Created by MyCRM Ltd

eMap

Installation and Configuration

About This Guide

This guide is intended for CRM system administrators who wish to understand the installation, configuration and customization of eMap.

Installation

The trial of eMap can be installed by following these steps:

Register for an account at http://downloads.mycrmgroup.com

- Once logged in, get a Product Key for eMap
- Download the MyCRM Licence Manager installer
- The installer will guide you through the process of installing the MyCRM Licence Manager in your CRM instance
- Once you have the Licence Manager installed, open up your CRM instance and go to Settings -> Extensions -> MyCRM Licence Manager
- Click the Install New Product button and enter your eMap licence key
- The Licence Manager will guide you through the process of installing the eMap solution

Network Requirements

eMap uses Bing webservices and Javascript controls to perform geocoding and provide the end-user map interface. The product also requires an occasional licence check to MyCRM-hosted servers. To that end, the following endpoints will need to be made available for connection when the CRM server or end-users are behind a firewall or proxy:

Server-side

The following endpoints will need to be made available to the servers which run the **CRM front-end** and **Plugin Sandbox** service:

dev.virtualearth.net – the Bing geocoding webservice. This should be made available on port 443 (https).

licencedev.mycrmservice.net – the MyCRM licencing webservice. Also port 443 (https).

Where possible, it is best to use wildcards for the above domains when defining rules (e.g. *.virtualearth.net).

Client-side

The following endpoints will need to be made available to end-users of CRM when using the eMap controls:

https://www.bing.com/api/maps/mapcontrol

https://*.virtualearth.net/ (*all* subdomains on this address should be enabled)

https://licencedev.mycrmservice.net/

Default Data

Once eMap is installed in your CRM you may install the default maps and geocode configurations to get up and running quickly. This is recommended for demonstration and trial purposes.

Experienced eMap administrators can skip this step and build out their own configurations if preferred.

- Go to Settings -> Customizations -> Solutions
- Double-click the eMap solution to open the Solution
- Click the "Install Default Data" button (found under Configuration if the Solution does not open it by default):
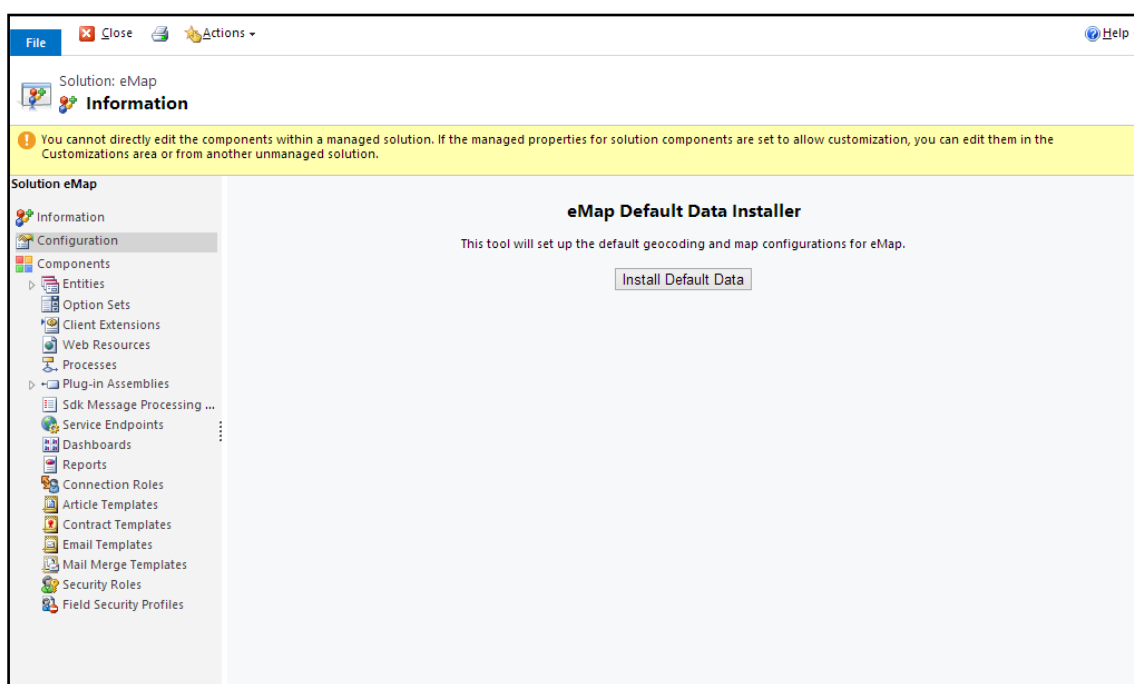
The default data installation should only take a few seconds to a minute. Once complete, you're ready to go!

User Permissions and Licencing

All users (including System Administrators) of the front-end maps (either the Master Map or Form Maps) require the eMap User security role, which is installed as part of the eMap solution. If the eMap User role is not applied to a user, that user will see an error message when they attempt to navigate to one of the map areas.

When a user with the eMap User role navigates to either the Master Map or a Form Map, they will be assigned a licence if there is a licence slot available.

You can manage which users are assigned licences via the MyCRM Download Centre app in CRM. Note that if you remove a user from a licence slot via the Download Centre app, you must also remove the eMap User role from them otherwise they will be re-assigned a licence the next time they navigate to a map display.

Geocoding

Geocoding is the process of converting a street address to latitude and longitude co-ordinates to pinpoint a location on a map.

