Deploy GetADobjects assembly

Open SQL Management Studio and connect to the SQL server you will use.

*Note – if you are already using the AdchangeTracker* [*Active Directory change tracking - CodeProject*](http://www.codeproject.com/Articles/1002714/Active-Directory-change-tracking) *you will use the database you created for that.*

Create a database:

CREATE DATABASE [AD\_DW];

ALTER DATABASE [AD\_DW] SET TRUSTWORTHY ON;

USE [AD\_DW];

GO

Create (import) the assembly that is needed to query the Active Directory:

CREATE ASSEMBLY [System.DirectoryServices.AccountManagement] from 'C:\Windows\Microsoft.NET\Framework64\v4.0.30319\System.DirectoryServices.AccountManagement.dll' with permission\_set = UNSAFE --Fails if not 64 on 64 bit machines

GO

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| *Note – you will get three warnings – but thats expected:*  Warning: The Microsoft .NET Framework assembly 'system.directoryservices.accountmanagement, version=4.0.0.0, culture=neutral, publickeytoken=b77a5c561934e089, processorarchitecture=msil.' you are registering is not fully tested in the SQL Server hosted environment and is not supported. In the future, if you upgrade or service this assembly or the .NET Framework, your CLR integration routine may stop working. Please refer SQL Server Books Online for more details.  Warning: The Microsoft .NET Framework assembly 'system.directoryservices.protocols, version=4.0.0.0, culture=neutral, publickeytoken=b03f5f7f11d50a3a, processorarchitecture=msil.' you are registering is not fully tested in the SQL Server hosted environment and is not supported. In the future, if you upgrade or service this assembly or the .NET Framework, your CLR integration routine may stop working. Please refer SQL Server Books Online for more details.  Warning: The Microsoft .NET Framework assembly 'system.directoryservices, version=4.0.0.0, culture=neutral, publickeytoken=b03f5f7f11d50a3a, processorarchitecture=msil.' you are registering is not fully tested in the SQL Server hosted environment and is not supported. In the future, if you upgrade or service this assembly or the .NET Framework, your CLR integration routine may stop working. Please refer SQL Server Books Online for more details. |

Create the assembly and the two stored procedures that use the assembly:

*Copy the GetADobjects.dll file to C:\Temp on your SQL server.*

CREATE ASSEMBLY [GetADobjects] FROM 'C:\Temp\GetADobjects.dll' WITH PERMISSION\_SET = UNSAFE;

GO

CREATE PROCEDURE [dbo].[clr\_GetADobjects]

@ADpath [nvarchar](max),

@ADfilter [nvarchar](max),

@MemberList [xml] OUTPUT

WITH EXECUTE AS CALLER

AS EXTERNAL NAME [GetADobjects].[StoredProcedures].[clr\_GetADobjects];

GO

CREATE PROCEDURE [dbo].[clr\_GetADusersPhotos]

@ADpath [nvarchar](max),

@ADfilter [nvarchar](max)

WITH EXECUTE AS CALLER

AS EXTERNAL NAME [GetADobjects].[StoredProcedures].[clr\_GetADusersPhotos]

GO

Test if it is working - get all users:

DECLARE @ADpath nvarchar(64) = 'LDAP://DC=contoso,DC=com';

DECLARE @ADfilter nvarchar(64) = '(&(objectCategory=person)(objectClass=user))';

DECLARE @Members XML;

EXEC clr\_GetADobjects @ADpath, @ADfilter, @Members OUTPUT;

Note – the code that queries the Active Directory is running as the SQL service user. If that user is a domain user you should not have any problem because by default any domain user can query the AD. I have not tested this when the service user is the NT Authority\NETWORK SERCVICE account. See this: <http://stackoverflow.com/questions/63749/what-user-account-would-you-recommend-running-the-sql-server-express-2008-servic>

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| Note:  Got this error following a Windows Update on the SQL server:  *Date                28.2.2016 04:05:00*  *Log                Job History (Update AD\_DW)*    *Step ID                1*  *Server                SANDMAN\DEVELOPMENT*  *Job Name                Update AD\_DW*  *Step Name                Call usp\_UpdateADall\_tables*  *Duration                00:00:03*  *Sql Severity        16*  *Sql Message ID        0*  *Operator Emailed*  *Operator Net sent*  *Operator Paged*  *Retries Attempted        0*    *Message*  *Executed as user: VECA\sandman\_development\_. A .NET Framework error occurred during execution of user-defined routine or aggregate "clr\_GetADobjects": System.IO.FileLoadException: Could not load file or assembly 'System.DirectoryServices, Version=4.0.0.0, Culture=neutral, PublicKeyToken=b03f5f7f11d50a3a' or one of its dependencies. Assembly in host store has a different signature than assembly in GAC. (Exception from HRESULT: 0x80131050) See Microsoft Knowledge Base article 949080 for more information. System.IO.FileLoadException: at StoredProcedures.clr\_GetADobjects(SqlString ADpath, SqlString ADfilter, SqlXml& MemberList) . [SQLSTATE 42000] (Error 6522) ------------------------------------------------------------------------ [SQLSTATE 01000] (Error 0) Get Users from AD INTO ADusers table. [SQLSTATE 01000] (Error 0) Error - Get Users - Operation aborted. [SQLSTATE 01000] (Error 0). The step failed.*  **Deleting the assemblies and SP‘s and reinstalling fixed this issue.** |

Use the follwing script to un-install the stored procedures and the assembly:

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| USE [AD\_DW]  GO  DROP PROCEDURE [dbo].[clr\_GetADobjects]  GO  DROP PROCEDURE [dbo].[clr\_GetADusersPhotos]  GO  DROP ASSEMBLY [GetADobjects]  GO |

Deploy UpdateAD\_DataWarehouse

Run the **UpdateAD\_DataWarehouse\_Create(modified).sql** script.

And the **Create\_SQL\_Agent\_job.sql** script – if using SQL Agent to update AD\_DW. Remeber to modify where indicatred.

Use the UpdateAD\_DW.ps1 Powershell script if not using SQL Agent (when SQL Express is used for example).