jProductivity LLC

Protection!™

Microsoft Dynamics CRM Connector

v1.0

Administrator Guide

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Applicability
This document applies to Protection! Microsoft Dynamics CRM Connector v1.0 software.

Contents

Chapter 1

Overview

This document describes how to setup and administer *Protection!* Microsoft Dynamics CRM *Connector* application (hereafter "*Connector*").

Connector provides integration between Protection! Enterprise and Microsoft Dynamics CRM (hereafter "Dynamics CRM"). It is a J2EE application responsible for handling Protection! Connect™ events and for adding/updating data in *Dynamics CRM* (i.e., adding contacts or creating opportunities). With this *Connector* all of the licensing and customer activities in the Protection! Enterprise will be correctly reflected in *Dynamics CRM* providing up-to-date data for Sales, Management and Marketing staff.

The following is a brief description of *Connector* workflow:

1. On create or update event for an Evaluation license:
   a. Create a new Opportunity.
   b. Create or update corresponding Account and/or Contact.
   c. Associate Opportunity with corresponding Campaign (optional).
2. On create or update event for an Extended Evaluation license:
   a. Create or update Opportunity with increased probability percentage.
   b. Create or update corresponding Account and/or Contact.
   c. Associate Opportunity with corresponding Campaign (optional).
3. On create or update event for a Commercial license:
   a. If Opportunity exists then update its Sales Stage with status Closed-Won.
   b. Create or update corresponding Account and/or Contact.
   c. Create an Asset for the license and associate it with the corresponding Account.
   d. Optionally create an order that corresponds to the issued Commercial license.
4. On create or update event for a Customer:
   a. Create or update corresponding Account and/or Contact.

> **Note**
>
> *Connector* requires Protection! Connect™ application to be properly configured, up and running. Please consult the <PROTECTION_ENTERPRISE_HOME>/server/connect/doc/Protection_Connect_Administrator_Guide.doc document on how to configure and deploy Protection! Connect™.

Chapter 2

Microsoft Dynamics CRM Configuration

This chapter describes steps need to be done in order to prepare the Microsoft Dynamics CRM for integration with Protection!

2.1 Application Customization

The *Connector* requires that certain customizations need to be applied to *Dynamics CRM*:

1. Login to the *Dynamics CRM* as Administrator.
2. Go to the *Settings* | *Customization* | *Import customizations* page.
3. Browse and upload the <Connector_Home>/Customizations.zip file
4. Select the all entities and press the *Import Selected Customizations* button.
5. Make Assets list visible by:
   a. Go to the *Settings* | *Customization* | *Customize Entities* page.
   b. Select the *Asset* entity for modification.
   c. Select desired *Areas* to display *Assets* (Sales for example).
   d. Publish *Asset* entity to apply changes.

2.3 Setting up Products

License and License Action events cannot be processed without existence of corresponding products in *Dynamics CRM*. Therefore all the products used by Protection! Enterprise must be listed in *Dynamics CRM* to allow working with them. The easiest way to setup products is exporting them using Enterprise Manager but it is also possible to setup/maintain them manually if desired.

2.3.1 Setting up Products Environment

Before setting up products the products' environment must be correctly setup:

1. Go to the *Settings* | *Product Catalog* | *Unit Groups* page.
2. Add default unit group (*Default Unit* by default), if not exists, and add a primary unit (*Primary Unit* by default) to this group. If default values were not used update the `MicrosoftDynamicsCRMConnector.properties` file and assign proper values to the `product.unit_group` and the `product.unit` properties.
3. Go to the *Settings* | *Product Catalog* | *Price Lists* page.
4. Add a default price list (*Default* by default). If default value was not used update the `MicrosoftDynamicsCRMConnector.properties` file and assign proper value to the `product.price_list` property.

2.3.2 Setting up Products Using Enterprise Manager

All the products can be added to *Dynamics CRM* by choosing the *File* | *Export* | *Products to Protection! Connect* menu item.

It is recommended to specify default price for the each product. To do it:

1. Go to *Settings* | *Product Catalog* | *Producs* page.
2. Open each Product for editing.
3. Open *Default* price list and enter a valid *Amount* value.

2.3.3 Setting up Products Manually

Any required products can be added at any time using the *Settings* | *Product Catalog* | *Products* page. For the each product the *"Product Code"* field in the *Dynamics CRM* must correspond to the *"Product ID"* in Protection!.

If a product has several editions all of them should be listed in *Dynamics CRM* as independent products. Each such product would have *"Product Code"* as a concatenation of *"Product ID"* and *"Product Edition ID"* separated by underscore sign. For example the Demo Calculator product has two editions: Standard and Professional, so there would be two corresponding products in Dynamics CRM - *"DemoCalc_Std"* and *"DemoCalc_Pro"*.

