

DAXIF# - Delegate Automated Xrm Installation Framework

Delegate A/S

d e l e g a t e

Shared Success

- Delegate A/S
- DAXIF#
 - Kun et programmeringssprog
 - Type stærke script (og selvdokumenterende) filer
 - Unit tests afvikles før assembly (.dll) bliver bygget
 - Live demo:
 - One-click-installation
 - One-click-deployment
 - TFS commit → DEV → DEV-BUILD → TEST → PROD
 - Web ressourcer synkronisering
 - Data management (Import/Eksport med Parallelisme)
 - Data migrering: 1:1 mellem source og target Oprettet af/på Modificeret af/på (kun for On-premise)
- Opsummering

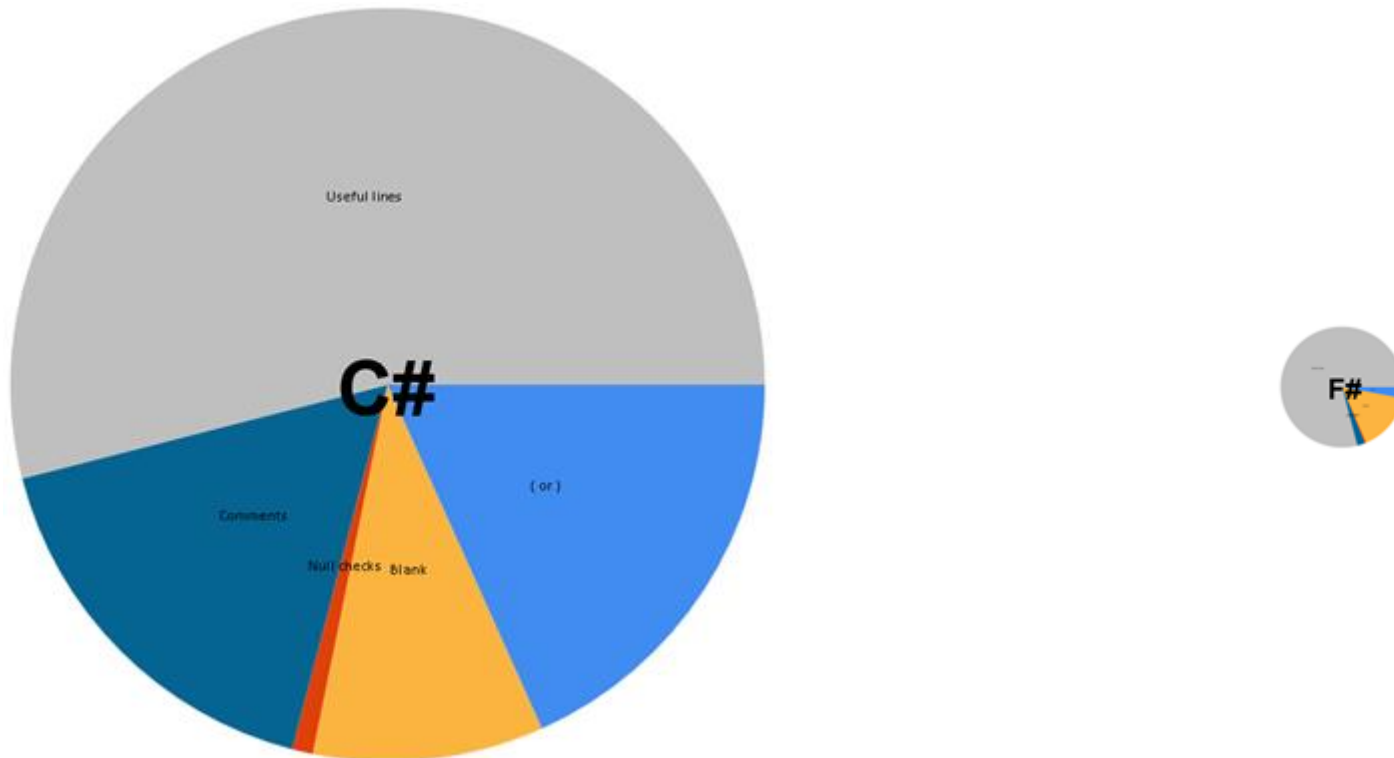


Shared Success

- Konsulenthus kendt for deres forretningskritiske SharePoint løsninger siden 2006
- Adm. direktør Peter Østergaard, tidligere **Associate Partner hos Netcompany** og **Microsoft CRM Sales Lead**
- CRM afdelingen blev stiftet den 1. Februar 2013 da jeg kom til
- I spidsen er Kaspar Bøgh Christensen, tidligere **Dynamics CRM direktør** hos Avanade
- Og til sommers kom Michael Weis, tidligere **Microsoft Solution Sales Lead, Dynamics CRM**
- Firmaets motto: **"Vi skal være de bedste, ikke de største"**.



- *Et sæt af værktøjer, der i kombination med andre MS værktøjer, gør det nemmere at arbejde med CRM/xRM i dagligdagen (også for udviklere som ikke kender til platformen)*



- DAXIF# startede ud som DAXIF (C#, .BAT-filer, næsten ingen tid til unit teste, ..., i kender det vel selv). Nu er alle moduler mindre end 100 linjers kode hvilket gør det er nemt at læse det igen, og igen, og igen ...
- Hvorfor F#? Mindre kodebase, fejlfrie projekter, kun et sprog, store data (big data), parallelitet, samtidighed (concurrency), asynkron processor, ...

DAXIF# - Type stærke script (og selvdokumenterende) filer



Delegate.DAXIFsharp.v1.0.0.2 - Delegate Automated Xrm Installation Framework (2013-12-01T10:04:17.5752282+01:00)

Delegate.DAXIFsharp.Sample1.fsx

In order to execute this F# script F# 3.0 tools (VWD_FSharp.exe) must be installed. The tools can be downloaded from:

- [F# Tools for Visual Studio Express 2012 for Web](#)

