



Source Code and Automation for Acumatica Developers

Cloud xRP Summit

Virtual Developer Conference

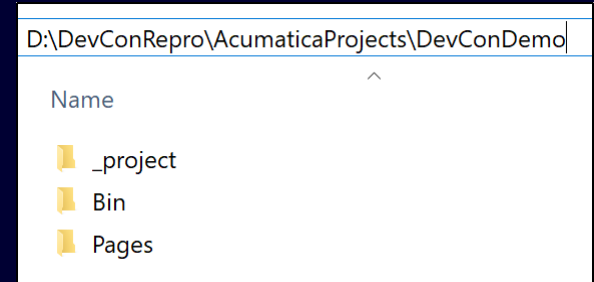
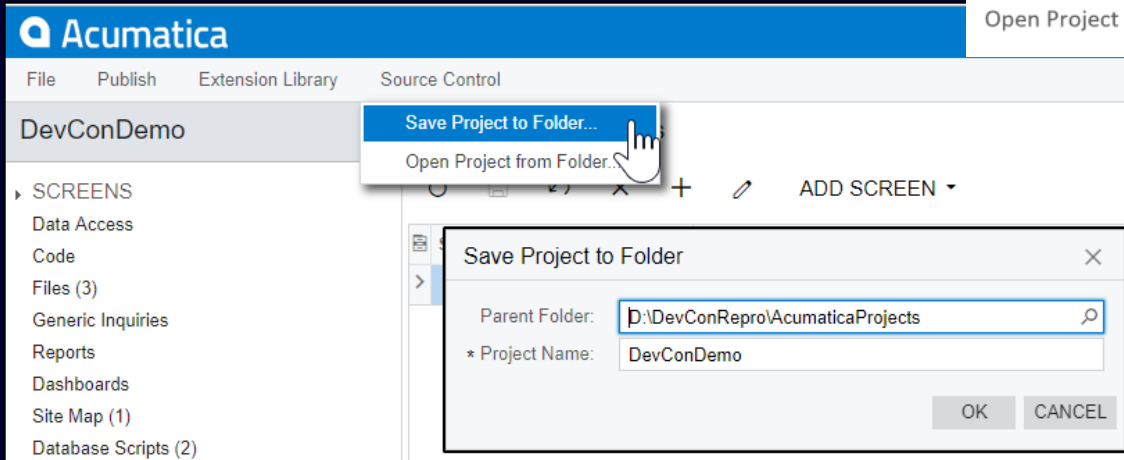
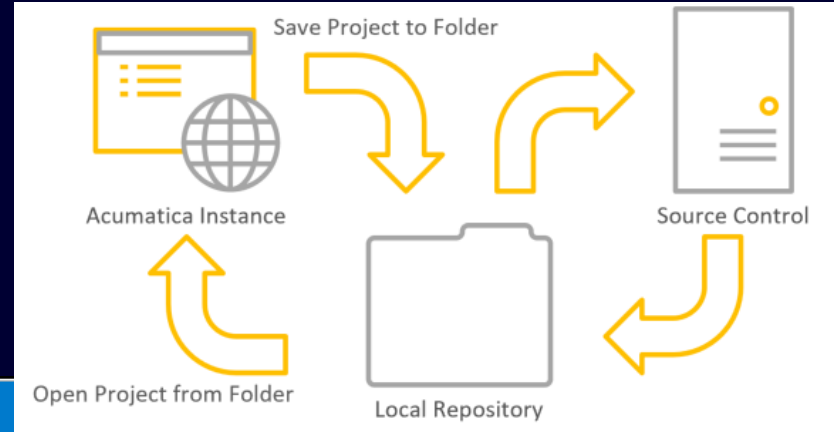
Brendan Hennelly

Topics

- Setup source control with an Acumatica instance
- What to include in source control
- Applying changes between source control and Acumatica
- Creating a customization package with command tool
- Automating the import/publish of a customization project
- Automating an upgrade of an Acumatica instance
- Working with multiple versions of Acumatica at the same time

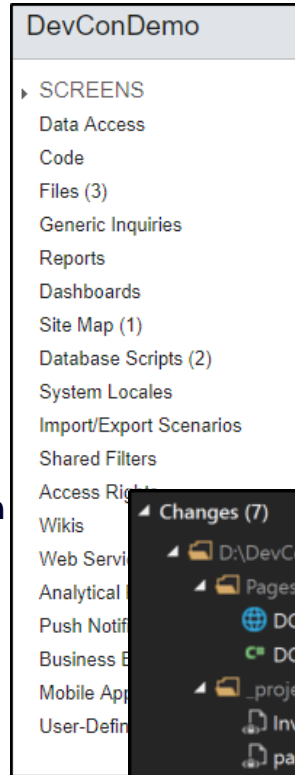
Setup source control with an Acumatica instance