Chapter 3

Connector Deployment and Configuration

3.1 Deployment on GlassFish Application Server

To deploy *Connector*:

1. The `MicrosoftDynamicsCRMConnector.properties` configuration file needs to be modified (see section "Connector Configuration" below), and then copied to the GlassFish domain's configuration folder: `<GLASSFISH_HOME>/domains/domain1/config`
2. The `MicrosoftDynamicsCRMConnector.license` license file must be copied to the `<GLASSFISH_HOME>/domains/domain1/config` folder. If you need a license you may either:
   - Buy a commercial license at: Protection! Store.
   - Request a trial license at: Dynamics CRM Connector page.
3. The `MicrosoftDynamicsCRMConnector.ear` enterprise application needs to be copied to the GlassFish domain's auto deploy folder: `<GLASSFISH_HOME>/domains/domain1/autodeploy` or to be deployed via GlassFish's Admin Console.

Note

If there are several domains setup on the GlassFish AS then the correct domain name must be used instead of above-mentioned `domain1`.

3.2 Connector Configuration

To configure *Connector* enterprise application the `MicrosoftDynamicsCRMConnector.properties` file needs to be modified.

The following properties are available:

Name	Default Value	Description
`application.authentication`	`basic`	*Dynamics CRM* authentication type. Acceptable values are: • `basic` – for on-premise CRM authentication using Windows Active Directory. • `passport` – for on-line authentication using Windows Live ID (aka Passport).
`user.login`		Live ID for `passport` and or Active Directory account for `basic` authentication respectively.
`password`		Account's password

passport.url	https://dev.login.live.com/wstlogin.srf	Live ID service URL
passport. end_point_url	crm.dynamics.com	Dynamics CRM URL
discovery.url	https://dev.crm.dynamics.com/MSCrmServices/2007/Passport/CrmDiscoveryService.asmx	Discovery service URL. Possible values are: • CRM Online: https://dev.crm.dynamics.com/MSCrmServices/2007/Passport/CrmDiscoveryService.asmx • CRM on-premise: http://{host[:port]}/MSCrmServices/2007/AD/CrmDiscoveryService.asmx
discovery. organization		Your Organization name
product.unit_group	Default Unit	Default Product's Unit Group
product.unit	Primary Unit	Product's Primary Unit Group
product.price_list	Default	Default Product's Price List
product.currency	USD	Default currency code
account.unknown	{0} {1} ({2})	Format for composing Account name for the customers without company. Available arguments are: • {0} – Contact's First Name • {1} – Contact's Last Name • {2} – Contact's Email
account. type_eval	8	Account type for the evaluation license when creating a new Account. 8 stands for *Prospect*
account. type_commercial	3	Account type for the commercial license when creating a new Account. 3 stands for *Customer*
opportunity.name	{0}_{1}_{2}	Format for composing Opportunity name. Available arguments are: • {0} – Product Name • {1} – Product Version • {2} – Account Name
opportunity. close_days	30	The duration in days of opportunity lifespan
opportunity. probability_eval	20	Opportunity's Probability (%) for the Evaluation License
opportunity. probability_exteval	40	Opportunity's Probability (%) for the Extended Evaluation License
campaign.other.code		Code of default Campaign to associate Opportunities with in case of specified Campaign was not found.
subject.parent	Products	Optional default parent (root)

		Subject for the Products. Used during the Products import
asset.name	{0}_{1}	Format for composing Asset name. Available arguments are: • {0} – Product Name • {1} – Product Version • {2} – Account Name • {3} – License Number
asset.note.title	License [{0}] - {1}	Format for composing Asset Notes' Title. Available arguments are: • {0} – License Number • {1} – License Action
invoice.name	{0}_{1}	Format for composing Invoice name. Available arguments are: • {0} – Product Name • {1} – Product Version • {2} – Account Name • {3} – License Number
invoice.create	true	Specifies whether to create an invoice for the commercial license. Possible values are: • true • false
invoice.paid	true	Specifies whether to apply Invoice Paid status to the new invoice. Possible values are: • true • false
log.level	INFO	Logging level. Possible values are: • ALL - log all messages. • FINE – log debug messages, information messages, warnings and errors. • INFO – log information messages, warnings and errors. • WARNING – log warnings and errors. • SEVERE – log errors only. • OFF – log no messages.
log.path	../logs/ProtectionConnect	Path to log files. When related path is specified, absolute folder location depends on particular Application Server. For example, default path would be <GLASS_FISH_HOME>/domains/domain1/logs/ProtectionConnect for GlassFish

