

# CRM-to-CRM Data Migration

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*The purpose of this whitepaper is to describe the issues and best practices related to data migration from one CRM system to another CRM system.*

*The CRM systems included here may be off the shelf solutions such as Salesforce or Microsoft Dynamics CRM, or may be a custom solution using a standard database engine such as SQL, MySQL, or Oracle. You may be working with a Migration Partner, or you may undertake the entire migration on your own.*

## Include Necessary Team Members

A variety of skills are necessary for a successful data migration, from technical to business to testing. Business users are critical in their ability to:

- Identify processes that utilize the data in its various forms
- Identify appropriate values for picklists in both the source and destination systems
- Identify data that is correctly/incorrectly associated or portrayed

Technical resources, such as a DBA and CRM Admin, must have detailed knowledge of:

- Tables and fields in both the source and destination system
- Data relationships in both the source and destination systems
- System interfaces that utilize and/or transform the data being migrated
- Lists of users needed in both the source and destination systems

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Testing resources must be both business savvy and technically astute to understand when data is/is not 'right' and how to navigate to data in both the source and destination systems so they can compare data. They must have knowledge of destination business processes that may transform data for display purposes after it is loaded. The data may have been migrated properly but will 'appear' different, or not at all, because of internalized business processes that your Migration Partner is not aware of.

Your project manager must have the big picture in mind, and have the authority to prioritize resources and escalate issues as required.

If you are working with a migration partner, they should provide personnel to configure/customize the migration tool and develop associated queries and jobs to migrate your data. But they can't do it in a vacuum! As you continue reading through this White Paper, you will realize the more knowledgeable resources you bring to the table, the faster, and more efficiently and correctly, your migration can be completed and major issues averted.

## Choose the Right Migration Tool

There are various tools on the market that will migrate data between CRM systems. Your business needs and the condition of your data will drive your choice of migration tool. Some tools also will transform your data, if necessary, during the migration. These are known as ETL tools (Extract, Transform, Load).

Consider these questions before you finalize your decision:

- How much data must be migrated? Can my tool multi-thread the process?
- Do the source and destination APIs contribute to the process so that I can choose a less robust tool?
- Are the source and destination APIs limited so that I should choose a more robust tool?
- Do I need to transform data from the source into the destination? Can my tool do that?
- Does my tool have pre-built maps that I can use or are custom maps necessary?
- Do the pre-built maps accommodate all my migration needs and requirements?
- Does my tool produce reports of records that failed to migrate? How are the reports limited by the source or destination APIs?

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## Prepare Your Data

It is always a good idea to prepare the source data as much as possible. Some CRM systems have built in functionality to enable actions such as removing duplicate records, ensuring the correct Users are assigned to records, and closing or deleting old incomplete Activities.

**Entity:**      **Account**

DB Field Name	Display Label	Field Type	Length	Picklist Values/Format	Count
Name	Company Name	Text	100		257
Address1	Street Address 1	Text	50		257
Address2	Street Address 2	Text	50		12
Address3	Street Address 3	Text	50		0
City	City	Text	50		257
State	State	Picklist	2	All US States (2 letter Code)	257
Zip	Zip	Text	10		257
Website	Website URL	Text	100		200
Phone1	Main Phone	Phone	20	999-999-9999	257
Phone2	Toll Free Phone	Phone	20	999-999-9999	46
Phone3	Fax	Phone	20	999-999-9999	169
Industry_c	Industry	Picklist	100	Electronics Software Construction Mining	1

If time allows, it is often illuminating to take a count of fields that contain a value to see if a field is being used. This can be done in a couple of ways. One way is to select records through the User Interface (UI) of the CRM where the field you are interested in contains data. A second way is to select the data using the database itself. For example, if the source CRM is hosted on Microsoft SQL Server then you could create a SELECT statement in SQL Server Management Server that would count the records.

Here is what that might look like: SELECT COUNT (Industry\_c) from Account.

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In the example above we can see that the Industry field only contains a value for one of the records in the database and so this may or may not be included in the data migration map depending on whether this information has value to the business.

When creating the mapping from source to destination, watch out for mismatches in field sizes and format. If the destination field is not as large as the source, your data may be truncated. It is your responsibility to understand the business impacts of truncated data, and if a translation or mapping into a larger field is needed to satisfy business needs. Your Migration Partner would not have this crucial knowledge. The format of the destination system may differ for standard fields. For example, your source system may have a customization to store phone fields with dashes ('-') but your destination may not allow these special characters. Your Migration Partner would not know about your source system customizations and thus may encounter issues related to them.

