

A scenic view of the Austin skyline featuring the JW Marriott hotel and the Congress Avenue Bridge over the Colorado River. The image is overlaid with a blue geometric pattern and a dark blue banner containing the text 'extreme365'.

extreme365

WELCOME TO
AUSTIN

Five ways to improve Your **Development**

extreme365

WELCOME TO
AUSTIN

Jonas Rapp

Jonas Rapp

```
var jonas = (WhoAmIResponse)service.Execute(new WhoAmIRequest());
```

Enterprise Architect, Avanade

Software Developer (1994-)

100% MS Dynamics "CRM" (2009-)

Dynamics Tooling (2010-)

Microsoft MVP (2017-)

Twitter: @rappen

Email: jonas@jonasrapp.net

Blog:

jonasrapp.net

Podcast:

XrmToolCast



Audience

```
var you = (WhoAreYouResponse)service.Execute(new WhoAreYouRequest());
```

Customizers?

Plugin Wizards?

Developers?

Solution Architects?

C# Developers?

DevOps / CI / CD?



Five ways to improve quality and productivity of your development

Visual Studio Extensions

C# Extensions

Base Classes

Azure DevOps Pipeline Extensions

XrmToolBox tools

VISUAL STUDIO EXTENSIONS

Customizing Visual Studio for Dynamics 365 development

VISUAL STUDIO EXTENSIONS

Microsoft D365 Developer

VS 2015 ☹️

XrmToolkit

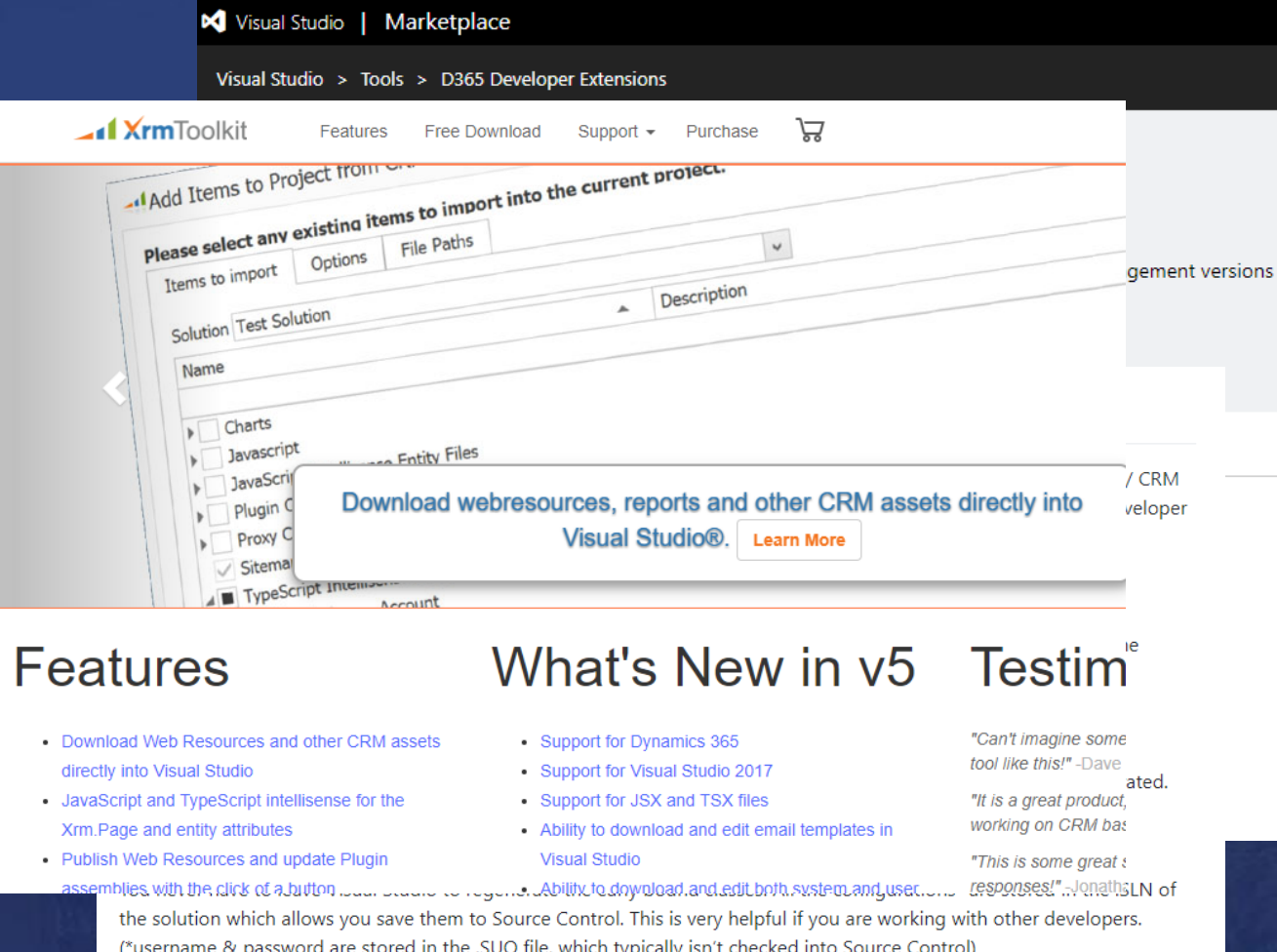
Expensive 💰

D365 Developer Extensions

OSS Dev Toolkit

CRM Code Generator

Early bound ⌚



The screenshot displays the XrmToolkit website. At the top, there's a navigation bar with 'Visual Studio | Marketplace' and a breadcrumb trail 'Visual Studio > Tools > D365 Developer Extensions'. Below this, the website header includes the XrmToolkit logo and links for 'Features', 'Free Download', 'Support', and 'Purchase'. The main content area features a large image of the 'Add Items to Project from CRM' dialog box, which prompts users to select items to import into the current project. A prominent call-to-action banner reads: 'Download webresources, reports and other CRM assets directly into Visual Studio®. Learn More'. Below the banner, the 'Features' section lists: 'Download Web Resources and other CRM assets directly into Visual Studio', 'JavaScript and TypeScript Intellisense for the Xrm.Page and entity attributes', and 'Publish Web Resources and update Plugin assemblies with the click of a button'. The 'What's New in v5' section highlights: 'Support for Dynamics 365', 'Support for Visual Studio 2017', 'Support for JSX and TSX files', and 'Ability to download and edit email templates in Visual Studio'. A 'Testimonials' section includes quotes from users like Dave and Jonathan. At the bottom, a note explains that the solution allows saving to Source Control, with usernames and passwords stored in the .SUO file.