The following are a sample of the `MicrosoftDynamicsCRMConnector.properties` file:

```
application.authentication=passport
```

```
passport.url=https://dev.login.live.com/wstlogin.srf
passport.end_point_url=crm.dynamics.com
user.login=
user.password=

discovery.url=https://dev.crm.dynamics.com/MSCrmServices/2007/Passport/Crm
DiscoveryService.asmx
discovery.organization=

product.unit_group=Default Unit
product.unit=Primary Unit
product.price_list=Default
product.currency=USD

account.unknown=Unknown
#Relationship Type: Prospect
account.type_eval=8
#Relationship Type: Customer
account.type_commercial=3

opportunity.name={0}_{1}
opportunity.close_days=30
opportunity.probability_eval=20
opportunity.probability_exteval=40

campaign.other.code=Default

asset.name={0}_{1}
asset.note.title= License [{0}] - {1}

invoice.name={0}_{1}
invoice.create=true
invoice.paid=true

log.level=INFO
log.path=../logs/ProtectionConnect
```

Tip

Connector tracks the changes of `MicrosoftDynamicsCRMConnector.properties` file and is able to apply them at runtime. So neither GlassFish Application Server nor *Connector* application need to be restarted to apply changes in configuration.

Chapter 4

Known Issues and Limitations

This chapter describes known problems and associated workarounds for the Protection! Microsoft Dynamics CRM Connector v1.0 software.

1. Invalid Content-Type:text/html Exception

Some of CRM Web Services implementations may return textual errors instead of valid SOAP responses. Such results cannot be processed in current implementations and no actual error messages are shown and logged. The following approaches can be used to see actual responses:

a. Use some HTTP monitor application like Fiddler (http://www.fiddlertool.com) to see and analyze all the HTTP traffic. You may need to instruct Connector implementation to connect to the CRM through the Fiddler acting as a Web Proxy. To do so the following system properties must be set up:
```
http.proxyHost=127.0.0.1
http.proxyPort=8888
```

b. Enable HTTP traffic dump for all the JAX-WS based Connector implementations (Oracle CRM On Demand, SalesForce and Microsoft Dynamics CRM). It can be done by setting up the following system property:
```
com.sun.xml.ws.transport.http.client.HttpTransportPipe.dump=true
```

Appendix A

Connector Workflow

This topic outlines *Connector* workflow and provides description of the custom entities and fields were introduced.

a.1 Dynamics CRM Custom Fields

The *Connector's* customizations package installs the following custom fields:

Entity	Field	Description
`Contacts`	`new_locked`	A checkbox filed to lock the Contact to prevent its update by *Connector*
	`new_contact_opportunity`	Linked Opportunities. N:N relationship to Opportunities
`Opportunities`	`new_externalId`	Protection! "License ID". Is used by *Connector* to find an existing Opportunity (License) in the Dynamics CRM for updating. It is a hidden field and it should not be accessible and edited by the user.
	`new_opportunityCode`	Unique Opportunity's Code. Composed as "Product Code" + "Product Version". It is a hidden field and it should not be accessible and edited by the user.
`Invoices`	`new_externalId`	Protection! "License ID". It is used by *Connector* to find an existing Invoice (License) in the Dynamics CRM for updating. It is a hidden field and it should not be accessible and edited by the user.

a.2 Dynamics CRM Custom Entities

The *Connector* customizations package installs the following custom entities:

Entity	Field	Description
`New_asset (Assets)`	`new_assetid`	Asset ID
	`new_description`	Asset description
	`new_externalid`	Protection! "License ID". It is used by

		Connecor to find an existing Asset (License) in *Dynamics CRM* for updating. It is a hidden field and it should not be accessible and edited by the user.
	new_installdate	Install date
	new_locked	A checkbox filed to lock the Asset to prevent its update by Connector
	new_name	Asset's name
	new_price	Product's price
	new_purchasedate	Purchase Date
	new_quantity	Quantity
	new_serialno	License Serial Number
	new_usageenddate	Usage End Date
	new_asset_contact	Asset's Contacts. N:N relationship to Contacts
	new_accountid	Reference to an Account
	new_opportunityid	Reference to a related (if applicable) Opportunity
	new_pricelevelid	Reference to a PriceList
	new_productid	Reference to a Product
	new_unitid	Reference to a Unit

a.3 Dynamics CRM Connector Workflow

Connector handles "Added" and "Updated" events for the Customer, License and License Action entities by executing the following corresponding workflows:

a.3.1 Customer Added/Updated

If corresponding Contact exists and if Contact's *"Locked"* field is unchecked then Contact will be updated with the Customer data that came from Protection!. If such Contact does not exist, then a new Contact will be created. The existence of the Contact is checked by searching for Customer Id in the Contact's *"External User Identifier"* field and then, if not found, by the Contact's Email. The Contact's Account will be created, if not exists, based on Protection! Customer's Company and Customer's address data.

a.3.2 License Updated

This event will be handled for commercial licenses only. Commercial licenses are stored as Asset entities. The product, for which license action is requested, must exist in *Dynamics CRM*.