After installation run the following from a `cmd.exe` (run as Administrator):

```
reg add "HKLM\SYSTEM\CurrentControlSet\Control\Session Manager\Environment" ^
/v Path /t REG_SZ /d "%PATH%;C:\Program Files (x86)\Microsoft SDKs\F#\3.0\Framework\v4.0"
```

and then log off/login and the Register Database will be updated (no need for restart)

Libraries

Load DAXIF#

```
1: #r @"..\Delegate.DAXIFsharp.dll"
```

Load Microsoft xRM SDK for the AuthenticationProviderType

```
1: #r @"..\microsoft.xrm.sdk.dll"
```

Open libraries for use

```
1: open System
2: open System.IO
3: open Microsoft.Xrm.Sdk.Client
4: open DG.DAXIFsharp
5: open DG.DAXIFsharp.Modules
```

Helper functions

```
1: /// Args function that parses command line arguments
2: let getArg argv key =
3:   let arg = Array.tryFind(fun (a:string) -> a.StartsWith(key)) argv
4:   match arg with
5:   | Some x -> x.Replace(key, String.Empty)
6:   | None -> failwith ("Missing argument: " + key)
7:
8: /// Folder function that ensures that a folder is created if it doesn't exist
9: let ensureFolder path =
10:  match Directory.Exists(path) with
11:  | false -> Directory.CreateDirectory(path) |> ignore
12:  | true -> ()
```

Configuration settings

Log level

```
1: let log = LogLevel.Verbos
```

Serialize Type

```
1: let xml = SerializeType.XML
```

DEV auth information

```
1: let usrDev = @"USERNAME"
2: let pwdDev = @"PASSWORD"
3: let domainDev = @"DOMAIN"
```

TEST auth information

```
1: let usrTest = @"USERNAME"
2: let pwdTest = @"PASSWORD"
3: let domainTest = @"DOMAIN"
```

Shared environment information

```
1: let rootFolder = __SOURCE_DIRECTORY__
2: let authType = AuthenticationProviderType.ActiveDirectory
3: let protocol = @"http://"
4: let port = @"80/"
5: let wsdl = @"/XRMServices/2011/Organization.svc"
6: let solution = "XrmVSSolution"
7: let unmanaged = rootFolder + @"\unmanaged\"
8: let managed = rootFolder + @"\managed\"
9: let translations = rootFolder + @"\translations\"
10: let data = rootFolder + @"\data\"
11: let webresources = rootFolder + @"\wr\"
```

