

# Building XrmToolBox Tools

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# XrmToolBox

WHAT IS THIS MAGICAL TOOLBOX I HEAR SO MUCH ABOUT?



# What is XrmToolBox?

- *"XrmToolBox is a Windows application that connects to Microsoft Dynamics CRM, providing tools to ease customization, configuration and operation tasks. It is shipped with more than 30 plugins to make administration, customization or configuration tasks easier and less time consuming."* – <https://www.xrmtoolbox.com/>
- "If you are not working with XrmToolBox, you are just working too hard." - Jonas Rapp, 2018
- Variety of Tool uses: Security, User Administration, or assisting in Developer tasks
- Open Source – Anyone can download and contribute their own Tool

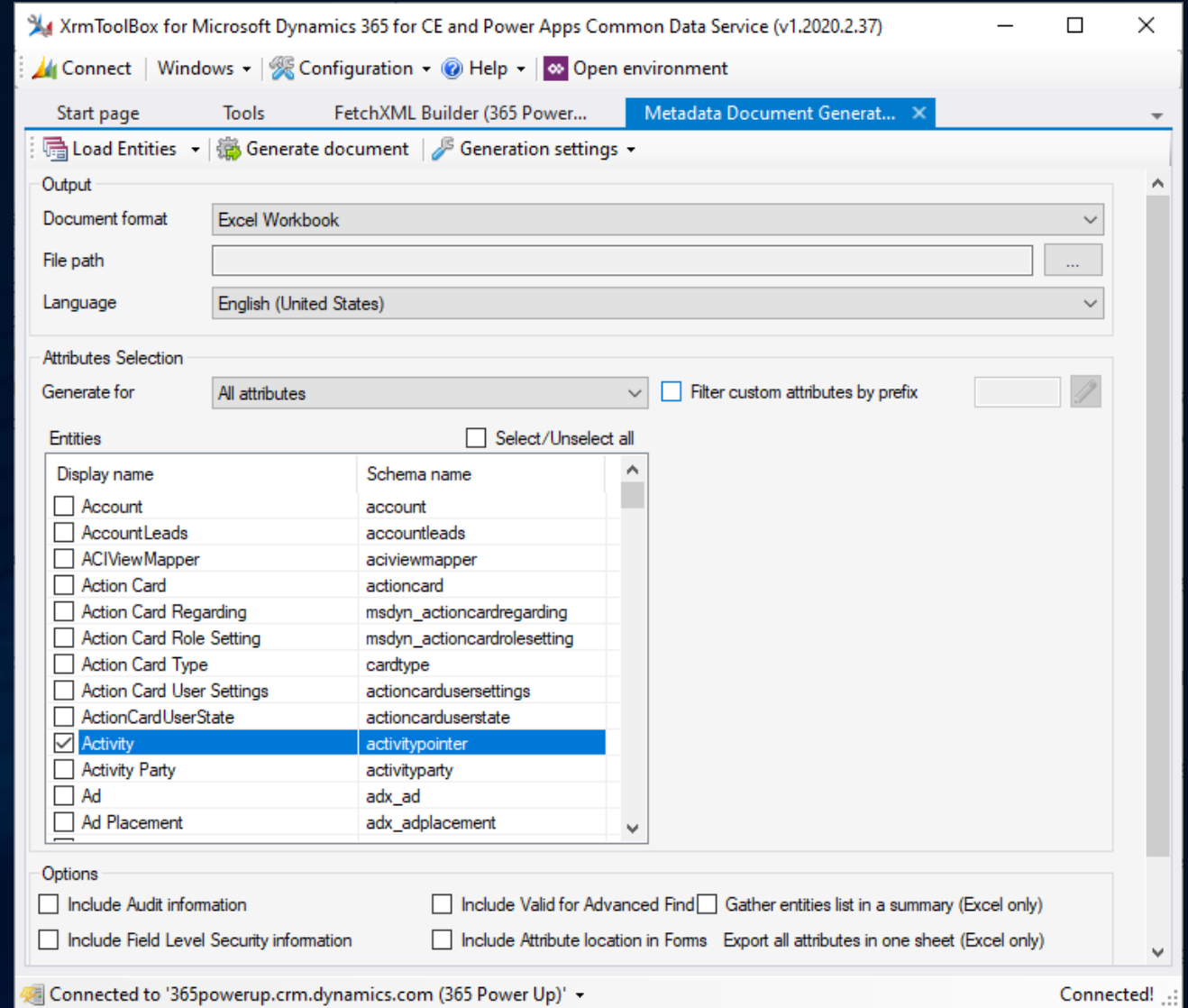
# Who uses XrmToolBox?