- Not a direct link to any specific source control tool
- Read and write to a local folder.
- Use a local folder subscribed to source control



What to include in source control

- **Acumatica customization project**
 - Screens, DACs, Files, Generic Inquiries, Reports, Pages, etc.
 - Ignore project/solution DLLs
- **Visual studio solution/projects**
 - Include Acumatica references: PX.Common.dll, PX.Data.dll, PX.Objects.dll, etc.
- **Tracking Acumatica source code changes in your source code?**
 - \App_Data\CodeRepository
 - See what is changing and see when changes were made that might impact your solution.

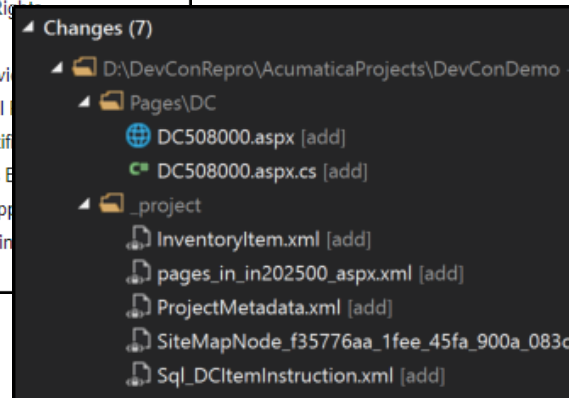


Example Source Control Folder:

- **AcumaticaProjects**
- **Config**
- **PX.Objects.DevConDemo**
- **Site**

Extras

- **SQL**
- **Portal**
- **LastSupportedVersion**



Applying changes between source control and Acumatica

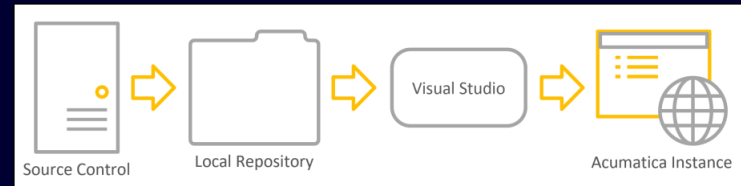
Changes from Acumatica:

1. Build visual studio solution
2. Detect modified files
3. Reload from database (sitemap, tables, GI, etc.)
4. Confirm project will publish/pass validation
5. Save project to folder
6. Check in changes to source control



Changes to Acumatica:

1. Get latest changes from source control
2. Build visual studio solution
3. Open project from folder
4. Publish



Creating a customization package with command tool

- **MSBuild.exe – Building a visual studio project/solution**

```
1 $msbuild = "C:\Windows\Microsoft.NET\Framework\v4.0.30319\msbuild.exe"
2
3 $buildArgs = @"D:\DevConRepro\DevConDemo.sln",
4 "/property:Configuration=Release",
5 "/target:Rebuild")
6
7 & $msbuild $buildArgs
```

- **PX.CommandLine.exe – Package/zip Acumatica customization project**

```
1 $pxCommand = "D:\DevConRepro\Site\Bin\PX.CommandLine.exe"
2 $pxWebsite = "D:\DevConRepro\Site"
3 $pxIn = "D:\DevConRepro\AcumaticaProjects\DevConDemo"
4 $pxOut = "D:\DevConRepro\AcumaticaProjects\Install\DevConDemo.zip"
5 $pxDesc = "DevConRepro - 2019.06.19"
6
7 Invoke-Expression "$pxCommand /method `BuildProject`" /website `$pxWebsite` /in `$pxIn` /out `$pxOut` /level `0` /description `$pxDesc`"
```

