

Import Tool For Dynamics CRM 2016 / 365



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Table Of Contents

Table Of Contents4
What's in this manual5
Functionality
Chapter 1: Import Tool Overview6
Chapter 2: Running the Import Tool for the first time11
Chapter 3: Using the Import Tool16
Chapter 4: Import Tool Setup19
Chapter 5: Creating New Project21
Chapter 6: Fields Mapping32
Chapter 7: Validating and running import
Chapter 8: Running the import from the command line
Chapter 9: Expressions
Chapter 10: Functions
Chapter 11: Advanced scripting54
Support

DPS Import Tool is a powerful application designed specifically to import data into Microsoft Dynamics CRM. It can easily handle complex import scenarios and it allows you to import or update all elements of Product Catalog, any core Microsoft CRM entity (Accounts, Contacts, Leads, etc.) and also custom entities.

This manual contains the following main chapters:

- > Import Tool Overview
- > Running the Import Tool for the first time
- > Using the Import Tool
- Import Tool Setup
- Creating a New Project
- > Fields Mapping
- Validating and running the import
- > Expressions
- ➢ Functions
- > Scripts

Chapter 1: Import Tool Overview

Import Tool is a powerful application specifically designed to simplify the data import to Microsoft Dynamics CRM. It allows you to import or update all core entity types (Account, Contact, Lead, etc.), all elements of Product Catalog or any custom entities.

With the Import Tool you can:

- Import data from different sources:
 - o SQL Server
 - o Microsoft Excel
 - Text files (csv, tsv, etc)
 - Any ODBC data provider
 - Email mailbox using POP3 or IMAP protocol
 - Or you can develop your own data source plugin.
- Save import project containing mapping schema, use functions to transform the input data, create custom scripts and much more.
- Use different import modes: import new records, update existing records, perform both at the same time, delete unwanted records or change record status (for example activate, deactivate, etc.).
- Import data into custom entities and fields.
- Run import process from a command line which can be used to automate or schedule the import process.

Versions

Import Tool comes in two versions: Data Migration version and Full version.

Data Migration version is designed for the initial data imports and will work only for 60 days. This version should help customers to import essential data into Microsoft Dynamics CRM, test and make all necessary data updates at the beginning of the implementation process.

Full version is ideal for initial and on-going data imports as it has no expiration date. This is the best choice for customers that require regular updates to the data stored in Microsoft Dynamics CRM, for example when price lists need to be updated regularly, new products are frequently imported and so on.

In addition to that, Import Tool is divided into 7 modules which allow importing or updating different groups of entities. Customers that do not need to import all types of records can choose only a single module or multiple modules that are critical for their business. Furthermore import of custom entities is always included when at least one module is registered.

Below table lists the modules available and Dynamics CRM entities they will allow to import.

Module	Dynamics CRM Record	Dynamics CRM Entities
Activities	Appointment	appointment
	Attachment	acctivity attachment
	Campaign Activity	campaignactivity
	E-mail	email
	E-mail Template	template
	Fax	fax
	Letter	letter
	Phone Call	phonecall
	Recurring Appointment	recurringappointmentmaster
	Service Activity	serviceappointment
	Task	task
Customer Records	Account	account
	Address	customeraddress
	Competitor	competitor
	Contact	contact
	Currency	transactioncurrency
	Customer Relationship	customerrelationship
	Lead	lead
	Opportunity Relationship	customeropportunityrole
Field Service	Bookable Resource	bookableresource
	Bookable Resource Booking	bookableresourcebooking
	Bookable Resource Booking Header	bookableresourcebookingheader
	Bookable Resource Category	bookableresourcecategory
	Bookable Resource Category Assn	bookableresourcecategoryassn
	Bookable Resource Characteristic	bookableresourcecharacteristic
	Bookable Resource Group	bookableresourcegroup
	Booking Status	bookingstatus
Marketing Campaigns	Account	account
	Campaign	campaign
	Campaign Activity	campaignactivity
	Campaign Item	campaignitem
	Campaign Response	campaignresponse
	Contact	contact
	Currency	transactioncurrency
	Feedback	feedback
	Lead	lead
	Marketing List	list
	Marketing List Member	listmember
	Rating Model	ratingmodel
	Rating Value	ratingvalue
Product Catalog	Currency	transactioncurrency
	Discount	discount
	Discount List	discounttype
	Price List	pricelevel
	Price List Item	productpricelevel
	Product	product
	Product Association	productassociation
	Product Relationship	productsubstitute
	Property	dynamicsproperty

	Property Association	dynamicspropertyasociation					
	Property Instance	dynamicspropertyinstance					
	Property Option Set Item	dynamicspropertyoptionsetitem					
	Unit	uom					
	Unit Group	uomschedule					
Sales	Account	account					
	Competitor	competitor					
	Competitor Address	competitoraccess					
	Contact	contact					
	Currency	transactioncurrency					
	Feedback	feedback					
	Goal	goal					
	Goal Metric	metric					
	Invoice	invoice					
	Invoice Line	invoicedetail					
	Lead	lead					
	Marketing List	list					
	Marketing List Member	listmember					
	Opportunity	opportunity					
	Opportunity Product	opportunity					
	Opportunity Relationship	customeropportunityrole					
	Order	salesorder					
	Order Line	salesorderdetail					
	Queue Item	quede					
	Quete	quote					
	Quote Line	quotedetail					
	Bating Model	rating Model					
	Rating Value	rating Value					
	Rollup Field	rollupfield					
	Rollup Ouerv	goalrollupquery					
	Rollup Query	goalrollupquery					
	Sales Attachment	solesliteratureitem					
	Sales Attachment	salesliterature					
	Territory	territory					
Sorvico	Account						
Service	Article	kbarticle					
	Article Comment	kbarticlecomment					
	Article Template	kbarticletemplate					
		incident					
	Case Resolution	incident					
	Chappel Property	chappelproperty					
	Channel Property Group	channelproperty					
	Characteristic	characteristic					
	Contact	contact					
	Contract	contract					
	Contract Line	contractdetail					
	Contract Template	contractionalite					
		transactioncurrency					
	Entitlomont	transactioncurrency					
	Entitlement Channel	entitlement					
	Entitlement Template	entitlementtemplate					
		Charlementeenplate					

	Entitlement Template Channel	entitlementtemplatechannel					
	Facility/Equipment	equipment					
	Feedback	feedback					
	Knowledge Article	knowledgearticle					
	Knowledge Article Incident	knowledgearticleincident					
	Knowledge Article Views	knowledgearticleviews					
	Knowledge Base Record	knowledgebaserecord					
	Queue	queue					
	Queue Item	queueitem					
	Rating Model	rating Model					
	Rating Value	rating Value					
	Rating Model	rating Model					
	Rating Value	rating Value					
	Resource Group	constrainbasedgroup					
	Rollup Field	rollupfield					
	Routing Rule Set	routingrule					
	Rule Item	routingruleitem					
	Service	service					
	Service Activity	serviceappointment					
	Site	site					
	SLA	sla					
	SLA Item	slaitem					
	Subject	subject					
	Team Template	teamtemplate					
System	Business Unit	businessunit					
	Connection	connection					
	Connection Role	connectionrole					
	Currency	transactioncurrency					
	Email Server Profile	emailserverprofile					
	Note	annotation					
	Position	position					
	Queue	queue					
	Resource Group	constraintbasedgroup					
	Site	site					
	Subject	subject					
	Team	team					
	Territory	territory					
	User	systemuser					
Full version	All Above	All Above					

Demo Licenses

Import Tool is licensed per Organization. Downloaded version is fully functional limited to importing or updating 5 records only. This is the only restriction when no registration key has been entered. Evaluation license is not needed.

Compatibility

Import Tool 2016 is compatible with all deployment types of Microsoft Dynamics CRM 2016 and 365.

1. Go to All Programs and find "DPS Limited" folder

If you are using 32-bit version of Windows the following shortcuts will be available:

- Import Tool 2016
- Import Tool 2016 Command Line

If you are using 64-bit version of Windows there will be two more shortcuts available:

- Import Tool 2016 (32-bit)
- Import Tool 2016 Command Line (32-bit)

Both 32- and 64-bit versions are fully compatible with Dynamics CRM 2016 and provide the same functionality. The only difference is that if you want to use for example Excel file as your data source and you are running 64-bit Windows, there is no 64-bit ODBC provider for Excel and you will have to use 32-bit version of the Import Tool. And this is the only reason why we are providing 32-bit version of the Import Tool.

2. Select "Import Tool 2016"

This will start the Import Tool application.



Connection Configuration

When running the Import Tool for the first time you will be asked to create a new connection.