In order to display a CRM entity's location on a map, an entity must have enough relevant address information for the Bing Maps geocoding service to successfully geocode its location. A postal code alone will be enough to geocode to the postal area, but more accurate geolocation will only be possible where an entity has a house/business address number, street name, city and so on.

The more accurate your address information in your CRM entities is, the more accurate the resulting location on the map will be.

Geocoding in CRM with eMap

In order to geocode entity addresses in CRM, you must first set up an Entity Geocode Configuration for that entity. Once eMap is installed, you will find Entity Geocode Configurations in Settings -> Extensions:
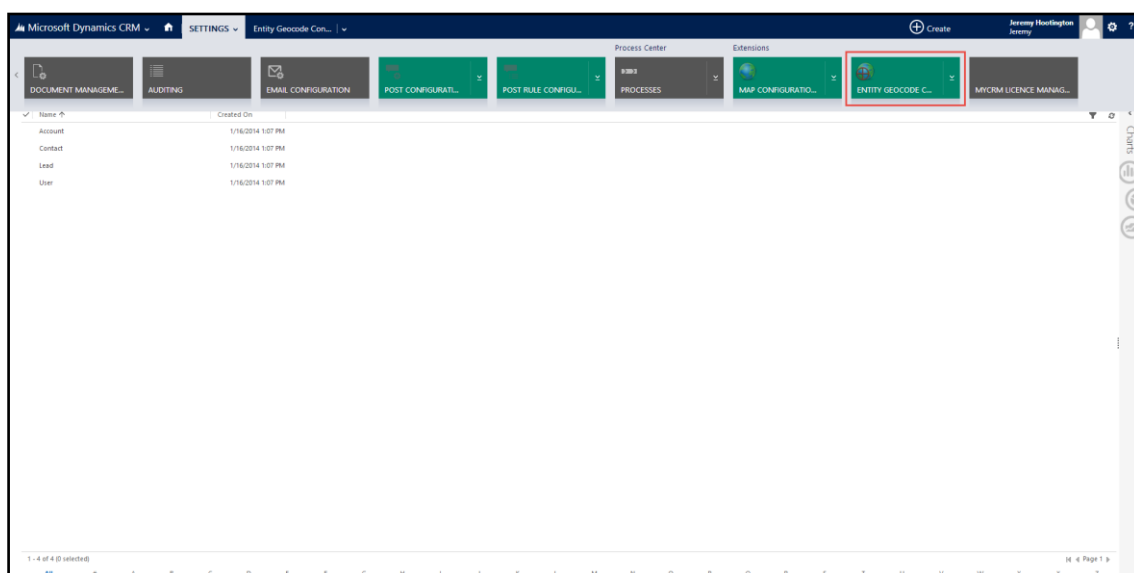
The eMap default data contains geocode configurations for Account, Contact, Lead and User. These are the four main entities that include *latitude* and *longitude* fields out-of-the-box. By default, the configurations use the *Address1_* fields to geocode.

Creating and Editing Entity Geocode Configurations

An Entity Geocode Configuration takes fields from any CRM entity and maps them to fields used by the Bing Maps geocoding service. Here, for example, is the default Account configuration:

ENTITY GEOCODE CONFIGURATION

Account ⌄ ≡

▴ Geocode Field Mapping

Entity	Account		
Address Line 1	Address 1: Street 1	Latitude	Address 1: Latitude
Address Line 2	Address 1: Street 2	Longitude	Address 1: Longitude
Address Line 3	Address 1: Street 3		
City	Address 1: City		
State/Province	Address 1: State/Province		
County	Address 1: County		
Postal Code	Address 1: ZIP/Postal Code		
Country	Address 1: Country/Region		
Default Country			

The fields in the drop-down boxes are your entity fields in CRM. The field labels refer to the address field as used by Bing. For instance, Address Line 1 on the Bing service is mapped to the Address 1: Street 1 field on the Account in CRM.

Note: Only text fields are supported for the address field mappings.

The Latitude and Longitude mappings are the fields that the resulting Lat/Long co-ordinates from Bing are written to in CRM. Most default entities in CRM that have address fields also have corresponding Latitude and Longitude fields. If you are mapping a custom entity's address fields, you will need to create Latitude and Longitude fields to store the geocode information.

Note: Latitude and Longitude fields must be defined as Floating Point Number types.

Default Country

The text content of the Default Country field is used during geocoding when the mapped Country field is blank for the record being geocoded. Using Account as an example, the geocoding process will first look at the Address 1: Country/Region field for data. If there is no data, the default country will be used.

Scenario: If your company is based in the UK, and you mostly work with Accounts in the UK your users may not always fill in the Country field with "UK". The Country field might only be used when an Account is outside of the UK. Supplying "UK" as the Default Country will then restrict geocoding to addresses within the UK (where a Country is not entered on the entity), providing more accurate results for the majority of your Accounts in CRM.

The Geocoding Process

Once some Entity Geocoding Configurations have been defined, there are two ways to begin the Geocoding process.