- **Post Build Event**

- Copy Pages, dll
- Call PX.CommandLine.exe

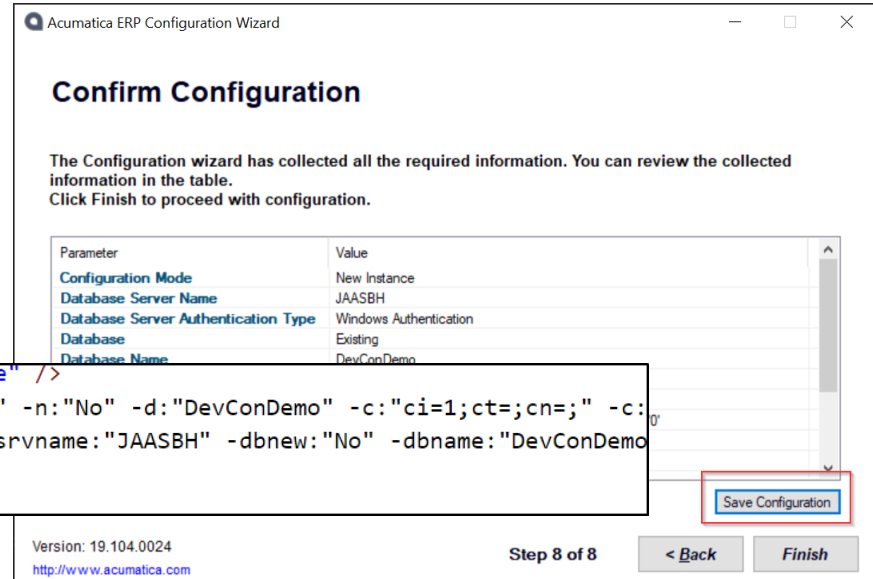
Automating the import/publish of a customization project

- Import and publish via web services
- Create a command line tool
- <http://localhost/DevConDemo/api/servicegate.asmx>
- Limitations:
 - Multi Company, Customization Plugin, Error reporting

```
1  class Program
2  {
3      const int ArgsAcuPkgZip = 0;    // D:\DevConRepro\AcumaticaProjects\Install\DevConDemo.zip
4      const int ArgsAcuProject = 1;  // DevConDemo
5      const int ArgsUrl = 2;         // http://localhost/DevConDemo
6      const int ArgsLogin = 3;      // admin
7      const int ArgsPassword = 4;   // admin
8
9      static void Main(string[] args)
10     {
11         var svc = new ServiceGate.ServiceGate();
12         svc.Url = $"{args[ArgsUrl]}/api/servicegate.asmx";
13         svc.CookieContainer = new System.Net.CookieContainer();
14         svc.Login(args[ArgsLogin], args[ArgsPassword]);
15         svc.UploadPackage(args[ArgsAcuProject], File.ReadAllBytes(args[ArgsAcuPkgZip]), true);
16         svc.PublishPackages(new[] { args[ArgsAcuProject] }, false);
17     }
18 }
```

Automating an upgrade of an Acumatica instance

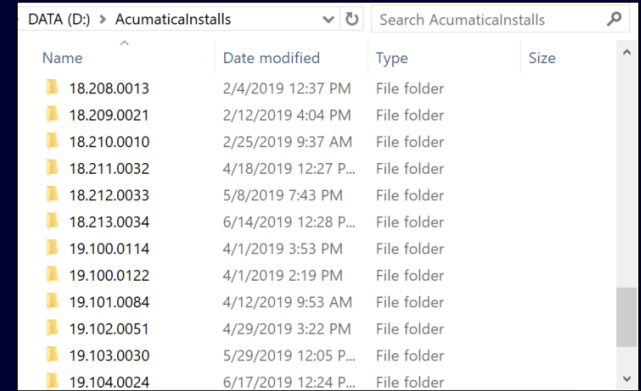
- AC.exe is the command line tool for the Acumatica ERP Configuration Wizard
- Found in the installation Data folder (not in an Acumatica ERP instance)
- Use to install or upgrade a site or database
- Can use a configuration file or inline parameters
- Parameters available at the end of the AcumaticaERP InstallationGuide.pdf
- Use the Configuration Wizard to create a configuration file and command line example



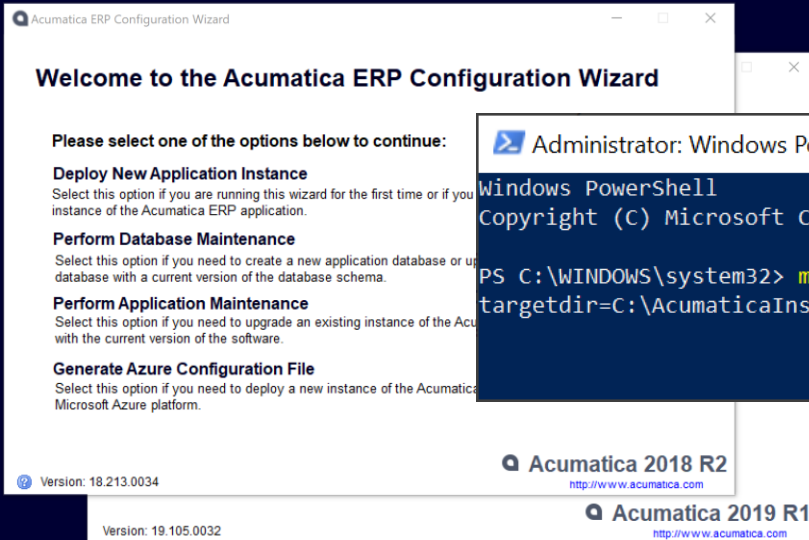
```
42 <fulllog Value="No" Description="Full Logging Mode" />
43 <ShortConsoleCommand>-cm: "NewInstance" -s: "JAASBH" -n: "No" -d: "DevConDemo" -c: "ci=1;ct=;cn=;" -c:
44 <LongConsoleCommand>-configmode: "NewInstance" -dbsrvname: "JAASBH" -dbnew: "No" -dbname: "DevConDemo
45 </Root>
```