Click "OK" to continue.



Click "New" button. "Connection Editor" window will open. It has four tabs:

• General

(Connectio	n Editor		×
	General	Login Name: Notes:	License Data Access DPS d7d5e0b2-8371-47eb-b3e0-54c100687eef ✓ Default connection	
	Test		OK Cancel	

Specify the name for your connection. You can also add some notes (optional). If you tick "Default connection" then the connection you are creating will be selected when launching the Import Tool next time (assuming you have more than one connection available, otherwise if there is only one connection it is always treated as a default).

• Login

Connection Editor	
General Login License Data Access	
Server URL: https://10.0.0.87:5555/	
User: Domain:	
Password: Save password	
Organization: DPS V	
Test OK Cancel	

Enter the URL of your CRM server. If you are connecting to the local CRM installation using Active Directory authentication you can tick "Use current user credentials" if you want to use credentials of the currently logged on user. If you are connecting to other type of CRM deployment (Live, IFD, etc.) you have to provide user name and password and optionally domain name. If you don't want to be prompted for the password every time application starts, make sure that "Save password" is ticked. "Microsoft Office 365 Provider" should be ticked if you have your Live CRM 2011 provisioned through Microsoft Office 365.

Click 🗐 to populate the organizations and select the organization you want to connect to. At this stage you can test your connection by clicking "Test" button.

License

Product Registrat	ion	×				
Organization	orgec9c70b1					
Key	GFQXZ-V3D77-8XCAH-BCLDT-TWZ7C					
Expiry Date	09/10/2017					
Modules	Activities Custom Customer Records Field Service Marketing Campaigns Product Catalog Sales Service System					

Enter your registration key if you already have it. You can always enter the registration key later using this window or from the Main Menu by going to Tools \rightarrow Registration. Without registration the application is fully functional, but is limited to process (import) first five records only.

• Data Access

Connection Editor	×
General Login License Data Access	
 Organization web service (On-premises, IFD, Live) Organization SQL database (On-premises only) 	
SQL Server:	-
Database:	-
	_
Test OK Cano	el .:

Data Access settings specify how the organization data is accessed. There are two modes:

- Organization web service this is recommended setting. When selected, CRM data will be accessed using the CRM web services only.
- Organization database this option can be enabled to improve performance when accessing the CRM data (database is used for read operations only). However this can only be used in onpremises installation types as you will have to specify SQL Server and Database that should be used (make sure that it matches the selected organization).

Connection Manager can be access from the main menu: Connections \rightarrow Manage.

Once your connection has been defined, click "Connect".

Connection Editor	×
General Login License Data Access	
Organization web service (On-premises, IFD, Live) Organization SQL database (On-premises only)	
SQL Server:	-
Database:	-
Test OK Cance	:I

3. Progress window will be displayed:



4. It can take couple minutes for the first time to complete.

To access the Import Tool, go to Start \rightarrow All Programs \rightarrow DPS Limited \rightarrow Import Tool 2011. This is the main application window.

👪 👔 🚍 🗧 Dynamics Professional Solutions Import Tool for Dynamics CRM 2016 🦳 🗕 🗌				\times	
File Project Connection	View License	Help			^ ?
Add Remove Single	All Single All	Map Iookups			
Entity Val	lidate Import	Settings			
Import Definition	No Project Loaded				
🔍 DPS 🕏 Ama Akar					

Ribbon

In this version of the Import Tool, menu and toolbar has been replaced by Ribbon. This is similar interface to Microsoft Office and CRM 2011.

Note that if you are still using older version of Windows, you will be presented with standard menu and toolbar instead. Minimum operating system version for Ribbon support is Windows Vista SP2 with Platform Update. See **Appendix A** for the interface reference.

There are 6 tabs available:

8.	1 2 ≂ Dyn	amics Professional So	lutions Import Too	ol for Dynam	nics CRM 20)16					×
F	Proiect C	Connection View	License H	Help							^ •
Ļ	Clone 4										
Add	Remove	Single All	Single All	Map lookups							
	Entity	Validate	Import	Settings							

1. File tab



Command	Description
New project	Creates a new empty import project.
Open project	Opens the existing import project.
Save project	Saves the import project.
Save project as	Saves the import project under a different name.
Close project	Closes the import project.
Settings	Opens the Settings window.
Exit	Closes the Import Tool application.
Recent projects	Contains recently opened import projects.

2. Project tab

File	Project	Conr	nection	View	License	Help
	C Clone	2	\checkmark			
Add	Remove	t	Single	AII	Single All	Map
D	Entity	1	Salic	Jat	I mpor A) Set gs

Group	Command	Description
Entity	Add	Adds a new entity import definition to the
		project.
Entity	Clone	Creates a copy of the currently selected entity
		import definition.
Entity	Remove	Removes the currently selected entity from the
		import project.
Entity	Move up	Moves the currently selected entity one level
		up in the hierarchy.
Entity	Move down	Moves the currently selected entity one level
		up in the hierarchy.
Validate	Single	Validates the import for currently selected
		entity.
Validate	All	Validates the import for all enabled entities
		within the whole project.
Import	Single	Runs the import for currently selected single
		entity only.

Import	All	Runs the import for all enabled entities within
		the whole project.
Settings	Map lookups	Allows changing default fields used for finding
		related records.

3. Connection tab

File	Project	Connection	View	License	Help	\wedge	?
		×.					
Manage	Connection	D					

Group	Command	Description
Connection	Manage	Opens the Connection Manager window.
Connection	Switch	Opens the Switch Connection dialog. Command is available if more than one
		connection has been defined.
Connection	Disconnect	Closes current connection.

4. View tab

File Project Connection	View Licens	se Help	^	?
S Status bar				
Show or hide				

Group	Command	Description
Show or hide	Status bar	Shows or hides the status bar.

5. License tab

File	Project	Connection	View	License	Help			 ?
R								
Register								
Registratio	on							

Group	Command	Description
Registration	Register	Opens the registration window.

6. Help tab

F	Project	Conne	ction View	w Lice	nse Help	^
					. 🖻	
			V			
User quide	About Import Tool	Check for updates	Product suggestions	Email support		
-	Help		Conta	act		

If you are using older version of Windows, instead of Ribbon you will be presented with standard menu and toolbar. Minimum operating system version for Ribbon support is Windows Vista SP2 with Platform Update.

1. Settings (Ribbon \rightarrow File tab)

Use this screen to specify general application settings like whether to automatically open your last project; default locations for the connection definitions and project files. Note if you change the default locations, your existing connections and /or projects files <u>will not</u> be automatically copied to the new location. You can also specify your own custom data source plugins.

Options		×
General Application • Plugins	Options Automatically open last project Check for updates when application starts Default folders Connections: C:\Users\lzabela\Documents\DPS\\mportTool Connections Projects: C:\Users\lzabela\Documents\DPS\\mportTool Projects	
	Send anonymous crash reports. No personal, user or project data will be sent, only debug related information which includes stack traces.	ncel

2. Product registration (Ribbon \rightarrow License \rightarrow Register)

The downloaded version of the Import Tool contains a fully functional product with a limit of five records that can be processed (created, updated, etc.). This restriction is waived upon product registration.

After purchasing the full product version you will receive an e-mail with the registration key for your organization. Enter the registration key you have received. System will show eventual expiry date and modules that you have purchased. Please verify if this information is correct. You can also enter the registration key in the connection setup window.

Product Registrat	ion X
Organization Key	DPS
Expiry Date Modules	Activities Custom Customer Records Customer Records Rield Service Marketing Campaigns Product Catalog Sales Service System Register Cancel

Enter the key and click "Register".

Product Registra	tion	×
Organization Key	DPS 4GL5D-LUHRM-HBRFY-DMDQ3-0QNMY	
Expiry Date Modules	Registration × Image: The second se	
	OK V Jystenn Register Cancel	

3. Lookups Mapping

Lookup fields are used to relate one record type to another. For example when creating a new task for a customer contract we are using a related field to associate task with the necessary contract record. Import Tool uses predefined default field (provided by Microsoft Dynamics CRM) to recognize what record you are referring to. In our example this will be the Contact Name that Import Tool will use by default; if in your import data you have a Contact ID instead, you can change the default lookup setup in the Lookup Mapping window.

Lookups Mapping			x
🗄 🙀 Reset All 🛐 Impo	rt From		
Entity	Default Field	Current Field	^
Account	Account Name	Account Name	
Activity	Subject	Subject	
Address	Address Name	Address Name	
Announcement	Title	Title	
Appointment	Subject	Subject	
Article	Title	Title	
Article Comment	Title	Title	
Article Template	Title	Title	
Attachment	File Name	File Name	
Attachment	File Name	File Name	
Authorization Server	Name	Name	×
Ignore Inactive Record	ls During Lookup		
		ОК	Cancel

"Reset All" button resets all lookups to use default field. As this information is stored in the project file, you can import mapping from another project file by selecting "Import From".