DEV environment information

```
1: let hostDev = @"dg-crmdev-1.delegate.local"
2: let urlDev = protocol + hostDev + port
3: let orgDev = "XrmFramework"
4: let wsdlDev = Uri(urlDev + orgDev + wsdl)
```

DAXIF# - Type stærke script (og selvdokumenterende) filer



```
Delegate.DAXIFsharp x | M Inbox - ramon.sot... x | M Inbox (1) - gentau... x | Programming_Fsh... x | Google Oversæt... x | m Oppo...
file:///C:/_tfs/_delegate/DAXIF/_branches/1311-EARTHSHAKER/_docs/output/Delegate.DAXIFsharp.Sa...
Apps | DELEGATE | MAILTALK | CODE | TFS | LICENSES | CRM | SP | APPS | TRAINING | INTEGRATIONS |
DAXIF# operations
Sync webresources
1: ensureFolder webresources
2:
3: WebResourcesModule.syncSolutionWebResources
4: wsdlDev solution webresources authType usrDev pwdDev domainDev log

Export data from account, contacts and cases
1: ensureFolder data
2:
3: DataModule.dataExport
4: wsdlDev data [ | @"account"; @"contact"; @"incident"; @"lead"; @"opportunity"; | ]
   authType usrDev pwdDev domainDev log xml

Import data from account, contacts and cases
1: DataModule.dataImport
2: wsdlTest data authType usrDev pwdDev domainDev log xml

Export managed solution from DEV
1: ensureFolder managed
2:
3: SolutionModule.retrieveSolution
4: wsdlDev solution managed true authType usrDev pwdDev domainDev log

Import managed solution to TEST
1: let zip1 = managed + solution + @".zip"
2:
3: SolutionModule.fetchSolution
4: wsdlTest solution zip1 true authType usrDev pwdDev domainDev log

Export solution translations from DEV
1: ensureFolder translations
2:
3: TranslationsModule.retrieveTranslations
4: wsdlDev solution translations authType usrDev pwdDev domainDev log

Import solution translations back to DEV
1: let zip2 = translations + solution + @"_Translations.zip"
2:
```

```
Delegate.DAXIFsharp - Microsoft Visual Studio
FILE | EDIT | VIEW | PROJECT | BUILD | DEBUG | TEAM | SQL | TOOLS | TEST | ANALYZE | WINDOW
Start - Debug
Delegate.DAXI...p.Sample1.fsx
(Parsing project files)
64
65 (** DEV auth information *)
66 #load @".\AuthInfo.fsx"
67
68 let usrDev = AuthInfo.usr
69 let pwdDev = AuthInfo.pwd
70 let domainDev = AuthInfo.domain
71
72 (** TEST auth information *)
73 let usrTest = @"USERNAME"
74 let pwdTest = @"PASSWORD"
75 let domainTest = @"DOMAIN"
76
77 (** Shared environment information *)
78 let rootFolder = __SOURCE_DIRECTORY__
79 let authType = AuthenticationProviderType.ActiveDirectory
80 let protocol = @"http://"
81 let port = @":80/"
82 let wsdl = @"/XRMServices/2011/Organization.svc"
83 let solution = "XrmVSSolution"
84 let unmanaged = rootFolder + @"\unmanaged\"
85 let managed = rootFolder + @"\managed\"
86 let translations = rootFolder + @"\translations\"
87 let data = rootFolder + @"\data\"
88 let webresources = rootFolder + @"\wr\"
89
90 (** DEV environment information *)
91 let hostDev = @"dg-crmdev-1.delegate.local"
92 let urlDev = protocol + hostDev + port
93 let orgDev = "XrmFramework"
94 let wsdlDev = Uri(urlDev + orgDev + wsdl)
95
96 (** TEST environment information *)
97 let hostTest = @"dg-crmdev-1.delegate.local"
98 let urlTest = protocol + hostTest + port
99 let orgTest = "XrmTEST"
100 let wsdlTest = Uri(urlTest + orgTest + wsdl)
101
```

