin user)

The screenshot displays the 'Settings > Recycle Bin' interface in vtiger CRM. The page title is 'Settings > Recycle Bin' and it includes a sub-header 'Contains the data you have deleted'. A search bar is present with a dropdown menu set to 'Account Name'. Below the search bar is a list of deleted records for the 'Accounts' module. The records are as follows:

<input type="checkbox"/>	Account Name	Billing City	Website	Phone	Action
<input type="checkbox"/>	EDFG Group Limited	San Francisco	www.edfgrouplimited.com	(870) 241-1117	restore
<input type="checkbox"/>	demovtiger	San Mateo	www.demovtiger.com	(478) 135-7041	restore
<input type="checkbox"/>	gooduivtiger	San Francisco	www.gooduivtiger.com	(971) 600-9393	restore

Buttons for 'Restore' and 'Empty Recycle Bin' are visible above and below the table. The page also shows a navigation menu on the left with 'Recycle Bin' selected under the 'Studio' section.

(Admin/Non-admin user)

<input type="checkbox"/>	Account Name	Billing City	Website	Phone	Action
<input type="checkbox"/>	EDFG Group Limited	San Francisco	www.edfggrouplimited.com	(870) 241-1117	restore
<input type="checkbox"/>	demovtiger	San Mateo	www.demovtiger.com	(478) 135-7041	restore
<input type="checkbox"/>	gooduivtiger	San Francisco	www.gooduivtiger.com	(971) 600-9393	restore

Records can be restored either individually or multiple records can be selected to restore at single shot, but within a given module. When a record from particular module is restored, all the related records from other modules are also restored automatically.

Admin user can deleted all the records from recycle bin permanently by clicking on 'Empty Recycle Bin' button.

Note:

1. Records deleted by admin by using 'Empty Recycle Bin' button, can never be restored back.
2. When records are deleted permanently from recycle bin, the relationship of those records with other entities are not cleaned up as of now. They are still there in the database though cannot be viewed from the CRM.

Recycle Bin module can be enabled/disabled at profile level. (See the snapshot below)

<input checked="" type="checkbox"/>	Campaigns	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	My Sites		
<input checked="" type="checkbox"/>	Recycle Bin		

* Mandatory Fields

* Fields Disabled from Global Field Access Settings

Save Cancel

Pending Features:

1. Module level Control -> For individual profile, we should be able to enable/disable Recycle bin at module level like Export/Import/Merge and not just at profile level
2. Individual and Mass delete options should be provided for the Admin user other than just Empty Recycle bin.
3. When records are permanently deleted from the database, all their related records should also be deleted (which is not done as of now).

Known Issues:

1. Any records deleted before integrating the recyclebin feature can be restored, but the related entities will not be restored.
2. When restoring any event, the related reminders and recurring events are not restored.
3. When restoring any entity, the tags previously associated with the entity are no more associated with it. (The tag is also deleted if its not associated with any other entity).

Design Details

Deleted records of any module is not actually deleted from the database but marked as deleted in the database. So this flag is used to design recycle bin. All the module records, flagged as deleted will be shown in the Recycle bin list view.

Like any other modules, a new module(tab) is added for 'Recycle Bin' under Tools menu. But Recyclebin has only listview and no other views like EditView/CreateView.

Basic search and Alphabetical search option are provided like any other modules, but not advanced search.

Implementation Details

Enabling Recyclebin module:

We are depending on the deleted flag for any entity in vtiger_crmentity table. Along with this, some of the relationships that needs to be backed up for restoring back are store in vtiger_relatedlists_rb (newly added table)

Following is the structure of the table **vtiger_relatedlists_rb**:-

Field	Type
entityid	int(19)
Action	varchar(50)
rel_table	varchar(200)
rel_column	varchar(200)
ref_column	varchar(200)
related_crm_ids	text

Since '**Recyclebin**' is added as a new module, it has to be added to **vtiger_tab** table as follows:-
`insert into vtiger_tab values('30', 'Recyclebin', '0', '27', 'Recyclebin', null, null, 0, '1')`

We need to relate the newly created tab to one ore more of the maintabs. I am relating Recyclebin tab to Tools mainmenu as follows:-

```
insert into vtiger_parenttabrel values('7', '30', '4')
```

For the tab to be visible for a logged in user (non-admin users), the user should have permission to view the tab. This information is stored in **vtiger_profile2tab** for profile level and then stored in **user_privileges** file for each user, based on the associated profile. This is handled for new profiles by checking for the permission from Profile creation page and saving it in the vtiger_profile2tab. But for the existing profiles, the entries have to be handled for the 'Recyclebin' tab for each profile and give the access permission by default. This has to be handled during migration as follows:-

```
insert into vtiger_profile2tab values (profileid,30,0) -> For each profile.
```

After this, the following files needs to be recreated -
tabdata.php, parent_tabdata.php and user_privileges files.