Follow below steps to create new import project:

1. Select New Project from the File tab (Ctrl+N).

In the "Name your project" screen enter the name and optional description of your project. Click "Next".

New Import Proj	ect			×
Name your pr Enter a name	oject and description for your project.			R
Name	Customers			
Description				
	Cancel	« Back	Ne	xt »

2. Choose a Record Type

In the "Choose a Record Type" screen select the entity you are planning to import data to. All Dynamics CRM entities that are available for import are displayed regardless of the registration status. By default, available entities are shown in groups by module; if you want to change that, right click on the list and unmark "Show Groups" option.

Use Find to quickly locate specific record type.

Add New Item Wizard				×
Choose a Record Ty What type of record of	ype do you want to import?			
Find:			Ei [Þ
Name	Entity	License	Description	^
Activities			1	
Appointment	appointment	\checkmark	Commitment representing a time interval	ı
Attachment	activitymimeattachm	\checkmark	MIME attachment for an activity.	
🛞 Campaign Activity	campaignactivity	\checkmark	Task performed, or to be performed, by	
🖾 Email	email	\checkmark	Activity that is delivered using email prof	.
Email Template	template	\checkmark	Template for an email message that cor	:
ر 🖵 Fax	fax	\checkmark	Activity that tracks call outcome and nu	·
E Letter	letter	\checkmark	Activity that tracks the delivery of a lette	:
C Phone Call	phonecall	\checkmark	Activity to track a telephone call.	¥
<			>	
		Ca	ancel « Back Next »	

Click "Next".

3. Data Source

In the "Choose a Data Source" screen select a source of the data you would like to import from. Then specify information needed by the selected data source type. Click "Finish"

New Import Project		-		×
Choose a Data Sour From where do you wa	c e ant to import data?			
Data source	<select a="" data="" source=""> <u>Select a data source></u> Microsoft Sql Server / Generic Odbc (Excel, Access, etc Text file (bt or .csv) Xml file (xml) Email (POP3, IMAP)</select>	c)		~
	« B	ack	F	inish

To import from a text file select the "Text file (.txt or .csv)" option form the Data source dropdown. Use Browse button to locate your source file. This technically can be any text file:

- Fields should be separated by a comma, tab, semicolon or colon.
- If any field value contains field separator, it must be delimited by single or double quote. Otherwise delimiter is not needed. For example if you have selected comma as a separator, any field value containing comma must be enclosed by "" or " ("Smith, John" or 'Smith, John").
- Line terminator is either CRLF, CR, LF or default. In most cases there is no need of changing it unless you want to import multi line fields.
- First row may contain a header. This is highly recommended as it later greatly helps to map fields.

New Import Project		- 🗆	×
Choose a Data Sour From where do you w	ce ant to import data?		
Data source	Text file (.txt or .csv)		\sim
Source Import File:	D:\IMP8\DPS_Accounts.csv	Browse	
Field Separator:	Comma (,) \checkmark		W
Field Data Delimiter:	Double Quote (") $\qquad \qquad \lor$		
Line Terminator:	Default ~		
	First row contains column headings		
		« Back Finis	sh

Clicking on 🕨 will test the connection.

To import from SQL Server or any ODBC data sources select Microsoft SQL Server/Generic ODBC option form the Data Source dropdown.

Select your connection type and enter a connection string. You can use one of the templates if you are not sure about connection string syntax.

SQL Server connection type is optimized for Microsoft SQL Server. **Generic ODBC** can be used for any other data source, like Microsoft Access, Microsoft Excel, My SQL, etc.

dd New Item Wizard				>		
Choose a Data Sour From where do you w	r ce ant to ir	nport data?		4		
Data source	Micro	osoft Sql Server / Generic Odbc (Excel, Access, etc)		~		
Connection type:		Sql Server	~			
Connection string temp	lates:	Sql Server; Integrared Security				
Connection string:		Data Source=serverAddress;Initial Catalog=dataBase;Integrated				
SQL query:		Wizard				
			^			
			~			
		« Back F	Finish			

Wizard button can help you to define a connection string. First select your data source (SQL, Excel, Access), click "Next" button and provide all required information. This Wizard is optional and is designed to help you with SQL Server, Microsoft Excel and Microsoft Access connection string creation. You can always enter a connection string manually.

onnection String Wizard 🔹 🔹	Connection String Wizard
burce SQL Server	Source SQL Server
Please select: SQL Server Microsoft Excel Microsoft Access	✓ Use Integrated Security Login: Password: Server: ✓ Database:
Next >	< Back Finish

Then enter your query in the SQL query field. This can be a simple or complex statement depending on your needs. Clicking on it will test the connection.

To import data from xml file select XML file (.xml) option from the Data source dropdown. Because xml file structure cannot be automatically determined it is required to provide an additional transformation file that tells how to extract the information from the source XML file. Clicking on **vill test the connection**.

Add New Item Wizard		×
Choose a Data Sour From where do you wa	ce ant to import data?	
Data source	Xml file (xml)	~
Source XML file:	D:\Contacts.xm	Browse
XSL file:	D:\Contacts xslt	Browse
	View	
Transformed file (depe	ends on XSLT):	
Field Separator:	Tab (\t) ~	
Field Data Delimiter:	None 🗸	
	First row contains column headings	
		« Back Finish

Below is an example of XML file containing contact data and transformation that is used to convert the source XML into a tab separated file. You can test your transformation by clicking "View" button.

XML file:

xml version="1.0"</th <th>encoding="utf-8"</th> <th>?></th> <th></th> <th></th>	encoding="utf-8"	?>		
Sample xml file</td <td>e to be used with</td> <td>Contacts.xslt</td> <td>></td> <td></td>	e to be used with	Contacts.xslt	>	
<contacts></contacts>				
<contact city="</td"><td>="Sacramento"</td><td>State="CA"</td><td>Country="US"</td><td>PostalCode="94987"</td></contact>	="Sacramento"	State="CA"	Country="US"	PostalCode="94987"
EmailAddress="MaryBe	ergstrom@ads.com"	>		
<address></address>				
1178				
Sandy Blvd.				
<firstname>Mary<</firstname>				
<lastname>Bergst</lastname>	trom			
<contact city="</td"><td>="Springfield"</td><td>State="IL"</td><td>Country="US"</td><td>PostalCode="62333"</td></contact>	="Springfield"	State="IL"	Country="US"	PostalCode="62333"
EmailAddress="Robert	tBorges@adc.com">			
<address>1074 Lo</address>	ori Drive <mark>></mark> X <mark>&l</mark>	t;		
<firstname>Rober</firstname>	rt			
<lastname>Borges</lastname>	s			
<contact city<="" td=""><td>="Hartford"</td><td>State="CT"</td><td>Country="US"</td><td>PostalCode="06198"</td></contact>	="Hartford"	State="CT"	Country="US"	PostalCode="06198"
EmailAddress="Stephe	enAcevedo@acm.com	L">		
<address></address>				
1172				
Flamingo				
Dr.				
<firstname>Steph</firstname>	nen			
<lastname>Aceved</lastname>	do			
<contact city<="" td=""><td>y="Dallas" S</td><td>state="TX"</td><td>Country="US"</td><td>PostalCode="20313"</td></contact>	y="Dallas" S	state="TX"	Country="US"	PostalCode="20313"
EmailAddress="Adrian	nDumitrascu@ac.co	m">		
<address>100 Rec</address>	d Oak Lane <td>ss></td> <td></td> <td></td>	ss>		
<firstname>Adria</firstname>	an			
<lastname>Dumit</lastname>	rascu			