It always makes sense to create a migration plan that contains the spreadsheets that are created and any rules that are being used to determine which data will be migrated, as well as an explanation of any data decisions made, especially if data is being truncated, translated, or left behind.

The spreadsheets will grow and change over the planning phase of the migration as additional information is gathered. Later on, mapping information and information related to the destination system will be added.

## Know What Data Will Map

Before starting a data migration to a new CRM system it is important to understand what data will migrate and to where. This is referred to as the data map. There are some entities that will almost always be required when migrating data from one CRM to another such as:

- Accounts
- Contacts
- Leads
- Phone Calls
- Meetings
- Tasks
- Notes
- Emails

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This is a fairly short list but there may be additional consideration in terms of data migration because these entities may have relationships to additional entities that need to be mapped to in order to successfully migrate the data such as:

- Address
- Phone

Every CRM system is different; some will hold the address and phone information in the main table of each record type but some will require the additional step of adding the data to a table that is related to the primary entity. If there are limits to the number of phone numbers in the destination but not in the source, how would you expect the data to be mapped/transformed?

Even though your source and destination CRMs may have similar entities and fields, the relationships in the source may differ from those in the destination. A source may be one-to-many (1:M) while the destination may be one-to-one (1:1). If they differ, will the data be transformed or will the destination be configured/customized to match the source? For example, an Opportunity may be related to multiple Accounts in the source but to only one in the destination. Will you copy the Opportunity to each Account in the destination or will you customize the destination to allow Opportunities to be related to multiple Accounts?

Then there are some entities that will probably map, but the way each CRM handles these is always so different that they typically require a lot more planning such as:

- Campaigns
- Opportunities
- Any custom entities

There may be some data that just will not migrate in an automated fashion such as:

- Reports
- Target Lists for Campaigns
- Some types of Attachments
- Some types of Activities
- Some types of Addresses
- Some types of Phone fields

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Plan to identify a destination field for every source field in your data map. You may also consider that some source fields may be merged into one destination field, or some fields may be parsed and split into two. Consider how both the source and the destination handle each field. These are examples of some fields that commonly do not match:

- Is there a separate Middle Name field?
- Is there a separate Prefix field or is it part of the First Name field?
- Is there a separate Suffix field or is it part of the Last Name field?
- Is the address stored in a single field or does each piece of the address have its own field?
- Are State values abbreviated or spelled out?
- Is the phone number extension part of the Phone Number field or a separate field?
- Is the length of the destination field shorter than the source field? Should the data be truncated or mapped to a larger/custom field?

It is important to document which data, both entities and fields, will migrate and how, and which data will not, and to set the expectations of stakeholders accordingly. Be diligent when creating your data map!

## Data Quality

Undertaking an audit of the data prior to creating any matching field in the destination system, or building the migration maps, will save a lot of time later on. This process will help identify potential issues and eliminate associated rework once maps have been created and test migrations have begun. Some common issues that should be considered before starting a migration are related to the following:

Phone number fields:

- Is the data formatted like a phone number or is the data just the numbers?
- Are there other text characters in the data?
- Is the extension number in the phone number field or in a separate field?
- Does the destination CRM system store the data the same way?
- Do we need to transform the data during the migration?



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Picklist fields:

- Does all the data in the source database in this field actually match the values in the destination picklist? Are there additional values in historical records that are no longer in the source pick list?
- Use a DISTINCT query on all the picklist fields and compare to make sure the actual values match the picklist values
  - Select DISTINCT (industry\_c) from Account
- Should the data be mapped to a text field rather than a picklist field?
- If all the values in the source picklist are not required, then how would those dropped values map to the new list?
- Do we need to transform the data during the migration?
- Does the destination field contain all appropriate picklist values?
- If the source allows multiple picklist values to be chosen, can the destination handle the field the same way?
- Changes to picklist values in either the source or destination prior to production migration will negatively affect the mappings and must be held to a minimum.

Email fields:

- Do all field values contain valid email addresses?
- How will your tool of choice process invalid email addresses?
- How will your destination API process invalid email addresses?

Some organizations choose to do data cleanup near to or during a data migration. Most CRM systems have built in functionality to help clean or de-duplicate data, so if any data cleanup is required then it needs to be decided if the data will be cleaned in the source or the destination, or if the ETL tool will be used for some of this function.