DAXIF# - Unit tests afvikles før assembly (.dll) bliver bygget



file:///C:/tfs_delegate/DAXIF/_branches/1311-EARTHSHAKER_docs/output/DataModuleUnitTests.html

d e l e g a t e

DAXIF# v.1.0.0.2 - Delegate Automated Xrm Installation Framework (2013-11-12T18:46:50.1652286+01:00)

DataModuleUnitTests.fsx

In order to execute this F# script F# 3.0 tools (VWD_FSharp.exe) must be installed. The tools can be downloaded from:

- [F# Tools for Visual Studio Express 2012 for Web](#)

After installation run the following from a `cmd.exe` (run as Administrator):

```
reg add "HKLM\SYSTEM\CurrentControlSet\Control\Session Manager\Environment" ^
/v Path /t REG_SZ /d "%PATH%;C:\Program Files (x86)\Microsoft SDKs\F#\3.0\Framework\v4.0"
```

and then log off/login and the Register Database will be updated (no need for restart)

Libraries

Load system libraries

```
1: #r @"System.Runtime.Serialization"
2: #r @"System.ServiceModel"
```

Load required assemblies

```
1: #r @"..\..\packages\Microsoft.Crm.Sdk.Proxy.5.0.14\lib\net40\microsoft.crm.sdk.proxy.dll"
2: #r @"..\..\packages\Microsoft.Xrm.Sdk.5.0.14\lib\net40\microsoft.xrm.sdk.dll"
3: #r @"..\..\..\lib\Microsoft.Crm.Services.Utility.dll"
```

Load non-compiled source files

```
1: #load @"..\HelperModules\Common\AuthenticationModule.fs"
2: #load @"..\HelperModules\Common\ServiceManagerModule.fs"
3: #load @"..\HelperModules\Common\ServiceProxyModule.fs"
4: #load @"..\HelperModules\Common\CrmDataModule.fs"
```

```
Solution Explorer | Team Explorer | Class View
F# Interactive
val domain : string = DELEGATE
val ap : AuthenticationProviderType = ActiveDirectory
val ac : AuthenticationCredentials
val wsdl : Uri =
    http://dg-crmdev-1.delegate.local/XrmFramework/XRMServices/2011...
val m : IServiceManagement<IOrganizationService>
val p : OrganizationServiceProxy
val tc1 : unit -> bool
val tc2 : unit -> bool
val tc3 : unit -> bool
val tc4 : unit -> bool
val tc5 : unit -> bool
val tc6 : unit -> bool
val unitTest : bool list = [true; true; true; true; true; true]
val result : bool = true
>
```

F# Interactive | Package Manager Console | Error List | Output | Find Results 1 | Undo

- Unit test gennemføres før bygningen den endelige assembly fil. F# interaktivt benyttes for add-hoc realtime afprøvninger