Transformation (XSL) file:

```
<?xml version="1.0" encoding="utf-8"?>
<!--
   This is an example of simple xsl transformation file. It matches Contacts.xml
structure.
-->
<xsl:stylesheet version="1.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
 <!-- Set output format: Unicode, no xml header, text only. -->
  <xsl:output encoding="utf-8" omit-xml-declaration="yes" method="text" />
  <xsl:template match="/">
    <!--
       Output document header. Number of items should match fields.
       Name can be the same as xml element or attribute, but doesn't have to.
       Fields are separated by tab (	); new rows by CRLF (

).
    -->
    <xsl:text>Address1 Line1&#9;</xsl:text>
    <xsl:text>Address1 City&#9;</xsl:text>
    <xsl:text>Address1 StateOrProvince&#9;</xsl:text>
    <xsl:text>Address1 Country&#9;</xsl:text>
    <<u>xsl:text</u>>Address1 PostalCode&#9;</<u>xsl:text</u>>
    <xsl:text>EmailAddress&#9;</xsl:text>
    <xsl:text>FirstName&#9;</xsl:text>
    <xsl:text>LastName&#xD;&#xA;</xsl:text>
    <!--
        Output fields. Number of items should match header.
        Fields are separated by tab (	); new rows by CRLF (

).
    -->
    <xsl:for-each select="/Contacts/Contact">
     <xsl:value-of select="normalize-space(Address)" />
     <xsl:text>&#9;</xsl:text>
     <xsl:value-of select="normalize-space(@City)" />
     <xsl:text>&#9;</xsl:text>
     <xsl:value-of select="normalize-space(@State)" />
     <xsl:text>&#9;</xsl:text>
     <xsl:value-of select="normalize-space(@Country)" />
     <xsl:text>&#9;</xsl:text>
     <xsl:value-of select="normalize-space(@PostalCode)" />
     <xsl:text>&#9;</xsl:text>
     <xsl:value-of select="normalize-space(@EmailAddress)" />
     <xsl:text>&#9;</xsl:text>
     <xsl:value-of select="normalize-space(FirstName)" />
     <xsl:text>&#9;</xsl:text>
     <xsl:value-of select="normalize-space(LastName)" />
     <xsl:text>&#xD;&#xA;</xsl:text>
    </xsl:for-each>
  </xsl:template>
</xsl:stylesheet>
```

To import data from an email account select Email (POP3, IMAP) option from the Data source dropdown.

Specify your email server address and type (POP3 or IMAP). You can also specify a port in the mail server address if non-standard port should be used (for example: pop3:myserver.com:3200). Mark SSL if your server requires secure connections. You also have to provide user name and password. Clicking on **b** will test the connection.

Add New Item Wi	izard	×
Choose a Data From where do	a Source you want to import data?	
Data source	Email (POP3, IMAP)	~
Mail Server: Account Type: User Name: Password:	mailserves.com POP3 Chris	0
	« Back	Finish

When you have finished defining the data source, click "Finish" button and you will see the main screen window.

The main screen is dived into two sections. Left section contains a tree structure and is called Import Definition. It shows the entities included in the project.

Right section is content sensitive and shows detailed information for what is selected in the left section. Section title will change depending on what level is selected in the left pane. You can select a top-level Project item, Entity, Data Source, Data Filter, Field Mapping or Script.

By selecting a project in the left pane **Project Information** will be displayed in the right section of the main screen.

- 🔛 I 👔 📰 🗸	Custon	ners - Dyr	namics Pr	ofessional	Solutio	ons Import T	ool 2016			×
File Proje	t Con	nection	View	Licens	e	Help				^ ?
Add Rem	ie 🕇	Single	AII	Single	AII	Map				
Entity		Vali	date	Impo	rt	Settings				
Import Definiti	on		Project	Informat	ion			 	 	
CUSTOME CUS	RS at a Source ta Filter Ids Mapping ipt ta Source ta Filter Ids Mapping ipt titor mpetitors ta Source ta Filter Ids Mapping ipt) ship	Name Descript Created Date Path	iion by	CUST Tom 12 No D:\CF	Tom Tom ovember 2007 RM\Customers	s.dpsi			
🙈 <u>365 DEMO</u> 🚨 .	Ama Akar									.:

Name	Name of your project.
Description	Optional description.
Created by	System will populate this field with a user name that created the
	project. You can change this information if you wish.
Date	System will display date when you project was created.

By selecting the entity in the left pane **Item Import Options** will be displayed in the right section of the main screen.

👪 👔 🔚 🗢 Dynamics Profe	ssional Solutions Import Tool for Dynamics CRM 2016	– 🗆 🗙
File Project Connection	View License Help	^ (?
Add Clone T Single	All Single All Map lookups idate Import Settings	
Import Definition	Item Import Options	
Customers Account Data Source Script Contact	Item Business that represents a customer or potential customer. The company that is billed in business transactions. Import mode Import mode Import new records only Update existing records Delete matching records Other Set State Conflicts resolution On multiple match: Do nothing Treat enpty source field value as NULL Description	Enabled
🕘 <u>DPS</u> 🔱 Ama Akar		.:

Item	Contains entity description and technical name.				
Enabled	Specifies whether this entity should be included in the import. Disabled items will be skipped during the import.				
Import mode	 Specifies one of the import modes. If you want to update records make sure you have selected at least one key in a Fields Mapping Section. You may also delete records from the system or change record status. Available options: Import new records only – only new records will be imported, if record already exists it won't be updated. Update existing records – only updates existing records, if record doesn't exist it won't be created. Import new and update existing records – combination of the two above options. New record will be updated. Delete matching records – matching records will be deleted. Other Activate – use this option to activate inactive records. SetState – use this option to change record state. 				
Conflict resolution	 Decide what to do when multiple records match the selected key. Do nothing – no action will be executed if multiple existing records are found. Update all matching records – action will be executed against all matching records. 				
Truncate too long string value	If this option is marked system will truncate too long strings to the maximum allowed length of the specific field. Otherwise error will occur.				
Treat empty source value as null	If this option is marked system treats empty source value as a NULL; otherwise as an empty string.				
Skip update when there are no changes.	If this option is marked update command won't be executed if there are no changes. This means last modified column won't be updated. This option might be useful if you for example don't want to execute some workflow on save and there are no changes.				
Description	Enter an optional description for the entity import.				

By selecting Data Source for the specific entity in the left pane you can access **Data Source** settings in the right section of the main screen.



In this screen you can modify or change data source configuration.

By selecting Data Filter for the specific entity in the left pane you can access **Data Filter** in the right section of the main screen.



Data filter may be useful if you want to process only some of the records that are in the source file and you are unable to filter the data using other means (for example using a data source query). When filter condition is met, record will be processed otherwise it will be skipped.

In the example above, if source field "Class" contains character "X" record will be imported and other records will be skipped. You can use Functions and Operators when defining a filter. More about functions and operators you can find in later chapter.

By selecting the Fields Mapping for the specific entity in the left pane you can access **Fields Mapping** in the right section of the main screen.

File Deviced Connection Many History Hale Device		
Project Connection View License Help Design		^ (
✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓		
Single Single Clear Map automatically Skip update if record has not changed		
Validate Import Mapping Show or hide Options		
Import Definition Fields Mapping		
Customers Filter:		
- Q _{0L} Data Source Target Field Datatype Mapping Type Mapped To Sample Data	Import	Options
P Data Filter Account Number (accountnumber) String Source field Account Number DPSUK01	\checkmark	More
Address 1: City (address 1_city) String Source field Address 1: City London	\checkmark	More
Contact Address 1: County (address 1_county) String Source field Address 1: County United Kingdom	\checkmark	More
Address 1: Name (address 1_name) String Source field Address 1: Name Main Address:	\checkmark	More
Relationship Type (customertypecode) Picklist Source field Relationship Type Map Customer	\checkmark	More
Script Email (emailaddress 1) String Source field Email UK-Office@dps.c	. 🗹	More
Industry (industrycode) Picklist Source field Industry Map Information Tech.	\checkmark	More
Account Name (name) String Source field Account Name DPS United King.		More
Ownership (ownershipcode) Picklist Source field Ownership Map Private	\checkmark	More
Main Phone (telephone 1) String Source field Main Phone 44 (01983) 24524		More
Currency (transactioncurrencyid) Lookup Source field Currency Pound Sterling		More
		>

In this section you can map source fields to the CRM fields. This part will be described in details in the Chapter 6 of this manual.

Left pane context menu

In the left pane you can right click in order to open a context menu.

Add Item	Adds a new item to the current project (new entity to
	import).
Enable All	Enables all items in the current project. Only enabled
	items will be imported.
Disable All	Disables all items in the project. Disabled items will not
	be imported.
Move Up	Moves the selected item up in the hierarchy. Items are
	imported in the order as displayed in the tree.
Move Down	Moves the selected item down in the hierarchy. Items
	are imported in the specified order.
Expand All	Expands all items in the project.
Collapse All	Collapses all items in the project.
Clone	Creates a copy of the currently selected item.
Rename	Renames the selected item.
Remove	Removes the selected item form the project.



From the left pane in the main screen select Fields Mapping for the item you want to import.