- Wide variety of tools == wide user audience
- Business Analyst – Tools for reviewing and documenting CRM schema information
- Developers – Tools for creating and configuring system components or generating code to extend the platform
- System Administrators – Tools for Dynamics data management and performing system diagnostics

# Business Analyst Tool

## Metadata Document Generator

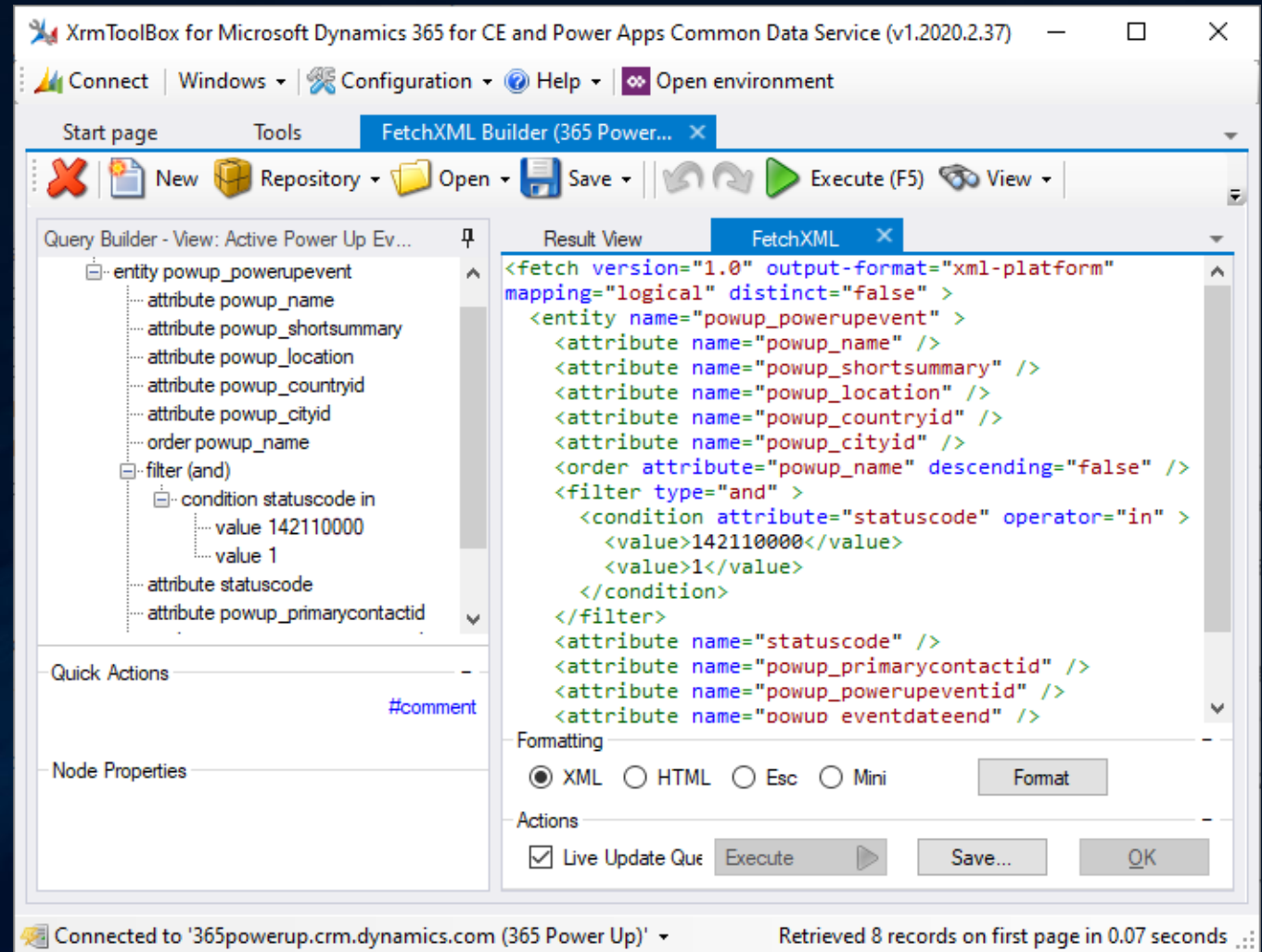
- Export system schema information to Excel or Word
- Filter on only selected Publishers, Entities, and/or Attributes
- Additional options for extended Entity metadata