## Data Types

It is crucial to understand the data type for each field that is to be migrated to a new system. Different field types have different requirements related to how the data is formatted. When mapping data it is sometimes possible to migrate data to a different field type, such as migrating picklist data to a text field, but it is more common to try to mirror the data type of the source in the destination, such as for date fields or currency fields.

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Other considerations related to specific data types are:

- Date / Time field
  - Is the date format for both systems the same?
  - Are both the source and destination systems using the standard GMT date time format?
- Currency field
  - Is either system using multiple currencies? If so, does this need to be configured in the destination before the migration?

## How Much Data?

It is a common desire to bring all the data from a legacy system into a new system, but it is worth considering if this the correct approach.

It is not unusual for data within a mature CRM to be old, untouched, or disqualified/bad. For example, a CRM database may contain Account or Lead records that have never been converted to customers and have never been interacted with. If this is the case, does it really make sense to bring this data to the new system?

The source system may have many activity records such as phone calls or meetings that happened many years ago. Does it make sense to bring all these records to the new system?

It might make sense to consider some rules for limiting the data that is migrated such as:

- Only migrate phone calls that happened since 1/1/2006
- Only migrate account records that have activities related to them
- Only bring Leads that are not disqualified

There may be a disproportionate amount of effort to fix/clean/transform certain 'bad' data. Consider if this data is truly valuable and worth the cost.

There may be many different reasons for including or excluding data, and this should be defined by the business stakeholders. Sometimes a business may have compliance regulations that relate to the type and age of data that must be retained, and this also needs to be considered.

Also, if the destination system is an on-demand or SaaS deployment, the cost of any additional charges for storage of data beyond a set maximum should be considered. For example Microsoft Dynamics CRM charges \$9.99 for each additional GB of storage.



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If you choose to restrict the amount of migrated data by ‘flagging’ records for migration, define the ‘flag’ at the top level of the data hierarchy. In other words, ‘flag’ the account but not specific subordinate records. Using a ‘flag’ at the subordinate level, for example on Opportunities, causes a great amount of added complexity and confusion because an associated Note could be migrated with a ‘flagged’ account but not migrated because it’s opportunity was not ‘flagged’.

## User Mapping

It is important to understand how the data will be migrated if it is related to a User. Accounts and Contacts are typically linked to Users in at least three ways:

- User that created the record
- User that last modified the record
- User that owns the record for security purposes

Activity records are typically linked to users in the following ways:

- User that created the record
- User that last modified the record
- User that the Activity is assigned to
- User(s) that attended the Activity
- User that completed the Activity

In a mature CRM there will be Active and Inactive users that need to be considered when migrating data for security and for historical correctness. It is important to know who owns an Account if data is segregated in any way, and it may be important to know who made the phone call that is being migrated.

There are two basic approaches to managing Users when migrating from one CRM system to another:

- Create all Users in the Destination CRM that exist in the Source CRM, including inactive Users
  - The Inactive Users are then made inactive in the destination system so as not to consume a license
  - Some systems rely on Active Directory for User authentication which is an additional consideration when choosing this method

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- Create only the Users in the Destination CRM that are active in the Source CRM and one additional User that will act as the catchall for old User mapping
  - With this method it is a good idea to add the name of the original user in the main description or memo of the Activity being mapped
  - It is also necessary to ensure that there is a list provided by the project owner of the names of all users in the Source CRM system and a note against each as to whether they are Active or Inactive in the new CRM

## Migration Planning

Before migrating data it is always a best practice to add two additional fields to every entity that is being migrated:

- Source ID
  - The ID of the Source record is inserted into this field for every record that is migrated
  - This does not need to be displayed on the form for that entity, but if it is, the field should be read-only on the form
- Data Source
  - The name of the data source is inserted into this field for every record that is migrated
  - This does not need to be displayed on the form for that entity, but if it is, the field should be read-only on the form

When migrating data, it is crucial to preserve the Source IDs for the records that are being migrated so they can be related to other data during the migration and also to enable the records to be updated after the main migration if any part of the data needs to be reprocessed.

The ETL tool that is being used for the migration should have some independent way of managing the cross reference of the IDs between the source data and the destination data, but adding the Source ID to the destination record is the most secure way to manage the cross reference of the IDs.

If the ETL tool were to stop for some reason or the ID cross reference table should become damaged, the cross reference can be rebuilt easily if the record in the destination also contains the Source ID.

Having these two fields in every entity can sometimes be the difference between a simple issue and a catastrophic situation.