Manual Geocoding of all entities for a configuration

On the Entity Geocoding Configuration form, there is a tool to run that geocoding configuration against all matching entities in CRM:
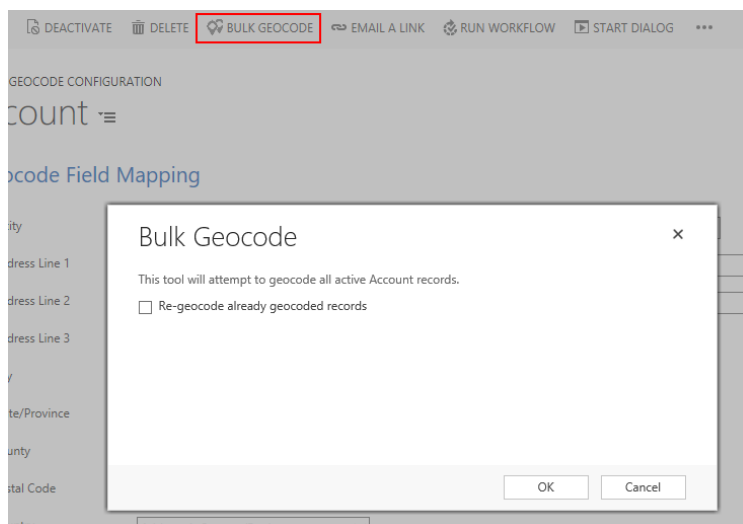
Once all of the required fields have been mapped, simply hit the "Bulk Geocode" command button to begin the geocoding process. This will run against all records of the entity type defined in the "Entity" drop-down. You will see progress counters as the geocoding process runs.
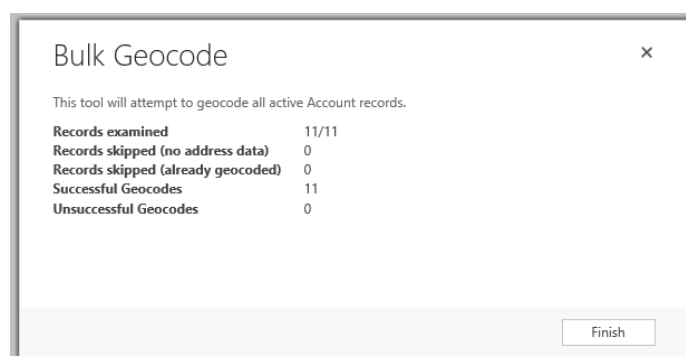
Records Examined: A count of records that the tool has processed.

Records Skipped: A record will be skipped if a) there is not enough address information to perform a geocode; or b) the record already has information in the Latitude or Longitude fields. You can force a re-geocode on records that already have a Latitude or Longitude by checking the "Re-geocode already geocoded records" box before running the geocode.

Successful Geocodes: The number of records that were successfully geocoded by the Bing Maps Geocoding service.

Unsuccessful Geocodes: The number of records that could not be geocoded. This will be due to bad address information in one or more of the address fields.

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The Geocoding plugin

eMap includes a plugin that runs on Create and Update of any entity that has an Entity Geocode Configuration set up for it.

A geocode will only be attempted if one or more of the entity's address fields (as configured) are updated, or included when the entity is created.

By default, the plugin runs synchronously, so the geocoding result will happen as soon as a record is updated. It may take several seconds to perform the geocode.

The Create plugin step will run on a data import so you can be sure that imported records will be geocoded providing that the correct address fields are mapped and imported successfully.

The plugin can be disabled via Settings -> Customizations -> Customize the System if required. The plugin does not need to be enabled for the manual geocoding process, as described above.

Map Configuration

eMap allows you to flexibly create new maps that can be displayed in one or more of three places:

- The Master Map, initially installed in Sales -> Maps:
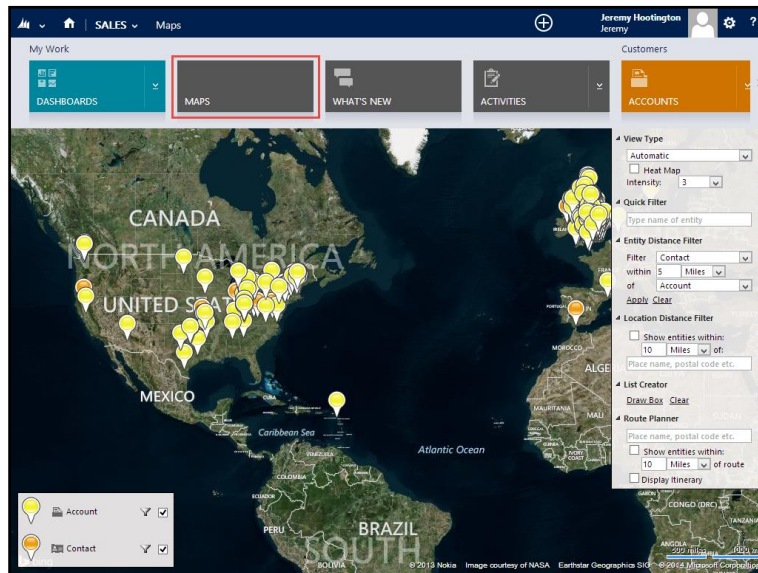
- On a dashboard:
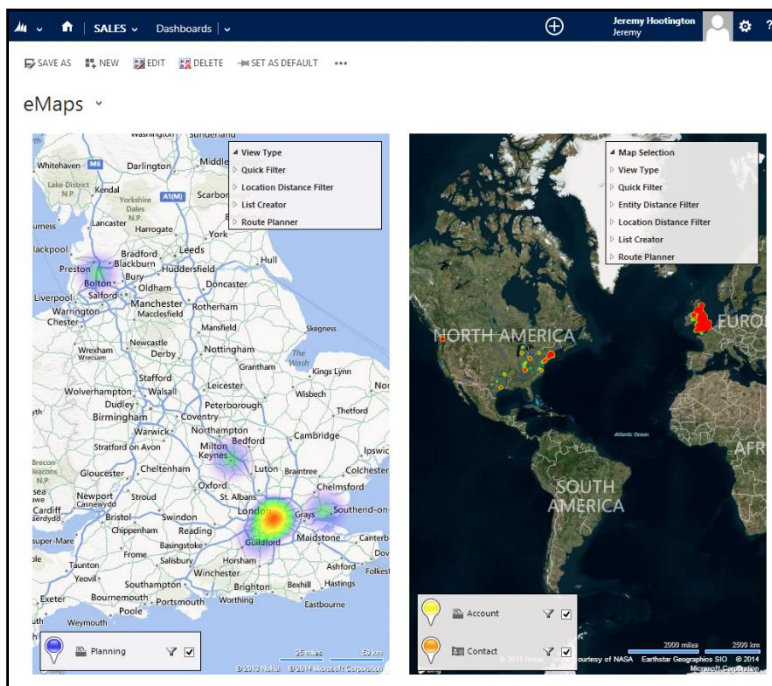
- On an entity form:

Creating a New Map

In Settings -> Extensions -> Map Configurations, click the "New" ribbon button. You will be given a blank Map Configuration to fill out:

New Map Configuration

General

Name *	--	Owner *	👤 First name Last name
Available on Master	☐	Is Data Paged	☐

This map's ID is:

This ID can be used to place the map on an entity form. See the eMap configuration guide for more details.

Appearance

Default Map View	**Automatic**	Enable Map View Sel	☑
Enable Pan and Zoom	☑	Heat Map Enabled	☑
Click to Open Popup	☐	Heat Map on by defa	☐
Shrink Pins Below Zo	**Don't Shrink Pins**	Heat Map default int	3

Default Pan and Zoom

Map Center	**All Pins**	Zoom	🔒 8

Legend

Show Legend	☑		
Enable Layer Show /	☑	Enable Layer Filter Cl	☑

Features

Enable Features	☑		
Quick Filter	☑	Place Entity Pin	☑
List Creator	☑	Route Planner	☑
Entity Distance Filter	☑	Route Filter	☑
Location Distance Fil	☑		

Local Search

Local Search	☐	Local Search on by d	☐

Route Planner Javascript

Route Planner JS URL	--

Layers

Order ↑	Friendly Name	Entity	Pin Colour	

To enable this content, create the record.

Name: A friendly name for your map. For example: "Active Accounts", "Open Cases" etc.

Available on Master Map: When checked, the new map will be available to select on the Master Map in Workplace. It will be available to all eMap users to view. You should not check this option if you are creating a Map that will be displayed on an entity form (see later).

Is Data Paged: (On by default) eMap loads data from your CRM view onto the map either with or without paging. With paging turned on, records are loaded a maximum of 1000 at a time, according to the area you are viewing on the map. Panning and/or zooming will refresh the data accordingly.

With paging tuned off, all data is loaded up-front when the map loads. This can take a long time with views that have more than 10,000 records.

Some map features (Entity Distance Filtering and Route Filtering) require all records to be loaded to work. If Data Paging is off when one of these features is used, all records will be temporarily loaded.

Default Map View: The default Bing Maps imagery that will be used on the map. Either Road, Aerial or Automatic.

Enable Map View Selection: Determines whether the end-user will be able to change the Map imagery as set in the Default Map View option.

Enable Pan and Zoom: If disabled, the end-user will not be able to pan and zoom on the map – the map will be locked and zoomed on the available pins. This option might be useful where a map is used *only* for display purposes such as on a dashboard or entity form.

Heat Map Enabled / On by default / Default Intensity: Allows users to switch the map to display a heat map of records. See the user guide for more info on heat maps. Heat maps requires an HTML5/Canvas compatible browser.

Click to Open Popup: (Off by default) When enabled, the pin popup is opened with a left-click, as opposed to just hovering the mouse. Recommended for touch-screen devices.

Shrink Pins Below Zoom Level: Sets a zoom level below which a small version of the pin icon will be used. The map has a zoom level of 0-20, with 0 being zoomed out the furthest. Recommend setting this to around 8 with maps that have more than a few records.

Default Pan and Zoom: (Form maps only) When displaying a map on an entity form, it is sometimes useful to have the map automatically centre on the entity's pin, at a predefined zoom level. Switch to Form Entity to accommodate this.

Show Legend: Determines whether the legend (showing pin colours and entity names) will be visible on the map.

Enable Layer Show / Hide: When disabled, the end-user will not be able to toggle visibility of individual map layers.

Enable Layer Filter Change: When disabled, the end-user will not be able to alter the data filtering on a layer, other than by using eMaps features.

Enable Features: A master option that will completely enable or disable map Features. If disabled, the Features bar on the right of the map display will not be shown, regardless of whether an individual Feature is enabled or disabled. See the user guide for explanation of the individual features.

Local Search: Enable the Local Search feature, and set it on or off by default. See the user guide for more information on Local Search.

Layers: A regular related entity grid that allows you to add and remove layers from the map (see below).

Map Layers

Map layers are at the heart of eMap's flexible ability to display data on a map. Each Map Configuration must have at least one Layer in order to display data. Each layer is linked to an entity type and determines the set of data that eMap will display for the selected entity.