# Developer Tool

## FetchXml Builder

- Visual tool to build and test FetchXml
- View Fetch results as a grid, JSON, or raw Xml
- Generate C# or JavaScript code from FetchXml
- Generate snippets for Power Automate Flows



# System Admin Tool

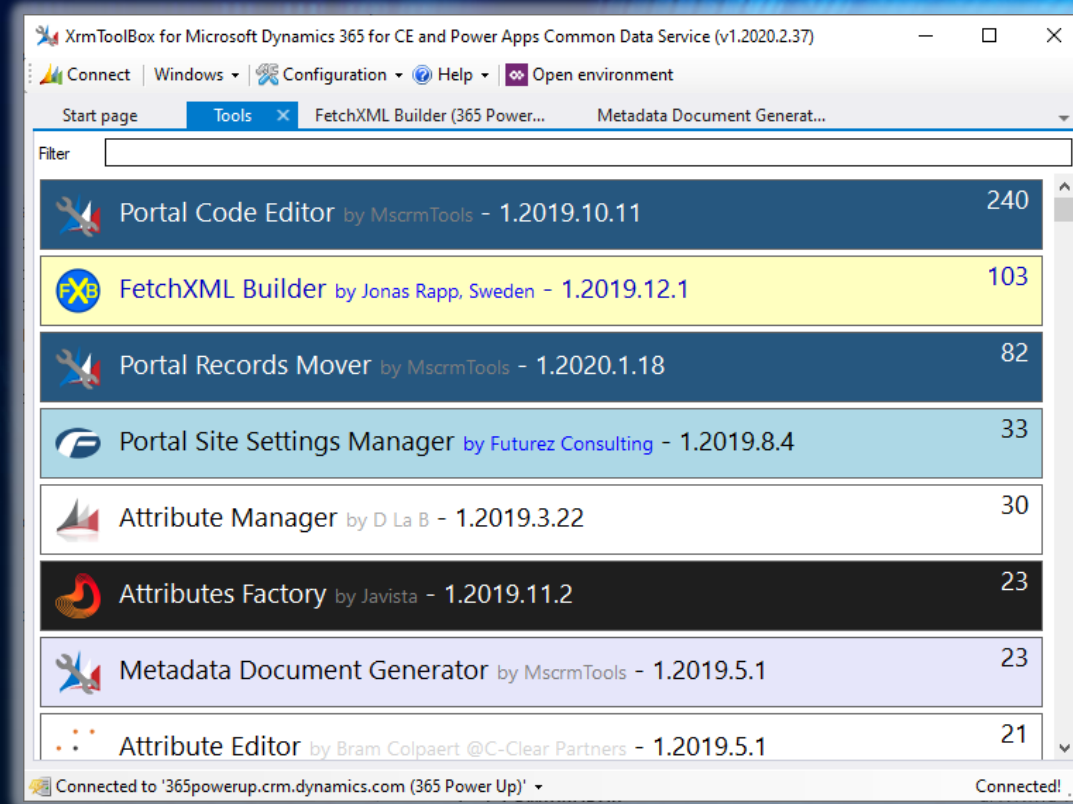
## Attribute Audit Explorer

- Review Entities with Audit Enabled
- View logged Audit data for one or more Entity Attributes for a given
- Export results to Excel for logging