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It is also a best practice to add a Source ID field to User records in the destination system to cross reference the User back to the Source System. This field should be called <source system name>ID so that it is immediately obvious to any future administrator what the system was that this ID belongs to. For example, if you are migrating from a legacy AS400 system this field should be called AS400ID or something similar. The source User IDs should be added to the corresponding User record in the destination system.

Your destination system may have customizations, workflows, validations and/or triggers that kick off other processes based upon data being entered into the system. Be sure to identify all of these and decide if they should be turned off during migration. And remember to turn them back on when the migration is complete!

When performing the test migration runs, take note of how much data is moved and how long each job takes. A partial load is not always a good predictor of timing for a full data load, but it is a start. This will be very useful when planning for your final migration into production. If your test timings indicate the full migration will take more than a weekend, sometimes basic data can be migrated over a weekend and associated non-critical data can be migrated after go live or after business hours.

## Security Mapping

Whatever security requirements exist for data in the Destination system, this should be configured ahead of time. Sometimes when migrating from a legacy CRM to a new CRM the security model may change and this needs to be fully understood and documented before any data is migrated.

## Test Planning & Testing

Typically, the migration is developed in a test environment where the destination system is also being built. Having a timeline for destination system development is necessary so that you can be assured the tables, fields, picklists and customizations are all in place before the test migration is developed and run. If the destination system development is not close to final, unit and system testing of the migration jobs can be invalid and may even produce false errors. Nightly backups are essential in case of system/server issues; you wouldn't want to lose all the development work due to a system crash.

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In rare cases, the migration may be developed and tested right in the production destination system. This is certainly not ideal because any data can be added/changed/removed at any time. How will you validate the migrated data?

A group of users should be assigned the task of validating a test load of data before the final production load is scheduled.

There are several considerations when validating a test load:

- Have your users already been trained on how to use the destination system?
  - Do they know how to view a report of all Accounts and the Account's relevant data?
  - Do they know how to view a report of all Contacts and the records related to the Contacts?
  - Do they understand how the modules behave in the destination?
  - Do they understand the data relationships and restrictions in the destination and how they relate to the same in the source?
- The size of the load should be defined
  - E.g. All data related to all Accounts that begin with 'A' or all data related to a key/unique Account
  - If there are < 100,000 rows of data in total it might make sense to migrate everything as a test but if there are millions of rows this would not be practical
- Record count comparisons should be made
  - How many rows for each table are in the source and does this match the destination?
  - Does your testing team understand how similar tables are related between the source db and the destination db and how their row counts should match up?
  - Have any data transformations been applied that would affect your record counts?
- All fields should be compared to ensure that the data mapped correctly, taking into account any applicable data transformations.
- Migration times should be captured to help to calculate how long the full production load will take.
- Records can fail to migrate for many reasons, and most times each failure must be addressed individually. Generally, your Migration Partner will not know the business reasons for record failures due to data inconsistencies. Is your team prepared to handle the analysis of these types of record failures?
- At times when a data migration issue is identified, rather than deleting all associated data, changing the migration mapping, and reloading all associated data, you may just change the migration map and load a handful of records for validation. Then provide snapshots of the before and after record processing to your test team. This process can save huge amounts of time during the testing process.

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## Migration Expectations

Migrating data is not an exact science. Some fields or records may contain corrupted or mismatched data and these exceptions may cause the data to not migrate or not migrate correctly.

Some destination fields may not contain the expected data, which will depend on the rules of the destination system. For example, it may not be possible to update the created by or modified by fields to display the exact same data that is in the Source.

## Migration Project Startup

If you are working with a Migration Partner, you should be prepared to provide them with access to your network and source and destination servers. Alternatively, they may be able to work with a backup of your source data.

There may be various restrictions due to your source CRM/API, your destination CRM/API, your destination CRM features and settings, etc. Be sure to check with your Migration Partner and understand the unique characteristics involved in your particular migration.

## Summary

This document describes the ideal process for migrating data from one CRM system to another and this process is potentially complex and time consuming depending on the complexity of the CRM systems involved. We believe that it is worth the effort to do migration right in the first place in order to avoid additional effort after the fact to fix any data issue.

Need some help with your CRM-to-CRM data migration?  
Contact the CRM data migration experts at **[info@starfishetl.com](mailto:info@starfishetl.com)**  
or visit **[www.starfishetl.com](http://www.starfishetl.com)** to download your free trial.