Fields Mapping								
Filter:								
	Target Field	Datatype	Mapping Type	Mapped To		Sample Data	Import	Options
۱.	Account Number (accountnumber)	String	Source field	Account Number		DPSUK01	\checkmark	More
	Address 1: City (address1_city)	String	Source field	Address 1: City		London	\checkmark	More
	Address 1: County (address1_county)	String	Source field	Address 1: County		United Kingdom	\checkmark	More
	Address 1: Name (address1_name)	String	Source field	Address 1: Name		Main Address:	\checkmark	More
	Relationship Type (customertypecode)	Picklist	Source field	Relationship Type	Map	Customer	\checkmark	More
	Email (emailaddress1)	String	Source field	Email		UK-Office@dps.c	\checkmark	More
	Industry (industrycode)	Picklist	Source field	Industry	Map	Information Tech	\checkmark	More
	Account Name (name)	String	Source field	Account Name		DPS United King	\checkmark	More
	Ownership (ownershipcode)	Picklist	Source field	Ownership	Map	Private	\checkmark	More
	Main Phone (telephone1)	String	Source field	Main Phone		44 (01983) 245245	\checkmark	More
	Currency (transactioncurrencyid)	Lookup	Source field	Currency		Pound Sterling	\checkmark	More

Кеу	Indicates that this is the field that should be used to find existing record in the CRM. More than one field can be marked as key field. This basically determines which field or fields determine that record is unique. For example if you are importing contacts it can be email address (single key) assuming there can be only one contact with a given email address. Or it can be first and last name (two key fields). You don't have to select any key fields, but in this case duplicate records can be created. This can be resolved later by using duplicate detection in the CRM.
Target Field	This column lists all available fields for the selected entity type (e.g. fields in the CRM). Custom fields will be listed, too.
Data Type	This column provides information about data type of the target (e.g. CRM) field. Most of the types are self-explanatory. There is one special type that is worth mentioning: Lookup . This is a reference to another record in the CRM. For example Unit has Unit Group lookup field which specifies the parent unit group. Similarly parent customer for a contact, etc.
Mapping Type	 This column tells the system where to get the imported value from. Available options are: Unmapped – target field is not mapped to anything and won't be imported. Source field – target field is mapped to the data source field. Expression – target field is mapped to an expression (for example calculated value, constant). More about functions you can find in Chapter 9. For some type of fields like Status, Picklist, Owner there will be another option specific to this type.
Mapped To	If the selected mapping type is "Source field" this column will list all fields available in the data source. If the selected mapping type is "Expression" this column will show

	inline expression editor.					
	This unnamed column is used only when selected mapping type is "Expression" or if a target field is of specific type (for example Status, Picklist, Owner, etc.). In this case you will be provided with a list of available values.					
Sample Data	This column displays sample data from the data source.					
Import	This column indicates whether the field should be imported or not.					
Options	 vailable values. <u>his column displays sample data from the data source.</u> <u>his column indicates whether the field should be imported or not.</u> pdate options Default - import always updates CRM field with value from a source (or expression). Do not update if target field has already value Do not update with an empty value - import updates CRM field only when source is not empty. Append text- import appending new lines to memo fields. Field import Options It is useful for appending new lines to memo fields. 					
	Import					
	• Always					
	When creating new record only					
	 When updating existing record only 					

Ribbon commands and options – this is ribbon is visible when Fields Mapping is selected in the tree view:

88 [💕 🔜 👳	Dynamics Professiona	al Solutions Impo	ort Tool for	Fields Mapping			↔ _	\times
File	Project	Connection V	iew License	Help	Design				^ ?
Single	Single	Clear Man	sb 📑	Mode II Conflicts	mport new record	ds only othing (skip records)	•		
Single	Single	automatically	• 📭 🖂	Skip upo	late if record has	not changed			
Validate	Import	Mapping	Show or hide		Optio	ns			

Group	Command	Description
Validate	Single	Validates the import for currently selected entity.
Import	Single	Runs the import for currently selected entity.
Mapping	Clear	Clears all mappings.
Mapping	Map automatically	Tries to map source and target fields automatically
		based on matching target and source field names.
Show or hide		Show mapped fields only – hides or shows rows with
		unmapped fields.
Show or hide	ab	Show sample data column – hides or shows the
		sample data column.

Show or hide	1010	Show data type column – hides or shows the data
		type column.
Show or hide	8	Show primary key field – hides or shows a row with
		field that represent the ID of a record (GUID). This
		field cannot be imported to or updated, but can be
		used to uniquely identify the existing record.
Show or hide	‡	Highlight required fields – when selected, business
		required fields will be highlighted. These are the
		fields required when creating new record.
Show or hide	<u>_</u>	Show target field information – hides or shows the
		panel with additional information about CRM field.
Options	Mode	See page 28 for more details about import modes.
Options	Conflicts	See page 28 for more details about conflict
		resolution.
Options	Skip update if	See page 28 for more details about this option.
	records has not	
	changed	

When selected mapping type is "Expression", you can use Expression Editor to build expression. Click "Edit to access the **Expression Editor**. Build your expression using fields from the data source and/or available functions. You can drag and drop items from the list displayed on the right hand side. There are two buttons:

- Save button saves the expression to the row currently being edited.
- Verify button checks the expression syntax.

Expression Editor - productid				
i 🖬 🙉		E		
Lookup("product", [Product], "name")	Functions	\sim		
	Abs Address CBool CCur CDate CDbl CInt CStr Date DateAdd Format FromBase64 Guid Hour IIf InStr InStr InStr	< >		

For some field types, like Picklist, Status, Owner, etc. and when selected mapping type is "Source field" you will have to map source values to the CRM values. In this case click on "Map..." link:

Mapped Values - [customertyped	code] x
Source	Target
Customer	Competitor Consultant Customer Influencer Investor Other Patner Press Prospect Reseller Supplier Vendor

For Customer or some Lookup type fields and when selected mapping type is "Source field" you will have to specify the target lookup type. In this case click on "Target..." link:

Lookup Type	x
Account	~
Account Contact Customer	

When all project settings have been specified, you can validate whether your import will work the way it was intended to using "Validate Single" or "Validate All" commands.

I	👪 💕 🔜 🛛 Dynami	cs Professional So	lutions Import Too	l for Dynan	nics CRM 2015	↔ _	\times
	File Project Con	nection View	License H	lelp			^ 🕐
	Add Remove	Single All	Single All	Map			
I	Kemove 🐳	Single fill	Single fill	lookups			
l	Entity	Validate	Import	Settings			

At this point no import is actually executed. The program only simulates the import process to locate any potential problems. You can study the results in the Import screen by scrolling through the validation results. To save results to a text file or copy displayed information to the Clipboard, right click on the window (or click the appropriate icon near "Save" button) and select the action. Verbose Logging option specifies that much more information will be logged and displayed in the progress window. It is usually useful when troubleshooting import issues.

Import			
Timestamp	Status	Message	
2016-01-24 19:35:54	Info	Message	
2016-01-24 19:35:54	Info	(c) 2007-2016 Dynamics Professional Solutions Ltd	
2016-01-24 19:35:54	Info	Import Tool for Dynamics CRM 2016	
2016-01-24 19:35:54	Info	Engine version: 8.0.15350.1	
<			>
Test Only	erbose Log	gging Auto Scroll Start	Cancel
Validating Created: 0 Up	dated: 0	Skipped: 0 Errors: 0 Deleted: 0	.:

To perform the import, select "Import Single" or "Import All" command. If you have just performed validation and Import screen is still open, simply unmark the "Test Only" checkbox in the left bottom corner of the screen and click the Start button.

Another way of running the import is to use the command line version of the ImportTool ImportToolCmd.exe which can be found in the Import Tool folder (typically "C:\Program Files\Dynamics Professional Solutions\ImportTool").

This can be useful when you want to run import on a regular basis (scheduled). For example you can create a schedule task using Windows Task Scheduler or any other scheduler software that will execute ImportToolCmd.exe. Please note that ImportToolCmd.exe must run under account that is a valid CRM user with all required privileges.

Options

ImportToolCmd /p projectfile [/c connection] [/pwd password] [/f pluginfile] [/l logfile] [/s]

Option	Description
/р	Required. Specifies the import project file to run.
/c	Specifies the connection to use. If you have only one connection defined then this parameter is optional. Otherwise it is required.
/pwd	If password is not saved in the connection then it is required to provide a password.
/f	Optional. Specifies the custom plugin file. May be specified more than once.
/1	Optional. Specifies the log file name. When parameter is not specified all messages are written to the screen only.
/s	Optional. When specified import runs in the simulation mode. Otherwise import runs in normal mode.