Layers are so-called because they are drawn on the map in order from top (layer order 0) to bottom (layer order *n*). For instance, if you have a layer with display order 0 containing Account data, and a layer with display order 1 containing Contact data, the Account pins will appear on top of the Contact pins when displayed on the map.

Data Sources

Layers user CRM Views to determine which data is displayed on the layer. For example, selecting the "Active Accounts" view when setting up an Account layer will only show Active Accounts. Selecting "My Accounts" as the view for a layer will display the Accounts that are owned by the end-user that is viewing the map. You could set up custom views in CRM to show different sets of data for the selected entity.

There is one exception to using Views: when setting up a map that will be displayed on an entity form, you may wish to have a layer that will show the location of *only* the entity that has been opened. In this case you would use the *Form Entity* data source.

Geocode Sources

By default, layers will take their location from the latitude and longitude fields as set up in the Entity Geocode Configuration for the layer's selected entity. There are times when you will need to get geocode information from a *related* entity.

Example: Opportunities contain no address information. You may however wish to create a layer that displays Opportunities on a map. In order to get a location for an Opportunity, you would look at the related *Customer* entity. This will allow the layer to place Opportunity pins at the geocoded location of the Contact or Account that is provided as a Customer on the Opportunity.

Form Entity Filtering

Scenario: "I wish to create a map that will be displayed on the Account form. I want this map to display the location of the Account that I open, but I also want to display the location of all the Contacts associated with that Account"

We can use the special Form Entity Filter layer option to provide this functionality. In the given scenario, the Map would have two layers: One Account layer that has a Form Entity data source, and a Contact Layer that uses the Active Contacts view as its data source.
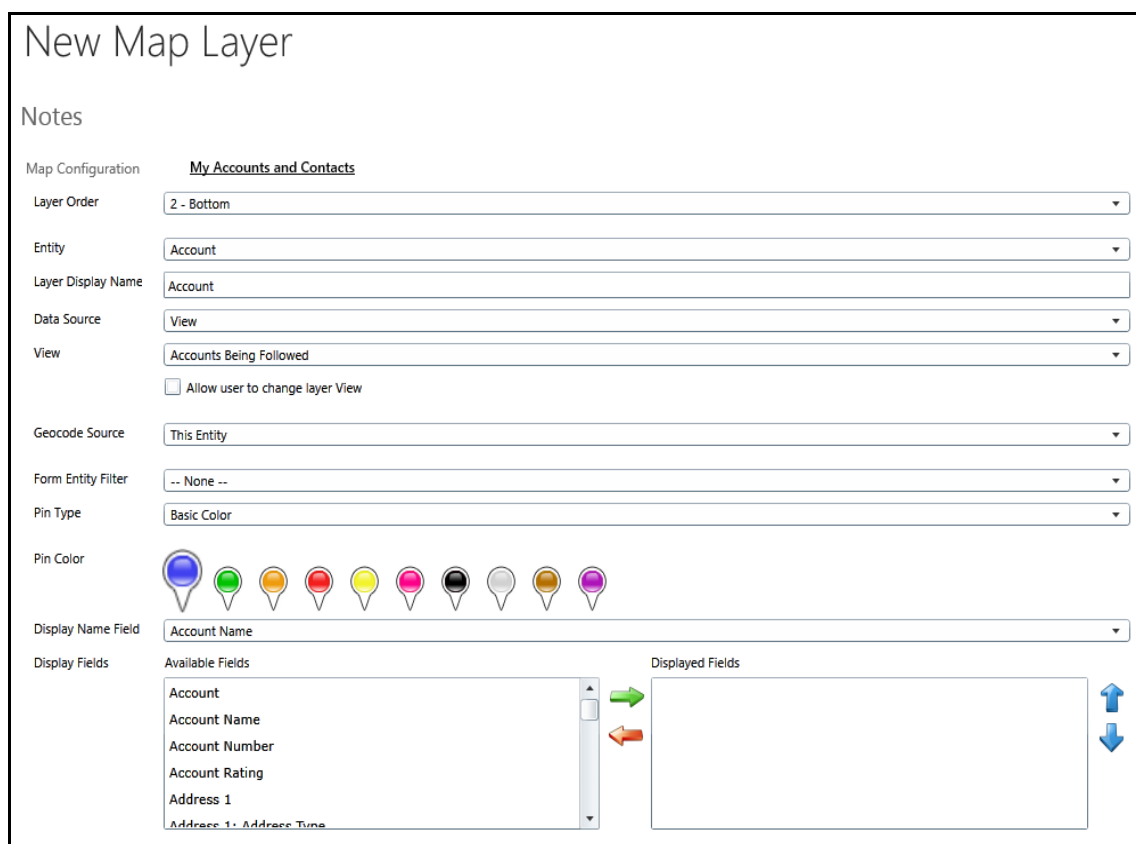
On the Contact Layer, we would select "Parent Account" as the Form Entity Filter. This will then display Active Contacts where the Parent Account is the Account displayed on the open form. Behind the scenes, the filter takes the ID of the entity of the current form and adds it to the selected view's pre-created filter.

Form Entity Filtering is a powerful feature that is useful any time a map is added to a form for an entity that has a one-to-many relationship with another entity.

Creating a New Map Layer

Map Layers can only be created via the related entity grid of a Map Layer Configuration. When you click the New Map Layer button, the following form is displayed:

Map Configuration: The map that this layer will be displayed on. This lookup will be set automatically.