The screenshot shows the 'Attribute Audit Explorer (OJP)' application window. The interface includes a top menu bar with 'Start page', 'Plugins', and the application title. Below the menu bar are buttons for 'Close', 'Load Entities', 'Preview Data', 'Export to Excel', and 'Show Options'. The main area is divided into two panes. The left pane, titled 'Auditable Entities', shows a tree view with 'Task (task)' selected. Under 'Task (task)', several attributes are listed with checkboxes: 'Activity Status (statecode)', 'Activity Type (activitytypecode)', 'Actual End (gnext\_actualend)' (checked), 'Actual End (actualend)', 'Actual Start (actualstart)', 'Assigned Task Unique Id (cmt)', 'Assigned To (ownerid)', 'Category (category)', and 'Classification (next\_classification)'. Below the tree are links for 'Check All' and 'Uncheck All', a 'Filter' section with a dropdown for 'Author' set to 'All', date pickers for 'Before' (2018-11-05 00:00) and 'After' (2018-10-28 00:00), and a 'Preview records count' dropdown set to '100'. The right pane, titled 'Audit Records', displays a table of audit data. The table has four columns: 'Created On', 'Author', 'Operation', and 'Action'. The data shows multiple 'Delete' operations performed by 'Todd Uhl' on 11/1/2018. The first row is highlighted in blue.

Created On	Author	Operation	Action
11/1/2018 5:31 ...	Todd Uhl	Delete	Delete
11/1/2018 5:30 ...	Todd Uhl	Delete	Delete
11/1/2018 5:14 ...	Todd Uhl	Delete	Delete
11/1/2018 5:14 ...	Todd Uhl	Delete	Delete
11/1/2018 5:14 ...	Todd Uhl	Delete	Delete
11/1/2018 5:14 ...	Todd Uhl	Delete	Delete
11/1/2018 5:14 ...	Todd Uhl	Delete	Delete
11/1/2018 5:14 ...	Todd Uhl	Delete	Delete
11/1/2018 5:13 ...	Todd Uhl	Delete	Delete
11/1/2018 5:12 ...	Todd Uhl	Delete	Delete
11/1/2018 5:11 ...	Todd Uhl	Delete	Delete
11/1/2018 5:11 ...	Todd Uhl	Delete	Delete
11/1/2018 5:11 ...	Todd Uhl	Delete	Delete
11/1/2018 5:11 ...	Todd Uhl	Delete	Delete
11/1/2018 5:06 ...	Todd Uhl	Delete	Delete
11/1/2018 5:01 ...	Todd Uhl	Delete	Delete





# Building Your Own Tool

JUST HOW DO I GET STARTED ROLLING OUT MY OWN COOL TOOLS?!

# What makes up an XrmToolBox Tool?

- .NET component hosted by the XrmToolBox application that implements a programmatic contract
- Plugin Class
  - .NET class extending the PluginBase class
  - Contains the public details behind an XrmToolBox Tool
  - XrmToolBox uses this to load the Tool into the application
- PluginControl Class
  - .NET class extending PluginControlBase class
  - Visual / UI elements and core logic for an XrmToolBox Tool
  - This is the developer's area for providing a visual interface for their Tool

# Plugin Class

- Provide the public details for your XrmToolBox tool
  - Tool Name
  - Description
  - Large and Small Icons
  - Copyright information
- Allows the XrmToolBox application to instantiate and present your Tool as a registered plugin
- Controls creation of your Tool user interface
- You will typically derive from a base class, PluginBase