Bemærk: F# interaktivt kan interagere med C# assemblies

C:\WINDOWS\system32\cmd.exe

```
C:\_tfs_delegate\DAXIF_branches\DAXIFsharp_src\Delegate.DAXIFsharp\bin\Debug>fsianycpu Delegate.DAXIFsharp.Sample1.fsx
2013-10-31T21:37:34.8778624+01:00 - Info: Retrieve Solution: XrmVSSolution
2013-10-31T21:37:40.7700813+01:00 - Info: The Solution was retrieved succesfully
2013-10-31T21:37:40.7730816+01:00 - Info: Fetch Solution: XrmVSSolution
2013-10-31T21:37:46.8473812+01:00 - Info: The Solution was fetched succesfully

C:\_tfs_delegate\DAXIF_branches\DAXIFsharp_src\Delegate.DAXIFsharp\bin\Debug>fsianycpu Delegate.DAXIFsharp.Sample1.fsx
2013-10-31T21:39:04.5538401+01:00 - Info: Retrieve Solution: XrmVSSolution
2013-10-31T21:39:04.5558395+01:00 - Verbose: Organization: http://dg-crmdev-1.delegate.local/XrmFramework/XRMServices/2011/Organization.svc
2013-10-31T21:39:04.5568400+01:00 - Verbose: Solution: XrmVSSolution
2013-10-31T21:39:04.5568400+01:00 - Verbose: Path to folder: C:\_tfs_delegate\DAXIF_branches\DAXIFsharp_src\Delegate.DAXIFsharp\bin\Debug\managed\
2013-10-31T21:39:04.5568400+01:00 - Verbose: Managed solution: True
2013-10-31T21:39:04.5568400+01:00 - Verbose: Authentication Provider: ActiveDirectory
2013-10-31T21:39:04.5578405+01:00 - Verbose: User: crminstall
2013-10-31T21:39:04.5578405+01:00 - Verbose: Password: *****
2013-10-31T21:39:04.5578405+01:00 - Verbose: Domain: DELEGATE
2013-10-31T21:39:04.5628399+01:00 - Verbose: License is valid
2013-10-31T21:39:04.8861609+01:00 - Verbose: Service Manager instantiated
2013-10-31T21:39:04.8871937+01:00 - Verbose: Service Proxy instantiated
2013-10-31T21:39:04.8881854+01:00 - Verbose: Proxy timeout set to 1 hour
2013-10-31T21:39:04.8891852+01:00 - Verbose: Export solution
2013-10-31T21:39:10.2564126+01:00 - Verbose: Solution was exported succesfully
2013-10-31T21:39:10.2594103+01:00 - Verbose: Solution saved to local disk
2013-10-31T21:39:10.2633944+01:00 - Info: The Solution was retrieved succesfully
2013-10-31T21:39:10.2633946+01:00 - Info: Fetch Solution: XrmVSSolution
2013-10-31T21:39:10.2633946+01:00 - Verbose: Organization: http://dg-crmdev-1.delegate.local/XrmTEST/XRMServices/2011/Organization.svc
2013-10-31T21:39:10.2663928+01:00 - Verbose: Solution: XrmVSSolution
2013-10-31T21:39:10.2663928+01:00 - Verbose: Path to file: C:\_tfs_delegate\DAXIF_branches\DAXIFsharp_src\Delegate.DAXIFsharp\bin\Debug\managed\XrmVSSolution.zip
2013-10-31T21:39:10.2663928+01:00 - Verbose: Managed solution: True
2013-10-31T21:39:10.2673929+01:00 - Verbose: Authentication Provider: ActiveDirectory
2013-10-31T21:39:10.2673929+01:00 - Verbose: User: crminstall
2013-10-31T21:39:10.2673929+01:00 - Verbose: Password: *****
2013-10-31T21:39:10.2673929+01:00 - Verbose: Domain: DELEGATE
2013-10-31T21:39:10.2693935+01:00 - Verbose: License is valid
2013-10-31T21:39:10.3433980+01:00 - Verbose: Service Manager instantiated
2013-10-31T21:39:10.3433980+01:00 - Verbose: Service Proxy instantiated
2013-10-31T21:39:10.3444229+01:00 - Verbose: .ZIP loaded succesfully
2013-10-31T21:39:10.3453975+01:00 - Verbose: Proxy timeout set to 1 hour
2013-10-31T21:39:10.3463976+01:00 - Verbose: Import solution
2013-10-31T21:39:15.6090210+01:00 - Verbose: Solution was imported succesfully
2013-10-31T21:39:15.6100211+01:00 - Info: The Solution was fetched succesfully

C:\_tfs_delegate\DAXIF_branches\DAXIFsharp_src\Delegate.DAXIFsharp\bin\Debug>fsianycpu Delegate.DAXIFsharp.Sample1.fsx
2013-10-31T21:39:38.4002648+01:00 - Info: Fetch Solution: XrmVSSolution
2013-10-31T21:39:38.4012824+01:00 - Verbose: Organization: http://dg-crmdev-1.delegate.local/XrmTEST/XRMServices/2011/Organization.svc
2013-10-31T21:39:38.4012824+01:00 - Verbose: Solution: XrmVSSolution
2013-10-31T21:39:38.4022661+01:00 - Verbose: Path to file: C:\_tfs_delegate\DAXIF_branches\DAXIFsharp_src\Delegate.DAXIFsharp\bin\Debug\managed\XrmVSSolution.zip
2013-10-31T21:39:38.4022661+01:00 - Verbose: Managed solution: True
2013-10-31T21:39:38.4022661+01:00 - Verbose: Authentication Provider: ActiveDirectory
2013-10-31T21:39:38.4022661+01:00 - Verbose: User: crminstall
2013-10-31T21:39:38.4032640+01:00 - Verbose: Password: *****
2013-10-31T21:39:38.4032640+01:00 - Verbose: Domain: DELEGATE
2013-10-31T21:39:38.4072838+01:00 - Verbose: License is valid
2013-10-31T21:39:38.6853029+01:00 - Verbose: Service Manager instantiated
2013-10-31T21:39:38.6862855+01:00 - Verbose: Service Proxy instantiated
2013-10-31T21:39:38.6872829+01:00 - Error: Could not find file 'C:\_tfs_delegate\DAXIF_branches\DAXIFsharp_src\Delegate.DAXIFsharp\bin\Debug\managed\XrmVSSolution.zip'.
C:\_tfs_delegate\DAXIF_branches\DAXIFsharp_src\Delegate.DAXIFsharp\bin\Debug>
```