Layer Order: The order that the layer will be displayed in. 0 is the topmost layer. When this value is changed for one layer on a map - or if a layer is deleted - the rest of the layers for that map will have their display orders updated.

Entity: The entity type that will be displayed on this layer.

Layer Display Name: A friendly name for the map layer, as displayed in the Legend. Defaults to the entity name.

Data Source: Either *View* or *Form Entity.* See the previous page for a description of Data Sources.

View: Only available if the Data Source is set to *View*. The view that will be used to gather data to display on the Layer.

Allow user to change view: When enabled, a drop-down box will appear below the layer in the map Legend to allow the user to select a different view to display. This includes the user's Saved Views.

Geocode Source: Either *This Entity* or *Related Entity*. See the previous page for a description of Geocode Sources.

Related Entity: Only available if Geocode Source is set to *Related Entity*. The related entity that the latitude/longitude data is taken from.

Form Entity Filter: The lookup that is filtered by the ID of the form that the map is placed on. Only used if the layer is on a map that is placed on an entity form. See the previous page for a description of Form Entity Filtering.

Pin Type: Either: Basic Color, Webresource Field or Appointment (appointment pin type only available on an Appointments layer)

Pin Color: The pin that will be used for this layer when the Pin Type is "Basic Color".

Webresource Url: Choose a field from the entity that will contain the URL of a custom pin to load. When the map loads, the pin icon for this entity will be taken from the corresponding field.

The URL can be CRM relative "/images/my_pin.png" if loading from a Web Resource, or absolute "http://mycompany.com/pins/my_pin.png" if loading from an external site.

Loading the pin image from a URL is very powerful. For example, you could have small pins with users' faces on them when setting up a User layer, or a custom coloured pin that is set by a workflow when an entity is updated (think: Job Status for a Case).

Appointment: When setting up an Appointments layer, the Appointment pin type is a special pin that will show the number of days until the appointment (or negative if the appointment has passed). Today's appointments will be highlighted in green.

Display Name Field: The field that will be used as a title when displaying the popup box for this layer on the map. Recommended fields to use would be Name for Account/Lead, Full Name for Contact etc.

Display Fields: The extra fields that will be displayed on the popup box on the map. You can include any fields you like here, and change the display order using the up/down arrows. Most common fields to include would be relevant address fields, but you could use any fields that would be useful information for the end-user have at a glance.

The fields selected here are also used as columns when using the List Creator function. See the user guide for more information.

Adding Maps in CRM

So, you've created a new Map and added Layers to it. Now it's time to get it displayed to end-users in CRM. Maps that are enabled for display on the Master Map will automatically be available on the Master Map under Workplace -> My Work. The end-user can choose between any available Master Maps by using the Map Selector dropdown box.

Adding Maps to entity forms and dashboards requires a little customization, and will be detailed below.

Map IDs

In order to place a map on a form or dashboard, we need to know the Map ID. Once a Map Configuration has been created, the Map ID is displayed on the Map Configuration form, as shown:

MAP CONFIGURATION : INFORMATION

Active Accounts

General

Name *	Active Accounts	Owner *	👤 Jeremy Hootington
Available on Master I	☐		

This map's ID is:

8AC1D308-BD7E-E311-A365-D89D67632E74

This ID can be used to place the map on an entity form. See the eMap configuration guide for more details.
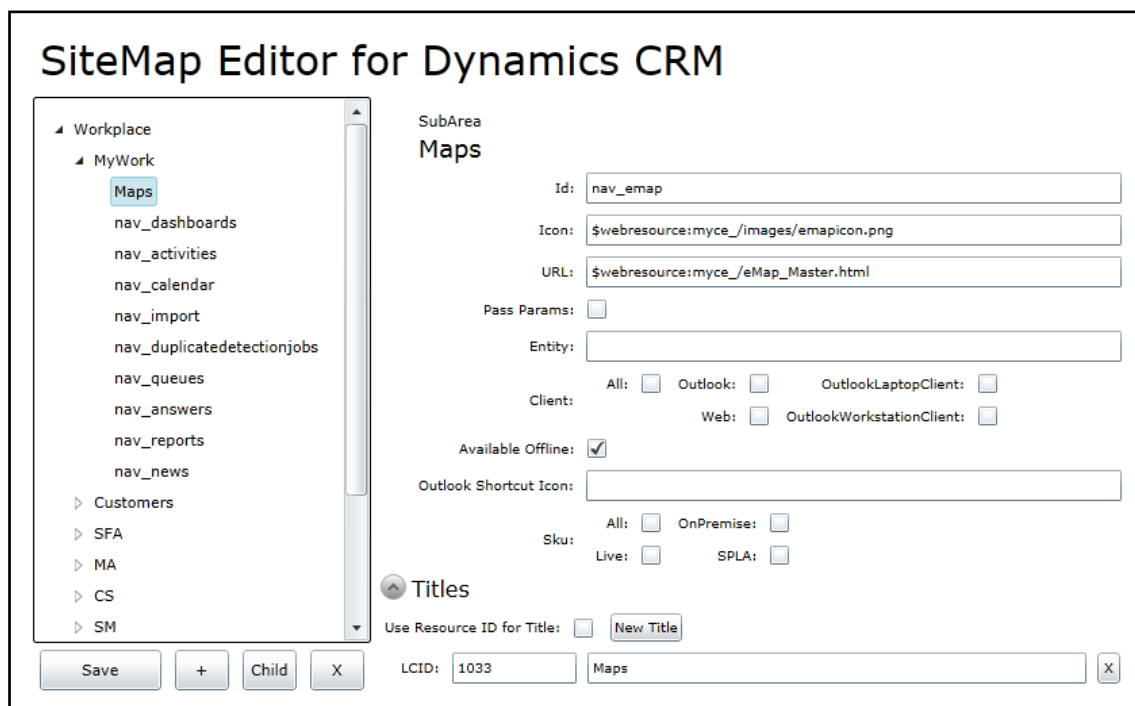
The Map ID can be copied from here and used in the detailed scenarios below.

