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/**
 * DHV CRM Importer: Technical/User Specifications
 *
 * @author Mathur
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 * @version $Id: Importer Technical Specs.txt,v 1.0 2004/05/04 10:07:22 mathur Exp $
 */
```

Importer is a sophisticated tool for importing contacts, accounts, account contacts, opportunities, tickets etc into DHV CRM. Rich features include

- ability to custom/auto map fields to properties
- perform error checking
- report progress
- workflow based process
- scalable & performance driven architecture

Architecture

Thread based architecture with a Import Manager for maintaining a pool of imports using a queuing system. The Import Manager maintains its own(not a new one, just a pointer) connection pool and uses this to provide each import with its own connection, which the import process(thread) uses from start to finish. The manager uses a FCFS(First Cum First Serve) algorithm for processing the imports and controls the number of concurrently running imports by using the IMPORT_QUEUE_MAX property defined in the build.properties file. Once a import(thread) has completed its job, it cleans itself up and releases any resources held and finally reports to the manager of the job completion before destroying itself. The manager releases any database connectins held by the completed import process and then gets the next import from the queue(if any) and starts processing it. The manager continues processing imports till the queue is empty.

Workflow

The import goes various stages before finally being approved and locked. Here are the possible sequences for the lifecycle of a import:

1. unprocessed -> queued -> running -> processed unapproved -> approved
2. unprocessed -> queued -> running -> failed
3. unprocessed -> queued -> running -> cancelled

NOTE: At any point before the approval of the import, the import can be deleted altogether.

Business Rules

Here are the business rules for the importer:

- User needs to have specific permissions based on the type of import e.g for importing general contacts user needs to have the “contacts-external_contacts-imports-x” permission where 'x' is the action.
- User can view all imports that were entered by the user or someone in the user's

hierarchy.

- Once an import is added, the import file cannot be overridden. However, you can delete the import and start a new one.
- Imports cannot be deleted/cancelled once they are approved
- Imports cannot be deleted while import is being processed
- Imports can be cancelled while import process is running
- For deleting a imported unapproved contact, the user should have permission to edit imports
- Only a successfully processed import can be approved
- By default, the user importing the records is the owner of the records. However, this can be changed while mapping the fields.
- No two fields can be mapped to the same property
- All required fields have to be mapped to a property before running the import
- Import Manager will process only `IMPORT_QUEUE_MAX` number of imports concurrently, the rest are queued.

Field Mappings

A 'field' is a single column specified in the header of any import file and a 'property' is a single attribute of a DHV CRM component, in this case it is a contact.

Field Mappings is the most critical and useful feature of the importer, which needs careful evaluation. This is the section where the user can map custom fields from the user's system to DHV CRM properties. The importer gives a highly user friendly interface to do the mapping. The importer tries to auto map all the fields to corresponding properties using a already existing list of valid field names defined in a xml(cfs-import-properties.xml) file. However, if the importer is unable to map certain fields or has incorrectly mapped them, the user has the flexibility to choose from a list of valid properties.

Grouping is a feature which is used by the importer to group fields which combine to form a single property of the contact.

Example: Contact Address is a single property of a contact and it can have the following attributes: Address Line1, Address Line2, Address Line3, city, state, zip, country. A single set of these attributes combine to form one address.

The importer smartly auto groups fields for you but you have the flexibility to alter the grouping.

Formatting Fields

Valid Email formats:

- The address should start with a bunch of alphanumerical (letters or numbers), underscores, dots or dashes. This is the user name. Do not use special characters like `() < > @ , ; : \ " . [] */`
- Then comes an “@”.
- Domain name comes after the “@” and can have several series of alphanumerical characters and dashes, followed by a dot.
- Domain names with IP Addresses should have square brackets around them e.g domains that are IP addresses e.g. joe@[123.124.233.4] is legal

- Domain name characters after the “.” should not exceed more than 3 characters

Valid Phone Number Formats:

- US Number Format: [1] XXX-XXX-XXXX or XXX-XXX-XXXX
 - X is a integer between 0-9 including 0 and 9.
 - The number cannot be greater than 10 numbers excluding the prefix 1
- International Number Format: + XXX-XXX-XXX
 - X is a alphanumeric character
 - Number has to have a prefix '+'
 - There number cannot exceed 30 characters
- Phone Number Extensions
 - Phone Number extensions can be specified in a seperate field in the import file or along can be appended at the end to the phone number. Extensions follow the same rules as that of a number except that they cannot exceed 10 numbers.
Format : XXX-XXX-XXXX ext234 or XXX-XXX-XXXX x234

Supported File Types

Currently the importer supports Excel/Outlook CSV format.

TODO

- Support for other file types i.e ACT, CUSTOM etc
- Implement record level permissions based on enteredby property of the import
- Grouping tool to group dependencies
- Start and end date for the import
- Modifying the import, along with overriding the import file
- In case of a system failure, the manager needs to reload all incomplete imports and process them from where it left
- Advanced formatting capability to include checking for email address & phone number validity comprehensively and parsing the phone number to retrieve the extension if available
- Implement importer templates
- Add support for zipped files

Frequently Asked Questions

1. Can I have the importer remember my mappings for a import, so I can use that as a template for other imports?
You can modify the cfs-import-properties.xml file so that the “aliases” attribute of the corresponding property has the field name as one of the valid values. However, the importer does not currently support storage of templates.
2. Can I override the import file associated with a import and upload another file?
No. You can delete the import and recreate it.
3. Can I upload the import file and process the import at a later time?
Yes. After adding the 'New Import', you can choose the 'Process Later' option on the confirmation page.