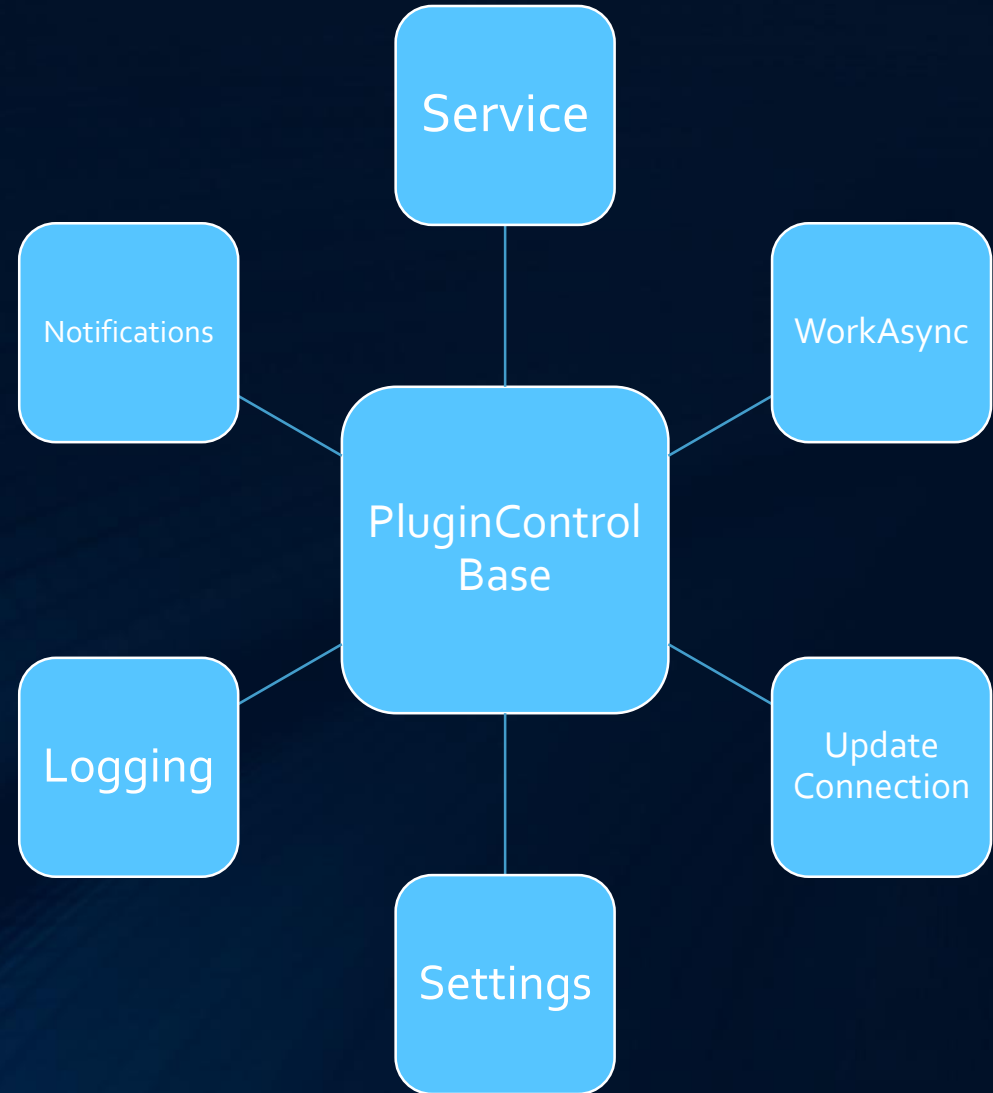
# PluginControl Class

This is the user interface for your Tool, where most of your work will be done

Derives from PluginControlBase Class

Existing Properties and Methods provide both utility and a standard model for building Tools

Tools that require multiple connections – derive from *MultipleConnectionsPluginControlBase*





# Getting Started – Dev Tools and Templates

- Visual Studio – Express or higher
- XrmToolBox Plugin Project Template for Visual Studio
  - <https://marketplace.visualstudio.com/items?itemName=TanguyTMVPCRM.XrmToolBoxPluginProjectTemplate-19499>
- Depending on your Tool
  - Third party components such as UI controls
  - Additional NuGet packages for tool operation or packaging and deployment



# Demo

ENOUGH WITH THE SLIDES, LET'S SEE SOME CODE

# More reading!

- XrmToolBox developer documentation:
  - <https://www.xrmtoolbox.com/documentation/for-developers/>
- Jonas Rapp - <https://jonasrapp.net/>
- Daryl LaBar - <http://dotnetdust.blogspot.com/>
- FutureZ Blog - <https://futurezconsulting.com/blog/>
- Our Demo Project - <https://futz.news/xrmtbdemo>
- Github – Common Controls:
  - <https://github.com/jamesnovak/xrmtb.XrmToolBox.Controls>