Removing or Relocating the Master Map

The Master Map is created via a standard CRM Site Map entry and can be removed or relocated using any number of CRM 2011 Sitemap Editors available, or by exporting the sitemap and editing it manually.

The Master Map is added to the site map via the myce_/eMap_Master.html web resource. The following image shows the Master Map sitemap entry in a popular free Site Map editing tool:

Changing the Default Master Map

By default, the Master Map will display the first map in the list of Maps that are available for display on the Master Map, sorted alphabetically by Name. You can specify a default map by adding to the Web Resource URL in the site map.

In the screenshot below, we use the Sitemap Editor tool to add **?data=<map ID>** to the myce_/eMap_Master.html url:
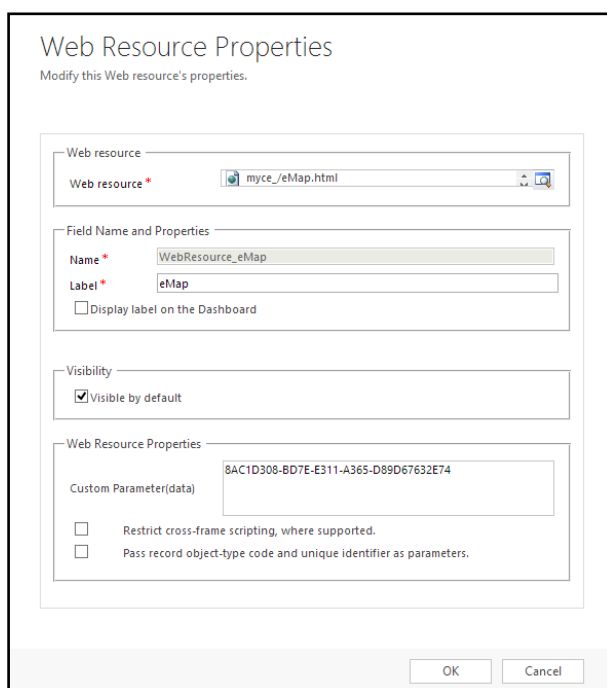
Here, we used the ID copied from the "Active Accounts" map in the **Map IDs** section screenshot on the previous page and appended it to the myce_/eMap_Master.html web resource URL. As a result, the "Active Accounts" map is now shown by default on the Master Map page.

Displaying a Map on a Dashboard

You can use the CRM Dashboard Editor to place Maps on a dashboard section. Select Web Resource when editing a dashboard section, and then set the Web Resource's properties as follows:
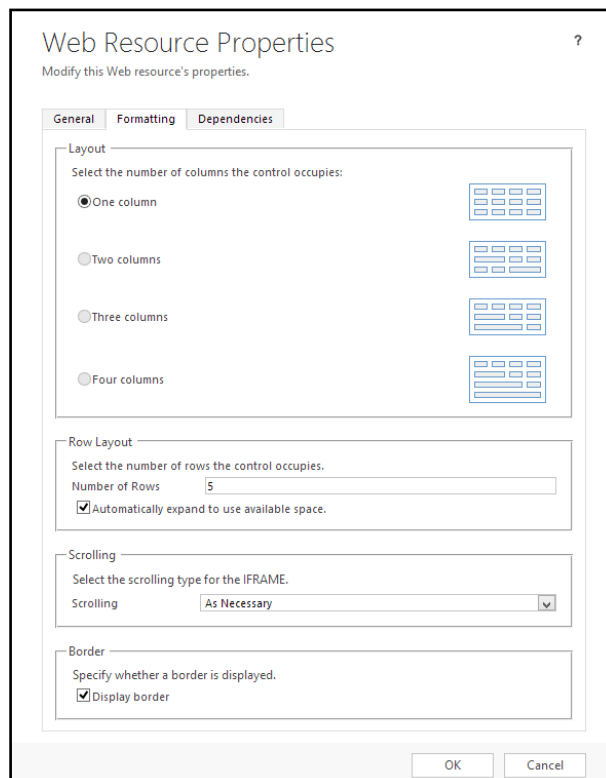

Web Resource: Select the **myce_/eMap.html** resource (note: do not use the myce_/eMap_Master.html resource on a dashboard section)

Name / Label: Can be set as required. It is not recommended to set the "Display label on the Dashboard" option, as this causes cut-off issues when used with an HTML web resource.

Custom Parameter(data): Paste your copied Map ID into this box. The corresponding map will be used in this dashboard section.

You may display as many maps as you like on one dashboard.

It is recommended that Features are turned off when displaying a map on a dashboard, especially if the map is constrained to a small portion of the screen. If the map needs to be fully-functional, consider a single map dashboard with a large display area for the dashboard section.