- mbs.microsoft.com
 - Virtual Machines (Hyper-V)
 - CRM2011
 - CRM2011-Exchange (AD)
 - CRM Administrator
 - CONTOSO\administrator
 - pass@word1
 - Adam Barr
 - CONTOSO\adam
 - pass@word1
 - Ken Mallit
 - CONTOSO\ken
 - pass@word1

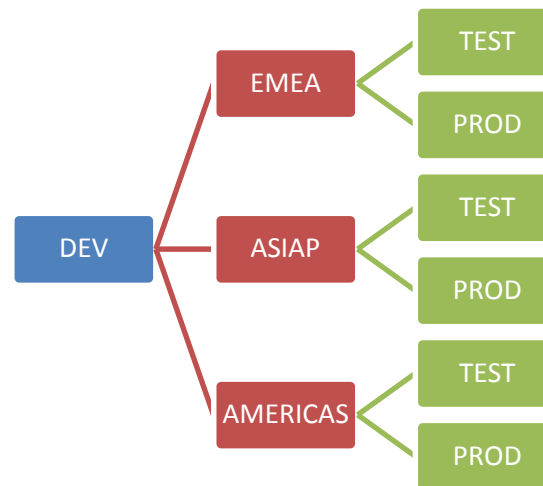
- One-click-installation

- CRM2011 vs CRM2013 vs CRM Online?
- Vi kan desværre ikke genbruge en CRM løsning til dem alle men ...
- Man kan oprette en løsning + populere med indhold fra TFS

Bemærkning: Udvides i en senere udgivelse med oprettelse af CRM tenant for On-Premise

- One-click-deployment

- Hvor mange har ikke prøvet at manuelt udrulle fra DEV → TEST → PROD? *Pain-in-the-ass* ☹️ !!!
- Hvor mange har så prøvet at gøre det for en global kunde? (vokser eksponentielt)



- TFS commit → DEV → DEV-BUILD → TEST → PROD
 - Solution Packager er ikke nemt at bruge (er der nogen som påstår)
 - Og det bliver ikke nemmere når det skal kombinere med TFS ...
 - Vi ønsker at fremstille et brugervenligt og nemt interface til at udfører denne opgave

- Web ressourcer synkronisering
 - MS CRM Developer Toolkit er ikke helt optimalt at bruge da alle filer, uanset type, bliver gemt i en enkelt mappe ("roden").
 - Man vil mange gange have diverse filer placeret i en mappestruktur. Denne struktur skulle også gerne afspejles i CRM løsningen (HTML + relative stier, osv.)
 - I sidste ende vil det også fjerne en del fejl/advarsler når man bruger det i kombination med MS Solution Packager

- Data management (Import/Eksport med Parallelisme)
 - Import og eksport af data skulle gerne ske så hurtigt som muligt.
 - Hvis man pt. skal anvende nogen af de værktøjer der er til rådighed, skal man lige holde tungen i munden for at sikre at data ikke bliver indlæst op til flere gange
(en af de kunder vi har overtaget har et issue med SCRIBE + MSMQ)
 - Kender man lidt til MS CRM datamodel, kan man ret hurtigt opstille et hierarkisk import sekvens som gør at det er muligt at indlæse data parallelt ved at udnyttet alt computers regnekræft