Working with multiple versions of Acumatica at the same time

- `/a` Installs a product on the network.
- `/qb` Sets user interface level to Basic UI
- `targetdir` Location to copy the installation package



Name	Date modified	Type	Size
18.208.0013	2/4/2019 12:37 PM	File folder	
18.209.0021	2/12/2019 4:04 PM	File folder	
18.210.0010	2/25/2019 9:37 AM	File folder	
18.211.0032	4/18/2019 12:27 P...	File folder	
18.212.0033	5/8/2019 7:43 PM	File folder	
18.213.0034	6/14/2019 12:28 P...	File folder	
19.100.0114	4/1/2019 3:53 PM	File folder	
19.100.0122	4/1/2019 2:19 PM	File folder	
19.101.0084	4/12/2019 9:53 AM	File folder	
19.102.0051	4/29/2019 3:22 PM	File folder	
19.103.0030	5/29/2019 12:05 P...	File folder	
19.104.0024	6/17/2019 12:24 P...	File folder	



Welcome to the Acumatica ERP Configuration Wizard

Please select one of the options below to continue:

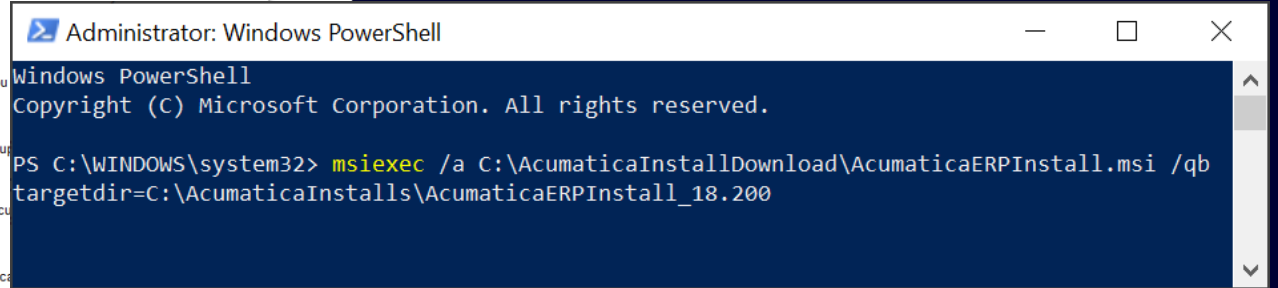
- Deploy New Application Instance**
Select this option if you are running this wizard for the first time or if you are running an instance of the Acumatica ERP application.
- Perform Database Maintenance**
Select this option if you need to create a new application database or update an existing database with a current version of the database schema.
- Perform Application Maintenance**
Select this option if you need to upgrade an existing instance of the Acumatica ERP application with the current version of the software.
- Generate Azure Configuration File**
Select this option if you need to deploy a new instance of the Acumatica ERP application on the Microsoft Azure platform.

Version: 18.213.0034

Acumatica 2018 R2
<http://www.acumatica.com>

Acumatica 2019 R1
<http://www.acumatica.com>

Version: 19.105.0032



```
Administrator: Windows PowerShell
Windows PowerShell
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PS C:\WINDOWS\system32> msisexec /a C:\AcumaticaInstallDownload\AcumaticaERPInstall.msi /qb
targetdir=C:\AcumaticaInstalls\AcumaticaERPInstall_18.200
```

Recap

- Save to and Open from project folder
 - Include customization project, visual studio solution
 - MSBuild.exe → Build Visual Studio Solution
 - PX.CommandLine.exe → Create Package/Zip
 - Post Build Events → Automate Commands During VS Build
 - <http://localhost/<instance>/api/servicegate.asmx> → Import and/or Publish
 - AC.exe → Install/Upgrade Acumatica Instance/Database
 - msiexec.exe → Extracase Acumatica Install for Multiple Versions at Once
-
- Examples:
 - <https://github.com/bhennelly/AcumaticaSourceControlDemo>
 - PublishCustomizations.exe source available soon on github
 - Writing a guest blog post covering this session
 - Include more detail/examples? Other related topics?





Thank You

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