Article Andreas Schneider · Mar 28, 2021 4m read

Registering the .Net Data Provider for InterSystems Caché and InterSystems IRIS as DbProviderFactories

This small tutorial described how to "register" the ADO.NET Database Provider (Driver) for InterSystems IRIS and InterSystems Caché on a Windows machine.

Before we start: Why need the ADO.NET Database Provider to be registered?

ADO.NET provides factory classes standardize the way programmer will create a provider-specific Connection. This simplifies the way programmers create provider specific instances in a generic data access API. Details about that can be found here:

https://docs.microsoft.com/en-us/dotnet/framework/data/adonet/obtaining-a-dbproviderfactory

If an Application use this system to obtain a list of available Data Providers, the provider needs to be registered. In my example I want to use the .Net Data Provider for InterSystems IRIS in a MS SQL Server Integration Service Project. This Application (SSIS) use a Connection Dialog that lists all on this machine available *k*nown Data Provider:

Connection Manager

Provider: .Ne	t Providers\SqlClient Data Provider	-
	 INet Providers SqlClient Data Provider OracleClient Data Provider Odbc Data Provider Odbc Data Provider Microsoft Jet 4.0 OLE DB Provider Microsoft Office 12.0 Access Database Engine OLE DB Provider Microsoft Office 16.0 Access Database Engine OLE DB Provider Microsoft OLE DB Driver for SQL Server Microsoft OLE DB Provider for Analysis Services 13.0 Microsoft OLE DB Provider for Oracle 	^
	 Select or enter a database name: Attach a database file: 	OK Cancel

As you can see there are no InterSystems Provider available. The following section describes what needs to be done to list the provider on this connection dialog.

machine.config?!

Each .NET Framework data provider that supports a factory-based class registers configuration information in the DbProviderFactories section of the machine.config file on the local computer. The DbProviderFactories class uses

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the machine.config file(s) to resolve the invariant name to the appropriate provider factory type. The machine.config file is located in ... / windows> / Microsoft.NET / Framework / version> / config / machine.config.

On my computer e.g:

C: /Windows /Microsoft.NET /Framework /v4.0.30319 /Config

and

C: /Windows /Microsoft.NET /Framework 64 /v4.0.30319 /Config

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v4.0.30319	^	Name	Date modified	Тур
1031		P legacy.web_minimaltrust.config	18/03/2017 22:01	XN
1033		legacy.web minimaltrust.config.default	07/12/2019 10:10	DE
ASP.NETWebAdminFiles		🖓 machine.config	28/03/2021 12:01	XM
📙 Config	1	machine.config.comments	07/12/2019 10:12	CC
de		machine.config.default	07/12/2019 10:12	DE
de-DE		NetFx40_IIS_schema_update.xml	18/03/2017 22:01	XN

Add DbProviderFactories

Open the machine.config file with a text editor and search for "system.data". You found possibly an empty block like this:



These are the values we have to insert for IRIS:

```
<add name="InterSystems IRIS Data Provider"
invariant="InterSystems.Data.IRISClient"
description=".Net Data Provider for InterSystems IRIS"
type="InterSystems.Data.IRISClient.IRISFactory,
InterSystems.Data.IRISClient,
Version=4.5.0.0,
Culture=neutral,
PublicKeyToken=ad350a26c4a4447c"/>
```

... and this for Caché

```
<add name="InterSystems Cache Data Provider"
invariant="InterSystems.Data.CacheClient"
description=".Net Data Provider for InterSystems Cache"
type="InterSystems.Data.CacheClient.CacheFactory,
Intersystems.Data.CacheClient,
Version=4.5.0.0,
```

Pay attention to the <DbProviderFactories></DbProviderFactories> tags!

Now start Visual Studio (Data Tools), create a SSIS Projekt and open the Connection Manager again. The dialog should look like this:

Provider:	Net Providers\SqlClient Data Provider Net Providers SqlClient Data Provider OracleClient Data Provider Odbc Data Provider InterSystems Cache Data Provider InterSystems IRIS Data Provider Net Providers for OleDb	
	(Select or enter a database name:	OK Cancel
		~

Great! The providers are listed!

... unfortunately that is not enough. The providers are not working if you select one of the new entries you get this message:



That 's happened because the Provider are not known it the GAC (global assembly cache), so the entries can 't be found*.

*If you have done an IRIS/Caché installation on your computer (or just the client tools) maybe the provider is already registered in the GAC and you don 't this message and all is already working. Congratulations!