Examples

Run import (default connection):

ImportToolCmd.exe /p "C:\My Projects\ImportAccounts.dpsi"

Run import with specified connection:

ImportToolCmd.exe /p "C:\My Projects\ImportAccounts.dpsi" /c "My CRM 2011" Run import and log messages to Import.log:

ImportToolCmd.exe /p "C:\My Projects\ImportAccounts.dpsi" /l C:\Import.log Run import in test (validation) mode:

in import in test (validation) mode:

ImportToolCmd.exe /p "C:\My Projects\ImportAccounts.dpsi" /s Display help:

ImportToolCmd.exe

One of the powerful features you can find in the Import Tool are expressions. Expressions are useful in complex import scenarios where default field mapping is not sufficient.

Syntax used by the expressions in the Import Tool is very simple and if you are familiar with basic concepts of programming they should be easy to use. There are four main elements used in the expressions:

- Literals
- Variables
- Operators
- Functions

1. Literals

Literals represent values that are basically constant.

For example:

- "John Smith" is a string
- 127.54 is a decimal
- 13 is an integer
- #2007-12-27# is a date

2. Variables

Variables represent fields that are available in the input file. For example, if your input file has a column named "Last Name" it can be referred as [Last Name]. Value of [Last Name] depends on the actual data in your input file. You can use any column name that is available in your input file regardless whether this column is imported or not. Generic rule is that you should use square brackets ([]) to indicate input file field.

3. Operators

Operators are special functions that operate on literals, variables or other functions. The list of available operators:

- Addition '+'
- Subtraction '-'
- Multiplication '*'
- Division '\'
- Equal '='
- Not equal '<>'
- Less than '<'
- Less than or equal to '<='
- Greater than '>'
- Greater than or equal to '>='
- Logical AND 'AND' or '&'
- Logical OR 'OR' or '|'
- Logical NOT 'NOT' or '!'

For example:

- "John" + " Smith" equals "John Smith"
- 127.12 + 3 equals 130.12

It is important that operators require compatible arguments. For example "#2007-01-12# + 10" is invalid since first argument is a date, second is a number. In this case we can use a function if intention was to add 10 days to the specified date: DateAdd("d", 10, #2007-01-12#).

4. Functions

Functions are described in detail in the next chapter.

Some examples of expressions that can be used in the Import Tool:

- *Ilf([Last Name] = "Smit", [Last Name] + "h", [Last Name])* This example appends *missing "h" letter in the "Smit" name.*
- *DateAdd*("m", 1, Date())
 This example returns a date that is 1 month from today.
- [*Current Price*] + 10 This example increments current price by 10.

This chapter describes useful function that can be used within DPS Import Tool.

1. Conversion functions

CBool Function

The CBool function converts an expression to type Boolean.

CBool(expression)	
Parameter	Description
expression	Required. Any valid expression. A nonzero value returns True, zero returns False. An error occurs if the expression cannot be interpreted as a Boolean value.

Example 1

CBool(0)	
Returns False	

Example 2

CBool(32)			
Returns True			

Example 3

СВо	ol("True")	
Retu	rns True	

CCur Function

The CCur function converts an expression to type Currency. Note: This function is locale and culture aware.

Syntax		
CCur(expression)		
Parameter	Description	
expression	Required. Any valid expression.	

Example 1

CC	Cur("100.25")	
Ret	eturns 100.25	

CDate Function

The CDate function converts a valid date and time expression to type Date. Note: This function is locale and culture aware.

Syntax

CDate(expression)	
Parameter	Description
expression	Required. Any valid expression (like Date() or Now()).

Example 1

Date only CDate("2007-09-01")

Example 2

Date and Time CDate("2007-09-01 11:12:23")

CDbl Function

The CDbl function converts an expression to type Double. Note: This function is locale and culture aware.

Syntax

CDbl(expression)

Parameter	Description
expression	Required. Any valid expression.

Example 1

CDbl("28.11")	
Returns 28.11	

CInt Function

The CInt function converts an expression to type Integer.

Syntax

CInt(expression)	
Parameter	Description
expression	Required. Any valid expression.

Example 1

Clnt(127.98)	
Returns 128	

CStr Function

The CStr function converts an expression to type String.

Syntax

CStr(expression)	
Parameter	Description

expression	Required. Any valid expression.
	If expression is:
	Boolean - then the CStr function will return a string containing True or False.
	Date - then the CStr function will return a string that contains a date in the short-date format.
	Numeric - then the CStr function will return a string that contains the number.

Example 1

CStr(127.98)	
Returns "127.98"	

2. Date and time functions

Date Function

The Date function returns the current system date.

Syntax			
Date()			

Return current system date Date()

DateAdd Function

The DateAdd function returns a date to which a specified time interval has been added.

Syntax

Example 1

DateAdd(interval, number, date)

Parameter	Description	
interval	Required. The interval you want to add.	
	Can take the following values:	
	yyyy - Year	
	q - Quarter	
	m - Month	
	y - Day of year	
	d - Day	
	w - Weekday	
	ww - Week of year	
	h - Hour	
	n - Minute	
	s - Second	
number	Required. The number of interval you want to add. Can either be positive, for dates in the future, or negative for dates in the past.	
date	Required. Variable or literal representing the date to which interval is added.	

Example 1

Add one month to current date
DateAdd("m", 1, Date())

Example 2

Subtract 14 days from current date DateAdd("d", -14, Date())

Hour Function

The Hour function returns a number between 0 and 23 that represents the hour of the day.

Syntax	
Hour(time)	
Parameter	Description
time	Required. Any expression that can represent a time.

Example 1

Return current hour
Hour(Now())

Minute Function

The Minute function returns a number between 0 and 59 that represents the minute of the hour.

Syntax	
Minute(time)	
Parameter	Description
time	Required. Any expression that can represent a time.

xample 1	
Return current minute Minute(Now())	

Month Function

The Month function returns a number between 1 and 12 that represents the month of the year.

S	yntax	

Month(date)	
Parameter	Description
date	Required. Any expression that can represent a date.

Example 1

Return current moth	
Month(Date())	

Now Function

The Now function returns the current date and time according to the setting of your computer's system date and time.

Syntax		
Now()		
Example 1		
Return current date and time Now()		

Second Function

The Second function returns a number between 0 and 59 that represents the second of the minute.

Syntax	
Second(time)	
Parameter	Description

time Required. Any expression that can represent a time.

Example 1

Return current seconds	
Second(Now())	

Time Function

The Time function returns the current system time.

Syntax	
Time()	

Example 1

Return current time Time()

Year Function

The Year function returns a number that represents the year.

Syntax

Year	(date)

Parameter	Description
date	Required. Any expression that can represent a date.

Example 1	
Return current year Year(Date())	

3. String functions

InStr Function

The InStr function returns the position of the first occurrence of one string within another.

Syntax		
InStr(string1, string2[, ignoreCase])		
Parameter	Description	
Taranicici	Description	
string1	Required. The string to be searched.	
string2	Required. The string expression to search for.	
ignoreCase	Optional. Specifies the string comparison method. Default is True.	

Example 1

InStr("Hello' Returns 5	['] , "o")		

Example 2

Example 3		
InStr("Hello", "l")		
Returns 3		

InStrRev Function

The InStrRev function returns the position of the first occurrence of one string within another. The search begins from the end of string, but the position returned counts from the beginning of the string.

Syntax

InStrRev(string1, string2[, ignoreCase])		
Parameter	Description	
string1	Required. The string to be searched.	
string2	Required. The string expression to search for.	
ignoreCase	Optional. Specifies the string comparison method. Default is True.	

Example 1

InStrRev("Hello", "o")	
Returns 5	

Example 2

InStrRev("Hello",	"L",	True)
Returns 0		

Example 3

InStrRev("Hello",	"l")
Returns 4	

LCase Function

The LCase function converts a specified string to lowercase.

Syntax

LCase(string)	
Parameter	Description
string	Required. The string to be converted to lowercase.

Example 1

LCase("Hello")	
Returns "hello"	

Left Function

The Left function returns a specified number of characters from the left side of a string.

Syntax

Left(string, length)		

Parameter	Description
string	Required. The string to return characters from.
length	Required. Specifies how many characters to return. If set to 0, an empty string ("") is returned. If set to greater than or equal to the length of the string, the entire string is returned.

Example 1

Left("Hello", 2)	
Returns "He"	

Example 2

Left("Hello", 20)		
Returns "Hello"		

Example 3

T 0 (//TT 11 H 0)	
$\int att(0) \Box a \Box a^{\gamma}$ (1)	
Lend meno , o)	
D ((11)	
Voturne ••//	
Neturns	

Len Function

The Len function returns the number of characters in a string.

Syntax

Len(string)	
Parameter	Description
string	Required. A string expression.

Example 1		
Len("Hello")		
Returns 5		

LTrim Function

The LTrim function removes spaces on the left side of a string.