- Data migrering: 1:1 mellem source og target Oprettet af/på
Modificeret af/på (kun for On-premise)
 - Der er mange gange en kunde vil start på frisk med en hel ny CRM database (vi hører det tit når kunder snakker opgradering fra CRM2011 → CRM2013), men de vil stadig gerne bevare deres PROD data i den tilstand som de har det i dag (Eksempel: Workflows som lytter på et bestemt oprettelses/modificerings tidspunkt og sender en notits til brugeren)
 - Derfor er det ikke "bare lige" at eksportere data og indlæse data da disse dato'er vil blive sat til dags dato
 - Nogen skal man bare tænke lidt out-of-the-box 😊
(men man SKAL ALTID overholde SDK retningslinjer)

Bemærkning: Ved import af data, kan man overskrive Oprettet af/på

- DAXIF# bliver løbende udvidet:
 - NUGET pakke
 - Github hjemmeside med dokumentation og API beskrivelse
 - Keepass til opbevaring af miljø informationer
 - Bedre integration med Visual Studio (UI)
 - Og mange andre ting man lige kan komme i tanke om 😊
 - Men lige om hjørnet ...



DAXIF# - Delegate Automated Xrm Installation Framework (TODO: v.1.0.0.0) : Diff Report (TODO: ISO-8601 DateTimeStamp)

delegate

Diff Legend

Added	Changed	Removed	Moved from	Moved to	Ignored
Black text and green background	Black text and yellow background	White text and red background	Black text and gray background	Black text and gray background	White text and red background

Diff Tree

Tree	Unchanged	Changed	Not in source	Not in target
- Entities				
+ Account				
+ CustomerAddress				
+ Other	23	12	11	7
+ PluginAssemblies				
+ SdkMessageProcessingSteps				
+ WebResources				

Diff Viewer

Source: Some source file	Target: Some target file
<pre><ImportExportXml xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"> <Entities> <Entity> <Name LocalizedName="Account" OriginalName="Account" > Account </Name> <ObjectTypeCode> 1 </ObjectTypeCode> <FormXml> <forms type="main"> <systemform> <formid> {b053a39a-041a-4356-acef-ddf00182762b} </formid> <form shownavigationbar="true"> <hiddencontrols> <data id="address1_addressid" datafieldname="address1_addressid" classid="{5546E6CD-394C-4bee-94A8-4425E17EF6C6}"/> <data id="address2_addressid" datafieldname="address2_addressid" classid="{5546E6CD-394C-4bee-94A8-4425E17EF6C6}"/> </hiddencontrols> <tabs> <tab name="general" verticallayout="true" id="{13b0fbf2-e596-4dc5-919b-7a0aea72598b}" IsUserDefined="0"> <labels> <label description="General" languagecode="1033"/> </labels> </tab> </tabs> </form> </systemform> </forms type="main"> </FormXml> </Entity> </Entities> </ImportExportXml></pre>	<pre><ImportExportXml xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"> <Entities> <Entity> <Name LocalizedName="Account" OriginalName="Account2" > Account </Name> <ObjectTypeCode> 1 </ObjectTypeCode> <FormXml> <forms type="main"> <systemform> <formid> {b053a39a-041a-4356-acef-ddf00182762b} </formid> <form shownavigationbar="true"> <hiddencontrols> <data id="address1_addressid" datafieldname="address1_addressid" classid="{5546E6CD-394C-4bee-94A8-4425E17EF6C6}"/> <data id="address2_addressid" datafieldname="address2_addressid" classid="{5546E6CD-394C-4bee-94A8-4425E17EF6C6}"/> </hiddencontrols> <tabs> <tab name="general" verticallayout="true" id="{13b0fbf2-e596-4dc5-919b-7a0aea72598b}" IsUserDefined="0"> <labels> <label description="General" languagecode="1033"/> </labels> </tab> </tabs> </form> </systemform> </forms type="main"> </FormXml> </Entity> </Entities> </ImportExportXml></pre>

Spørgsmål?