Register InterSystems provider in the GAC

To registered the InterSystems provider on a computer you can do it this way:

Find the files first:

Intersystems.Data.CacheClient.dll (for Caché)

InterSystems.Data.IRISClient.dll (for IRIS)

Within an IRIS installation you can find the file e.g. ... /dev /dotnet /bin /v4.5

:) > InterSystems > IRIS2020.1 > dev > dotnet	> bin → v4.5	
Name	Änderungsdatum	Ту
InterSystems.Data.Gateway	30.03.2020 21:32	A
InterSystems.Data.Gateway64	30.03.2020 21:32	A
InterSystems.Data.IRISClient.dll	30.03.2020 21:32	A
InterSystems.Data.IRISClient	30.03.2020 21:32	X
InterSystems.Data.XEP.dll	30.03.2020 21:32	A
InterSystems.Data.XEP	30.03.2020 21:32	X
Newtonsoft.Json.dll	30.03.2020 21:32	A

Copy the files on your computer in a folder (InterSystems.Data.IRISClient.dll).

Now you are able to register the Provider in the assembly cache with the gacutil.

Using gacutil

If you have a Visual Studio installed you can use the Visual Studio Developer Command Prompt:

Administrator: C:\Windows\system32\cmd.exe



That has the advantage that you don 't need to look for the gacutil path, for installation just type:

gacutil -i <full path to your dll>\InterSystems.Data.CacheClient.dll

e.g.: gacutil -i D:\dev\privat_repos\NativeCacheTest\lib\InterSystems.Data.CacheClien t.dll

D:\dev\privat_repos\iris_ssis_components>gacutil -i D:\dev\privat_repos\NativeCacheTest\lib\InterSystems.Data.CacheClient.dll
Microsoft (R) .NET Global Assembly Cache Utility. Version 4.0.30319.0
Copyright (c) Microsoft Corporation. All rights reserved.
issembly successfully added to the cache
Koa should oo the messager Assembly succession added to the same

To remove something from gac, use the option "-u": gacutil -u InterSystems.Data.CacheClient

Install both provider:

```
gacutil -i <full path to your dll>\InterSystems.Data.IRISClient.dll
gacutil -i <full path to your dll>\InterSystems.Data.CacheClient.dll
```

If you don 't have the "Visual Studio Developer Command Prompt" you need to search the gacutil executable first. On my computer it is located at: "C: /Program Files (x86) /Microsoft SDKs /Windows /v10.0A /bin /NETFX 4.8 Tools /gacutil.exe"

Install:

```
"C:\Program Files (x86)\Microsoft SDKs\Windows\v10.0A\bin\NETFX 4.8 Tools\gacutil.exe
" -i D:\dev\privat_repos\NativeCacheTest\lib\InterSystems.Data.IRISClient.dll
"C:\Program Files (x86)\Microsoft SDKs\Windows\v10.0A\bin\NETFX 4.8 Tools\gacutil.exe
" -i D:\dev\privat_repos\NativeCacheTest\lib\InterSystems.Data.CacheClient.dll
```

Remove:

```
"C:\Program Files (x86)\Microsoft SDKs\Windows\v10.0A\bin\NETFX 4.8 Tools\gacutil.exe
" -u InterSystems.Data.CacheClient
"C:\Program Files (x86)\Microsoft SDKs\Windows\v10.0A\bin\NETFX 4.8 Tools\gacutil.exe
" -u InterSystems.Data.IRISClient
```

It works! :-)

And now... if you open the SSIS Project again, navigate to the Connection Manager it should looks like this:

$\mathbf{\hat{n}}$	21 21 🖾		
	✓ Misc	4	
Connection	ApplicationName	devenv.exe	
	ConnectionLifetime	0 Estra	
\mathcal{G}	ConnectionReset	20	
E CO	EastureOntion 1		
All	readureoption 1 Irelation evel ReadUpcommitted		
	LosEile	Cilleer/Public/log/sprovider.log	
	MayDoolSize		
	MetaDataEormat	odbs2	
	MinPoolSize	0	
	Namespace	Samples	
	PacketSize	1024	
	Password		
	Pooling	True	
	Port	1972	
	PreparseCacheSize	200	
	Server	localhost	
	SoRcvBuf	32768	
	SoSndBuf	32768	
	SQLDialect	cache	
	Ssl	False	
	SsIProtocol	0	
	SslServerHostNameVerification	False	
	StreamPrefetch	0	
	TcpNoDelay	True	
	User	_system	
	WorkstationId		
	ApplicationName		

You can now select the IRIS provider, see and configure all available connections details.

Thanks for reading.

#Deployment #Development Environment #Caché #InterSystems IRIS

Source

URL:<u>https://community.intersystems.com/post/registering-net-data-provider-intersystems-cach%C3%A9-and-intersystems-iris-dbproviderfactories</u>