First, License *"ID"* in Asset's *"External Id"* field will be searched for existence of the license to be updated. If such license is not found, then it will be searched by the combination of the *"License Number"* (Serial#), *"Product"* and *"Account"*. If License (Asset) has been found and the *"Locked"* field is set to false (unchecked), then the Asset's *"Quantity"*, *"Price"*, *"Serial#"*, *"Install Date"*, *"Usage End Date"* and *"Description"* fields will be updated.

a.3.3 License Action Added/Updated

a.3.3.1 Evaluation License

Evaluation licenses are represented within *Dynamics CRM* as Opportunity entities. The product, for which license is requested, must exist in *Dynamics CRM*.

Evaluation License processing by steps:

1. Attempt to find Contact by Protection! Customer's *"ID"*. If not found, then attempt to find Contact by *"Email"*. If not found by either, then create a new Contact.
2. Attempt to find Account by Protection! Customer's Company name. If not found, then create a new Account using Customer's Company and Address data. Set Account's *"Type"* to `account.type_eval` from the `MicrosoftDynamicsCRMConnector.properties` file. If Company is not specified then find/create default (unknown) Account (see `account.unknown` value in the `MicrosoftDynamicsCRMConnector.properties` file).
3. Find License's Product by *"Product ID"* or if applicable by concatenation of *"Product ID"* and *"Product Edition ID"*. Continue if found. Stop, if not.
4. Find default currency specified by the product.currency property in the `MicrosoftDynamicsCRMConnector.properties` file. Stop if not found.
5. Search for "Open" Opportunity (searching for the appropriate Opportunity by Protection! License's *"ID"*). If not found, then search for the Opportunity by combination of the Contact's *"Account"* and the Opportunity's *"Name"*.
6. If "Open" Opportunity has not been found then it will be created with the following attributes:
   - *"Name"* – combination of Product Name, Product Version and Account Name composed according to `opportunity.name` format specified in the `MicrosoftDynamicsCRMConnector.properties` file.
   - *"Potential Customer"* – Contact's Account.
   - *"Currency"* – default currency specified by the `product.currency` value in the `MicrosoftDynamicsCRMConnector.properties` file.
   - *"Price List"* – default Price List specified by the `product.price_list` value in the `MicrosoftDynamicsCRMConnector.properties` file.
   - *"Est. Close Date"* – calculated based on the *"License Action Date"* + `opportunity.close_days` value from the `MicrosoftDynamicsCRMConnector.properties` file.
   - *"Probability"* - for Evaluation license – `opportunity.probability_eval`; for Extended Evaluation license – `opportunity.probability_exteval` value from the `MicrosoftDynamicsCRMConnector.properties` file.
   - *"Est. Revenue"* – calculated by Dynamics CRM itself if product price is specified.
   - *"Description"* – formatted license information.
   - *"Opportunity_Code"* – hidden field containing combination of the *"Product Code"* + *"Product Edition"* + *"Product Version"*. This code is used to find the appropriate Opportunity so it could be closed when related Asset is created.
7. If the Opportunity exists and License type is Extended Evaluation the following fields would be updated:
   - *"Probability"* - `opportunity.probability_exteval` value from the `MicrosoftDynamicsCRMConnector.properties` file.
   - *"Close Date"* – calculated based on the *"License Action Date"* + `opportunity.close_days` value from the `MicrosoftDynamicsCRMConnector.properties` file.
8. Add or update Opportunity *"Note"* with License details. Check whether the Note has been previously created (searching for appropriate Note its title). Create a new Note if it has not been found; update found Note otherwise.

9. Associate Contact with Opportunity, if have not been associated yet.
10. Associate Opportunity with Product, if have not been associated yet and default Price List found.
11. Associate Opportunity with Campaign (through the *"Source Campaign"* reference), if either Campaign's code or Campaign's name is provided in the License Action and corresponding Campaign has been found in the Campaigns List by either Campaign's *"Code"* or Campaign's *"Name"*. If corresponding Campaign has not been found, then try to find and associate Opportunity with a Campaign specified by the `campaign.other.code` value in the `MicrosoftDynamicsCRMConnector.properties` file.
12. Add or Update Contact *"Note"* with License Action details. Check whether the Note has been previously created (searching for appropriate Note by its title). Create a new Note if it has not been found; update found Note otherwise.

a.3.3.2 Commercial License

Commercial licenses are stored as the Asset entities. The product, for which license action is requested, must exist in *Dynamics CRM*.