To enable Search icon for all the users for Recyclebin module, it has to enabled at profile level as follows:-

```
insert into vtiger_profile2utility values(profileid,30,3,0) -> For each profile.
```

Enabling Restore feature:

To enable restoring the data back from Recyclebin, I added an api called **restore()** to the base class '**CRMEntity**'. This api handles the necessary restoration of an entity for a given crmid and also its related entities.

A particular record is restored back by setting back the **deleted** flag to **0** in **vtiger_crmentity** table (which is set to 1, when the entity is deleted).

Related entities are restored back from **vtiger_relatedlists_rb** table which is populated with necessary information gathered when they where affected during the actual entity deletion.

Necessary language strings are added to **include/js/en_us.js**, **include/language/en_us.lang.php** and **modules/Recyclebin/en_us.lang.php** files.

vtiger_relatedlists_rb table is populated while deleting the entity. All the necessary queries for this are done in **include/utills/DeleteUtils.php**

All necessary api's for listview (display, search results, etc) and restoration are in **include/utills/RecyclebinUtils.php**

EmptyRecyclebin functionality is provided only for admin users and handled in **modules/Recyclebin/EmptyRecyclebin.php** file. On triggering this action, all the records in the **vtiger_crmentity** marked as deleted are permanently deleted from the database. Also all the related data of that record are deleted from the backup table **vtiger_relatedlists_rb**.

File Changes:

data/CRMEntity.php	Added restore() api to the CRMEntity base class. (Which handles the data restoration for all the modules)
include/js/en_us.lang.js include/language/en_us.lang.php modules/Recyclebin/language/en_us.lang.php modules/Settings/language/en_us.lang.php	Added required language strings
modules/Accounts/Accounts.php modules/Calendar/Activity.php	Added a place holder for restore_module() api which shall handle module specific

modules/Contacts/Contacts.php modules/Campaigns/Campaigns.php modules/Emails/Emails.php modules/Faq/Faq.php modules/HelpDesk/HelpDesk.php modules/Invoice/Invoice.php modules/Leads/Leads.php modules/Notes/Notes.php modules/Potentials/Potentials.php modules/PriceBooks/PriceBooks.php modules/Products/Products.php modules/PurchaseOrder/PurchaseOrder.php modules/Quotes/Quotes.php modules/SalesOrder/SalesOrder.php modules/Vendors/Vendors.php	restoration, if required.
Include/Utils/DeleteUtils.php	Add necessary queries to back up the related data deleted/updated for an entity (Saving the information in table vtiger_relatedlists_rb)
Include/Utils/RecyclebinUtils.php	Contains api's for the listview, search results and restoration functionality of recyclebin module
Include/Utils/UserInfoUtil.php	Added security check for the module for non-admin users, if accessed through Settings.
Include/Utils/Utils.php	Included the file RecyclebinUtils.php
Fresh Installation :- schema/DatabaseSchema.xml modules/Users/DefaultDataPopulator.php Migration:- modules/Migration/DBChanges/504_to_510.php	<ul style="list-style-type: none"> • Added the necessary queries for vtiger_relatedlists_rb table creation • Insertion of an entry for the recyclebin module in vtiger_tab, vtiger_parentabrel tables • Insertion of an entry for permitting access to all profiles in vtiger_profile2tab and vtiger_profile2utility tables.
Smarty/templates/Button_List.tpl	Added special case handling for list view of recyclebin modules
Smarty/templates/Settings.tpl Smarty/templates/SetMenu.tpl	Necessary entry for Recyclebin in Settings module UI.
Smarty/templates/Settings/Recyclebin.tpl	Header information UI handling for Recyclebin module in Settings section.
Smarty/templates/Recyclebin/Recyclebin.tpl Smarty/templates/Recyclebin/RecyclebinContents.tpl	Header information UI handling for Recyclebin module in Tools section. Listview UI handling for Recyclebin module.
modules/Recyclebin/index.php modules/Recyclebin/RecyclebinAjax.php	Listview handling for Recyclebin module
modules/Recyclebin/Restoration.php	Handles restoration for Recyclebin module
modules/Recyclebin/Recyclebin.js	Javascript handling for recyclebin module actions.
<theme>/settingsTrash.gif	Image file added for UI in Settings section.

Developer Notes

1. For any newly added modules -
 - Add a place holder for the api restore_modules in the <module>.php file for module specific restoration.
 - In DeleteUtils.php when handling the deletion for the related records deletion, for a given module, also add the functionality for restoration of those related
2. For existing modules, if there are any changes in the deletion of the entity (entities related records), they have to be handled for restoration by adding entries to vtiger_relatedlists_rb.