Displaying a Map on an Entity Form
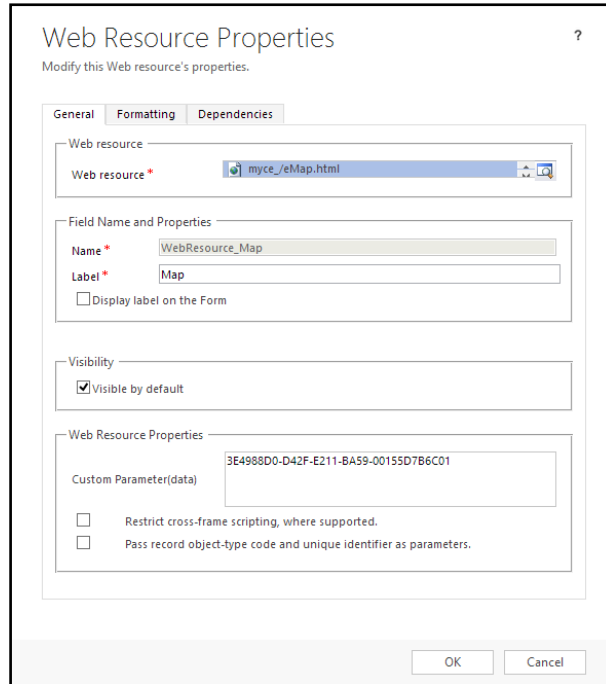
Open up the form editor for the CRM entity as normal. It is recommended (but not required) that a new Tab is set up for the Map to be displayed in.

Create a new form section and insert a web resource via the Insert tab:
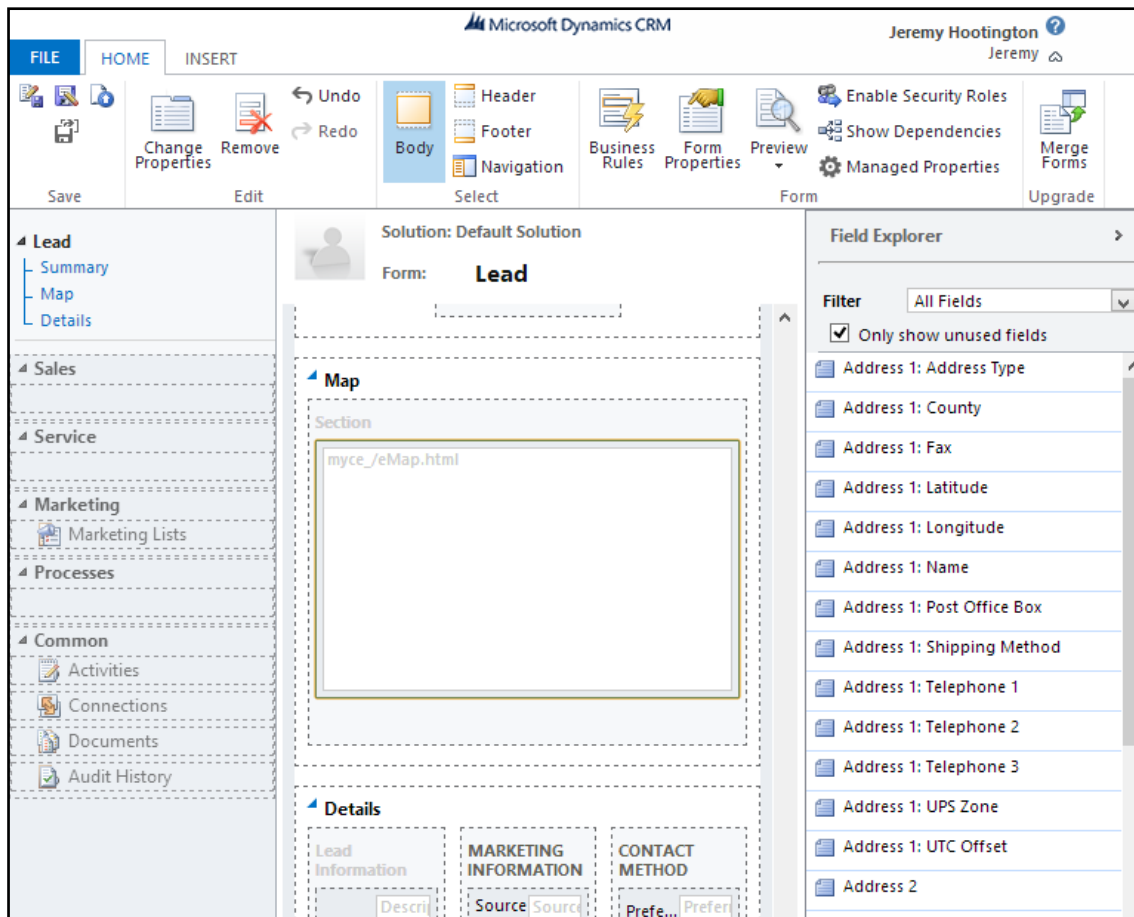
Set the Web Resource properties as follows:

Web Resource: Select the **myce_/eMap.html** resource (note: do not use the myce_/eMap_Master.html resource on a form)

Name / Label: Can be set as required.

Custom Parameter(data): Paste your copied Map ID into this box. The corresponding map will be used on this form.

On the Formatting tab:

Layout: Two columns.

Row Layout: 6 rows is the absolute minimum space required for a map, and it is recommended to use "Automatically expand to use available space".

Scrolling: As necessary.

Border: Off.