Syntax

LTrim(string)	
Parameter	Description
string	Required. A string expression.

Example 1

LTrim(" Hello ")	
Returns "Hello "	

Mid Function

The Mid function returns a specified number of characters from a string.

Syntax

Mid(string, start,length)		
	Parameter	Description
	string	Required. The string to return characters from.
	start	Required. Specifies the starting position. If set to greater than the number of characters in string, it returns an empty string ("").
	length	Required. The number of characters to return.

Example 1

Mid("Hello", 2, 2) Returns "el"

Example 2		
Mid("Hello", 1, 1) Returns "H"		

Example 3

Mid("Hello", 3, 20) Returns "llo"

Right Function

The Right function returns a specified number of characters from the right side of a string.

Syntax

2		
Right(string, length)		
Parameter	Description	
string	Required. The string to return characters from.	
length	Required. Specifies how many characters to return. If set to 0, an empty string ("") is returned. If set to greater than or equal to the length of the string, the entire string is returned.	

Example 1	
Right("Hello", 2) Returns "lo"	

Example 2
Right("Hello", 20) Returns "Hello"

Example 3

Right("Hello", 0)	
Returns ""	

RTrim Function

The RTrim function removes spaces on the right side of a string.

Syntax	
RTrim(string)	
Parameter	Description

string	Required. A string expression.
Example 1	
DTrim (" II-11- ")	

RTrim(" Hello ")	
Returns "Hello"	

Space Function

The Space function returns a string that consists of a specified number of spaces.

Syntax

Space(number)	
Parameter	Description
number	Required. The number of spaces you want in the string.

Example 1

Space(2)	
Returns ""	

Trim Function

The Trim function removes spaces on both sides of a string.

Syntax	
Trim(string)	
Parameter	Description
string	Required. A string expression.

Example 1

Trim(" Hello ")	
Returns "Hello"	

UCase Function

The UCase function converts a specified string to uppercase.

Syntax

UCase(string)	
D (

Parameter	Description
string	Required. The string to be converted to uppercase.
-	

Example 1

UCase("Hello") Returns "HELLO"

4. Math Functions

Abs Function

The Abs function returns the absolute value of a specified number.

Syntax

Abs(number)	
Parameter	Description
number	Required. A numeric expression.
Example 1	

Example 1	
Abs(-2)	
Returns 2	

Round Function

The Round function rounds a number.

Syntax

Round(expression, numdecimalplaces)

Description
Required. The numeric expression to be rounded.
Required. Specifies how many places to the right of the decimal are included in the rounding.
I F F

Example 1

Round(10.244, 2) Returns 10.24

5. Miscellaneous functions

Format Function

The Format function returns an expression formatted using specified format. Note: This function is locale and culture aware.

Syntax

Format(expression, format)	
Parameter	Description
expression	Required. The expression to be formatted.
format	Required. The format to apply. Can be any .NET Framework format.

Example 1

Format(20, "C")
Returns "\$20"

Example 2

Format(64, "X")	
Returns "40" (hexadecimal)	

Guid Function

The Guid function generates new unique identifier.

Syntax

Gud()

IIf Function

The IIf function returns one of two objects depending on the evaluation of the condition.

Syntax	
IIf(condition, truePart, falsePart)	
Parameter	Description
condition	Required. The condition to be evaluated.
truePart	Required. Part will be returned when condition is True.
falsePart	Required. Part will be returned when condition is False.

Example 1

IIf(5 > 1, "It's true", "It's false")
Returns "It's true"

Example 2

Format([Field]="", Null(),[Field]) Converts empty string to NULL value.

IsNull Function

The IsNull function replaces NULL with the specified value.

Syntax

IsNull(expression, replacement)	
Parameter	Description
expression	Required. The expression to check.
replacement	Required. The replacement value to use when expression is NULL.

Example

IsNull([Field], "Null replacement") When [Field] is NULL it will return "Null replacement". Otherwise [Field] will be returned.

Null Function

The Null function returns the NULL value.

Syntax

Null()

Example

Return NULL value Null()

ReadFile Function

The ReadFile function reads content of the specified file to a string.

Syntax

ReadFile(fileName)

Example

ReadFile("C:\Folder\MyFile.txt")

ReadFileBase64 Function

The ReadFileBase64 function reads content of the specified file to a Base64 encoded string.

Syntax

ReadFileBase64(fileName)

Example

ReadFileBase64("C:\Folder\MyFile.txt")

ToBase64 Function

The ToBase64 function encodes a string using Base64 encoding.

Syntax

ToBase64(string)

Example

ToBase64("Hello!") Returns "SGVsbG8h"

6. CRM Functions

Lookup Function

The Lookup function returns a primary key (ID) for the specified entity. This function can to be used for any CRM field of type Lookup.

Syntax

Lookup(entity, value[, field])	
Parameter	Description
entity	Required. Any valid CRM entity.
value	Required. A value being looked up.
field	Optional. Specifies a primary field used for queries. When parameter is missing the default primary field will be used.

Example 1
Lookup("account", "John Smith") Returns the account object with the specified name.

Example 2

Lookup("product", "Bicycle-100") Returns the product object.

Example 3

Lookup("account", "AB0201", "accountnumber") Returns the account object with the specified account number.

LinkedLookup Function

The Lookup function returns a primary key (ID) value of the specified entity. It also allows linking to another entity. One of the examples is if you want to retrieve a unit record with the specified name for the specified unit group name. Maximum of 4 entities can be linked.

Syntax

LinkedLookup(entity1, field1, value1, [entity2, field2, value2...])

Parameter	Description
entity1	Required. Primary entity which is any valid CRM entity name.
field1	Required. Entity field that is used as a condition criteria.
value1	Required. Value for the primary condition.
entity2	Secondary CRM entity name that primary entity links to.
field2	Secondary entity field that is used as condition criteria for this entity.
value2	Value for the secondary condition.
	Additional optional linked entities (entity3, field3, value3), (entity4, field4, value4).

Example

LinkedLookup("uom", "name", [UoM], "uomschedule", "name", [UoMGroup]) Returns the unit with name matching data source column UoM and unit group name matching data source column UoMGroup.

Sql Function

The Sql function executes a custom query against specified entity. Note: If this function returns more than one row an error will be raised.

Syntax

Sql(entity, field, condition)		
Parameter	Description	
entity	Required. Any valid CRM entity name.	
field	Required. A field to return.	
condition	Required. A condition. It corresponds to SQL WHERE clause and therefore any valid SQL statement can be used.	

Example 1

Sql("account", "websiteurl", "name='Mountain Toy Store' AND statuscode=1") Returns the website url for the account with the specified name.

Example 2

Sql("product", "productnumber", "description='Aluminum alloy cups; large diameter spindle."") Returns the product number for the product with the specified description.

PartyList Function

The PartyList function returns a set of entities.

This function is similar to Lookup functions. The difference is that it can return more than one value. It can only be used for fields of PartyList type.

Syntax

PartyList(entity1, value1[, entity2, value2, [entity3, value2]])		
Parameter	Description	
entity1	Required. Any valid CRM entity name.	
value1	Required. A value being looked up.	
entity2	Optional. See entity1.	
value2	Optional. See value1.	
	Additional items to look up.	

Example 1

```
PartyList("systemuser", "John Smith", "account", "A Bike Store")
Returns two items.
```

In this version of the Import Tool we are introducing extremely powerful scripting feature that can be used in the scenarios where standard mapping and/or expressions are not sufficient. This is more advanced feature and requires some programming knowledge.

There are two scripting languages currently supported: VB.NET and C#. We recommend using C#, however exactly the same can be achieved using VB.NET.

In the Import Definition for every entity there are now four items available:

- Data Source,
- Data Filter,
- Fields Mapping and
- Script.

When you select Script, Advanced Scripting pane will be displayed. Scripting is disabled by default. To enable it, simply click on the button which shows the current script status (e.g. "Disabled"). Now it should show the "Enabled" status. Clicking on the button when script is enabled will disable the scripting.



Once you enabled the scripting, you will have to decide which language you prefer:

- C# or
- VB.NET.

We recommend using C#, however if you are more familiar with Visual Basic then go ahead and select VB.NET. And remember, once you selected your preferred language, should you decide to change it later you will have to write your script again. There is no automatic conversion between script languages.

When you have selected your preferred language, the template script will be created. Now you will be able to add your own import business logic. But first let's explain the structure of the script.