Visual Studio | Marketplace

Visual Studio > Tools > D365 Developer Extensions

XrmToolkit

Features Free Download Support Purchase

Add Items to Project from CRM

Please select any existing items to import into the current project.

Items to import Options File Paths

Solution Test Solution Description

Name

Charts

JavaScript

JavaScript

Plugin C

Proxy C

Sitema

TypeScript Interm

Account

Download webresources, reports and other CRM assets directly into Visual Studio®. Learn More

Features

- Download Web Resources and other CRM assets directly into Visual Studio
- JavaScript and TypeScript Intellisense for the Xrm.Page and entity attributes
- Publish Web Resources and update Plugin assemblies with the click of a button

What's New in v5

- Support for Dynamics 365
- Support for Visual Studio 2017
- Support for JSX and TSX files
- Ability to download and edit email templates in Visual Studio

Testimonials

"Can't imagine some tool like this!" -Dave

"It is a great product, working on CRM bas"

"This is some great responses!" -Jonathan

the solution which allows you save them to Source Control. This is very helpful if you are working with other developers. (*username & password are stored in the .SUO file, which typically isn't checked into Source Control)



Let's go Live!

AUSTIN December 3-6

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C# EXTENSIONS

Get more functionality from standard SDK types

C# EXTENSIONS

DLaB.Xrm.Source

Visual Studio extension

Use what is available

Create what you need

```
/// <summary>
/// Get the parent record of an entity by retrieving the entity in specified lookup attribute
/// </summary>
/// <param name="entity">The child entity from which to lookup the parent record</param>
/// <param name="service">Service used to retrieve the parent record</param>
/// <param name="lookupattribute">Lookup attribute on the child entity that identifies the parent</param>
/// <param name="attributes">List of attributes to retrieve for the parent record</param>
/// <returns>The Parent entity, or null if lookup attribute did not contain a reference</returns>
References | 0 changes | 0 authors, 0 changes
public static Entity GetParent(this Entity entity, IOrganizationService service, string lookupattribute, params string[] attributes)
{
    if (entity.Contains(lookupattribute) && entity[lookupattribute] is EntityReference parentRef)
    {
        return service.Retrieve(parentRef.LogicalName, parentRef.Id, new ColumnSet(attributes));
    }
    return null;
}
```