Commercial License processing steps:

1. Attempt to find Contact by Protection! Customer's *"ID"*. If not found, then attempt to find Contact by Email. If not found by either, then create a new Contact.
2. Attempt to find Account by Protection! Customer's *"Company Name"*. If not found, then create a new Account using Customer's Company and Address data. If Account is Prospect- set Account's *"Type"* to the `account.type_commercial` value from the `MicrosoftDynamicsCRMConnector.properties` file. If Company is not specified then find/create default (unknown) Account (see `account.unknown` value in the `MicrosoftDynamicsCRMConnector.properties` file).
3. Find License's Product by *"Product ID"* or if applicable by concatenation of *"Product ID"* and *"Product Edition ID"*. Continue if found; stop, if not.
4. Find default currency specified by the product.currency property in the `MicrosoftDynamicsCRMConnector.properties` file. Stop if not found.
5. Close the Opportunity with status *"Won"* for the License's Product if one's exist.
6. Check whether the Asset has been previously created (searching for the appropriate Asset by Protection! *"License ID"*). If not found, then search for the Asset by the combination of the *"Serial#"*, *"Account"* and *"Product"* attributes.
7. If the Asset has not been found, then it will be created with the following attributes:
   - *"Name"* – combination of *"Product Name", "Product Version", "Account Name" and "License Number"* attributes based on the `asset.name` format from the `MicrosoftDynamicsCRMConnector.properties` file.
   - *"Product"* – License's Product.
   - *"Opportunity"* – related Opportunity if any.
   - *"Price List"* – default Price List specified by the `product.price_list` property value from the `MicrosoftDynamicsCRMConnector.properties` file.
   - *"Unit"* – default unit specified by the `product.unit` property value from the `MicrosoftDynamicsCRMConnector.properties` file.
   - *"Currency"* – default currency specified by the `product.currency` property value from the `MicrosoftDynamicsCRMConnector.properties` file.
   - *"Price"* – the multiplication of the Product's *"Price"* and License's *"Number of Copies".*
   - *"Quantity"* – License's number of copies.
   - *"Install Date"* – for License Action type *"Activation"* - License Action's date.
   - *"Purchase Date"* - License Issue Date.

- *"Serial Number"* - License's Number.
- *"Usage End Date"* - License's Expiration Date.
- *"Description"* – formatted License's description.

8. Associate new Asset with Account.
9. Add or update Contact Note with License Action details. Check whether the Note has been previously created (searching for appropriate Note by its title). Create a new Note if it has not been found; update found Note otherwise.
10. Create or update corresponding Invoice if `invoice.create` property from the `MicrosoftDynamicsCRMConnector.properties` file is `true`:

a) Find Invoice by Protection! License *"ID"*.

b) If not found then create a new Invoice with the following attributes:

i. *"Name"* – combination of *"Product Name"*, "Product Version", "Account Name" and "License Number" attributes composed according to `invoice.name` format from the `MicrosoftDynamicsCRMConnector. properties` file.

ii. *"Customer"* - Contact's Account.

iii. *"Price List"* – default Price List specified by the `product.price_list` property from the `MicrosoftDynamicsCRMConnector.properties` file.

iv. *"Currency"* - default currency specified by the `product.currency` property from the `MicrosoftDynamicsCRMConnector.properties` file.

v. *"Description"* - formatted License information.

vi. *"Opportunity"* – related Opportunity if any.

c) Associate Product with Invoice, if it's not associated yet and Invoice is Active.

d) If property `invoice.paid` form the `MicrosoftDynamicsCRMConnector. properties` file is `true` apply "Invoice Paid" action to the new invoice.

e) Add or Update Contact *"Note"* with License details. Check whether the Note has been previously created (searching for appropriate Note by its title). Create a new Note if it has not been found; update found Note otherwise.

Feedback

As part of the continuing effort to improve our product, we welcome your comments, suggestions and general feedback regarding the product.

If you have questions about Protection! Connect™, Protection! Microsoft Dynamics CRM Connector or Protection! Enterprise please feel free to contact us for further information at protection@jproductivity.com, or visit our web site at: http://www.jproductivity.com.

If you discover any issues or defects in Protection! please send a detailed description to protection@jproductivity.com.