Use "Compile" button to test the syntax of the script.

a. Default namespaces

C# using System; using System.Collections.Generic; using System.Text; using ImportTool.Scripting;

VB.NET

```
Imports System
Imports System.Collections.Generic
Imports System.Text
Imports ImportTool.Scripting
```

This tells which namespaces should be used. You can add additional namespaces if you need, refer to.NET Framework reference on MSDN for more details. You can also specify additional assemblies you would like to use in the application configuration file:

<add key="CustomScriptAssemblies" value="System.Data.dll;System.Web.dll"/>

b. Script class

This is the main class that must exist. You can safely remove the methods you are not going to use, but you have to keep main class definition. Otherwise your script will not compile.

```
C#
```

```
static class Script
{
    static void BeforeEntityImport(BeforeEntityImportEventArgs e)
    {
    static void BeforeRecordImport(BeforeRecordImportEventArgs e)
    {
    static void AfterRecordImport(AfterRecordImportEventArgs e)
    {
    static void AfterEntityImport(AfterEntityImportEventArgs e)
    {
    static void AfterEntityImport(AfterEntityImportEventArgs e)
    {
    }
}
```

VB.NET

```
Friend Class Script
Private Shared Sub BeforeEntityImport(ByVal e As BeforeEntityImportEventArgs)
End Sub
Private Shared Sub BeforeRecordImport(ByVal e As BeforeRecordImportEventArgs)
End Sub
Private Shared Sub AfterRecordImport(ByVal e As AfterRecordImportEventArgs)
End Sub
Private Shared Sub AfterEntityImport(ByVal e As AfterEntityImportEventArgs)
End Sub
End Sub
```

There are four methods (events) you can add your code to:

- BeforeEntityImport

Method is called when the import of the entity is about to start. You can programmatically decide whether to continue the import of this entity or to skip it.

BeforeEntityImportEventArgs has the following properties:

Property	Туре	Description	
Cancel	bool	<pre>Specifies whether to skip the import of this entity. If set to true then import of the entity will be skipped. For example: C# if (e.EntityName == "product") { e.Cancel = true; } VB.NET If e.EntityName = "product" e.Cancel = True End If</pre>	
EntityName	string	<pre>Specifies the name of the entity being imported, for example "account", "contact", "product", etc. Read-only. For example: C# if (e.EntityName == "account") { Logger.Log(LogLevel.Info, "Hello from script: " + e.EntityName); } VB.NET If e.EntityName = "account" Logger.Log(LogLevel.Info, "Hello from script: " + e.EntityName) End If</pre>	

- BeforeRecordImport

Method is called when the import of a record is about to start. You can programmatically decide whether to continue the import of this record or to skip it.

BeforeRecordImportEventArgs has the following properties:

Property	Туре	Description	
Cancel	bool	Specifies whether to cancel the import of the current record. If set to true then import of the current entity will not start. For example:	
		C#	
		<pre>if (e.OldEntity != null)</pre>	
		{	
		<pre>if ((string)e.OldEntity["name"] == "A Store (sample)") ,</pre>	
		(
		e.Cancel = true:	
		}	
		else	
		{	
		<pre>e.NewEntity["description"] = e.OldEntity["name"];</pre>	
		}	

		VB.NET
		If (Not e.OldEntity Is Nothing) Then
		<pre>If (CStr(e.OldEntity.Item("name")) = "A Store (sample)") Then</pre>
		' Cancel current record
		e.Cancel = True
		Else
		<pre>e.NewEntity.Item("description") = e.OldEntity.Item("name")</pre>
		End If
		End If
DataSource DataSource		<pre>Provides access to the data used as a data source. You can access data source fields either by index or name. For example: C# object fieldValueByName = e.DataSource["SourceFieldName"];</pre>
		<pre>object fieldValueByIndex = e.DataSource[2];</pre>
		VB.NET
		<pre>Dim fieldValueByName = e.DataSource("SourceFieldName")</pre>
		<pre>Dim fieldValueByIndex = e.DataSource(2)</pre>
NewEntity	Entity	This is the new entity that will be imported (created, updated, etc). You can modify it before the import, for example you can set additional entity property values (even if not configured for import). Generally you have full access to the entity before the actual import starts, so you can apply your own business logic.
OldEntity	Entity	This is the original (existing) entity that will be updated. This property will not be specified for new records.

Entity data type is fully described in Microsoft Dynamics CRM 2011 SDK which can be downloaded from MSDN.

- AfterRecordImport

Method is called after the import of a record. AfterRecordImportEventArgs has the following properties:

Property	Туре	Description		
Id	Guid?	Specifies the Id of the newly created record.		
		Specifies whether to cancel the import of the current record. If set to true then import of the current entity will not start. For example:		
		C#		
		<pre>if (e.OldEntity != null)</pre>		
		{		
		<pre>if ((string)e.OldEntity["name"] == "A Store (sample)") </pre>		
		<pre>{ // Cancel current record </pre>		
		e.Cancel = true;		
		}		
		else		
		{		
		<pre>e.NewEntity["description"] = e.OldEntity["name"];</pre>		
		}		
		VB.NET		
		If (Not e.OldEntity Is Nothing) Then		
		<pre>If (CStr(e.OldEntity.Item("name")) = "A Store (sample)") Then</pre>		
		' Cancel current record		
		e.Cancel = True		
		Else		
		e.NewEntity.Item("description") = e.OldEntity.Item("name")		
		End If		
DataSource	DataSource	Provides access to the data used as a data source. You can access data source fields		
DataSource	DataSource	either by index or name. For example:		
		C#		
		<pre>object fieldValueByName = e.DataSource["SourceFieldName"];</pre>		
		<pre>object fieldValueByIndex = e.DataSource[2];</pre>		
DataSource	DataSource	<pre>End If Provides access to the data used as a data source. You can access data source fields either by index or name. For example: C# object fieldValueByName = e.DataSource["SourceFieldName"]; object fieldValueByIndex = e.DataSource[2];</pre>		

		VB.NET
		<pre>Dim fieldValueByName = e.DataSource("SourceFieldName")</pre>
		<pre>Dim fieldValueByIndex = e.DataSource(2)</pre>
NewEntity	Entity	This is the new entity that will be imported (created, updated, etc). You can modify it before the import, for example you can set additional entity property values (even if not configured for import). Generally you have full access to the entity before the actual import starts, so you can apply your own business logic.
OldEntity	Entity	This is the original (existing) entity that will be updated. This property will not be specified for new records.

-

AfterEntityImport Method is called after the import of an entity. AfterEntityImportEventArgs provides the arguments for the method:

Property	Туре	Description		
EntityName	string	Specifies the name of the entity that was imported, for example "account", "contact", "product", etc. Read-only. For example:		
		C#		
		<pre>if (e.EntityName == "account")</pre>		
		{		
		Logger.Log(LogLevel.Info, "Hello from script: " + e.EntityName);		
		YD.NEI		
		II e.EntityName = "account"		
		Logger.Log(LogLevel.Inio, "Helio from Script: " + e.EntityName)		
		End II		
ErrorCount	Int	The number of errors which occurred during the import. Zero means no errors.		

c. Global objects and helper methods Logger

It represents the Logger class you can use in your script to log errors, warnings and messages. There are 3 levels available: Info, Warning and Error. Messages will appear in standard import log.

Examples:

C#

```
Logger.Log(LogLevel.Info, "Information");
Logger.Log(LogLevel.Warning, "Warning");
Logger.Log(LogLevel.Error, "Error");
Logger.Log("Information too");
```

VB.NET

```
Logger.Log(LogLevel.Info, "Information")
Logger.Log(LogLevel.Warning, "Warning")
Logger.Log(LogLevel.Error, "Error")
Logger.Log("Information too")
```

Globals

It represents the class that provides some global variables.

Property	Туре	Description
ContinueOnScriptError	bool	Specifies whether the import should
		continue if there is an error in the custom
		script. Default value is true.
		Examples:
		C#
		Globals.ContinueOnScriptError = true;
		VB.NET
		Globals.ContinueOnScriptError = True
CustomData	object	This property can be used to store any data
		during the import. It can be useful if you
		need to preserve some information about
		previously imported records, etc.
IsTestMode	bool	Indicates whether the import is running in
		the test mode or not.
OrganizationServiceProxy		Provides the direct access to the
-		organization web service. More information
		about this class you can find in the
		Dynamics CRM SDK.

Query

It provides methods for querying the CRM.

List<Guid> Lookup(string entityName, string attributeName, object value)
 EntityCollection Execute(QueryExpression query)

Above methods are provided for the convenience only as you can use Globals.OrganizationServiceProxy to the same.

If you have any questions or problem with our products contact our support team. Submit your question using New Support Request Form on our Web page. A member of our support team will get in touch with you as soon as possible.

Support:	http://www.dynamics-pros.com/support
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