> Dependencies

```
var myaccount = mycontact.GetParent(svc, "parentcustomerid", "name", "websiteurl", "revenue");
```

1.3.0.2 (current version)

341

7 months ago

1.3.0.1

317

9 months ago



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BASE CLASSES

Generalize behavior and structure of plugin classes

BASE CLASSES

Doing the housekeeping

- Initiating orgsvc, tracer, context

- Logging common actions

Visual Studio extensions

- Use what is available

Easy to create

- Identify repeated code



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AZURE DEVOPS PIPELINE EXTENSIONS

Automate CI / CD for the Dynamics 365 platform

AZURE DEVOPS PIPELINE EXTENSIONS

xRM CI Framework
The #1 D365 CI/CD package

DevOps for MS Dynamics 365
The runner up - Shuffle

buildThing
Extra build/deploy gadgets

Visual Studio

Visual Studio

IN FA

Overview

Inno

Articl

A blog s

Part I -

Part II -

buildThing: Dynamics 365

buildThing: Dynamics 365 is a set of tasks which aim to allow a full 'hands-off' deployment of Dynamics CRM/365 for Customer Engagement release by cloning a known good master instance to a target instance.

Show me the Things!

Thing Is	Thing Does
Drift the Data	Copies config data from a specified entity, filtered by a view
User Switcheroo	Looks for every plugin step/workflow in the source instance set to run as a specified user and switches the user to be one in the target instance.
Fix a Field	Updates the value of a single specific field in a specific single record
Prevent Plagiarism	Grabs all published duplicate detection rules and the associated conditions and creates them in the target with the same GUIDs.
Let Me In	Looks for all entities with an Access Team enabled, copies over the templates and creates them with the original GUID
Wake Up Your Logic	Activates all Business Rules in the target
Part I - Facsimile Your Stencils	Copies all Word Document Templates, updating the Entity Type Code inside the template if necessary. With thanks to Gayan Perera @NZxRMGuy and magnetismsolutions.com for permission to use his code for this

Part III - Demo of complete build and release definitions taking you from A to Z

Public Preview - [Announcing availability and some sample code / tutorial](#)



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XRM TOOLBOX TO THE RESCUE

A few tools to take your development the last kilometer

XRMTOOLBOX TO THE RESCUE

Early Bound Generator

When working early bound

Latebound Constants Generator

When working late bound

Code Now

Quickly try your code

Metadata Browser

Investigate XRM anatomy



XRMTOOLBOX TO THE RESCUE

Plugin Auto Deployer

Save the clicks!

Plugin Trace Viewer

Analyzing plugin behavior

FetchXML Builder

Generate queries

...anything else...?

What are you using?





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Links

jonas@jonasrapp.net

Microsoft Dynamics 365 Developer Toolkit

D365 Developer Extensions

XrmToolkit

CRM Code Generator

DLab.Xrm

XrmToolBox

xRM CI Framework

Innofactor DevOps tools

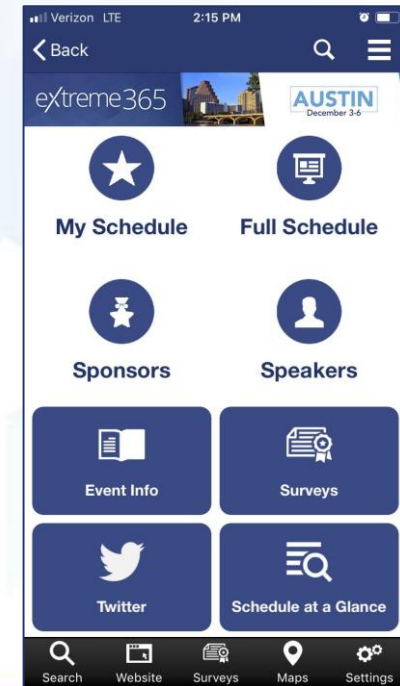
Demos and samples
published on my blog:
jonasrapp.net

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