MACROSOFT NEW PRODUCT ANNOUNCEMENT

DATA MORPH

Version 1.0.00

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A new tool that allows our clients to migrate, via a fully automated visual process, their VFP Database directly into a SQL Server Database

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[1] We want to highlight the development team that has (and is) working on this tool: (Ramu Dhanapathy, Mukesh Khandelwal, Ramesh K Iyer, John Demashin, Palanisamy Kuppusamy C, Venkatraman Rajaram, Resmi Anayath Ravindranathan).

Introduction

Data Morph 1.0 is a new tool we are making available directly to our clients as part of our VFP conversion practice. It allows users to quickly and easily convert their VFP database (along with all the data, of course) to an equivalent SQL Server database. We believe it contains a number of unique and useful features that make it the first of its kind.

Contact us.[2] We will be glad to demonstrate the tool to you, and show you how easy it is for you to get up and running with a well-configured, equivalent SQL database, generally in less than a couple of days (really). We will need to work with you through the initial configuration parts, but after that you can do the rest on your own.

And you might want to sit up straight for this comment - if you have many similar distinct databases (say for different customers, which we all know can often happen) you can then use the tool to convert each of the databases in succession, like in an assembly line! Yes, really!

And Data Morph 1.0 performs checks along the way to ensure the data in the new database is correct and complete, according to all the business rules we put in ahead of time.[3] The tool also allows users to correct potential data problems right within the use screens that the tool finds in the process of performing the migration.

We are continuing to add more data quality checks to the system, and adding other major features to make the tool even more usable and foolproof, with the expectation that we will release version 2.0 before the end of this year. We will be glad to share our roadmap for this product to clients that contact us.

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[2] You can find our contact information at the end of this article.

[3] There are a large number of business and data rules already that can be implemented on the system. More, and ones specific to a particular customer, can be incorporated into the system before we hand it over to a client.

The rest of this product announcement provides a high-level overview of the system, and its major features. We also recommend that users go see our Data Morph 1.0 presentation on SlideShare.

Background

Data Morph 1.0 is another automated process component we are now adding to our 'Migrate from VFP to .Net' Practice. That makes for a total of 7 automation tools!! All the other tools we have engineered (except for Code Matrix which is used upfront by clients to derive detailed statistics on their VFP application that we can then use to estimate the effort for a conversion) are used solely by our development teams in doing VFP conversions.

Taken together, we are happy to report that using these tools we have been able to reduce manual efforts of a conversion by up to half and add substantially to the precision and accuracy of our conversions. And we are not done by any means – there are even bigger tools that are now in the 'works' and we expect to be able to utilize them before the end of this year.

Contact us, we will be happy to give you a deep dive into our world of VFP conversion automation, how we have introduced science and engineering methods into what had been up to now an archaic backwater in the IT landscape, where good developers have tended to run away as fast as they could!?
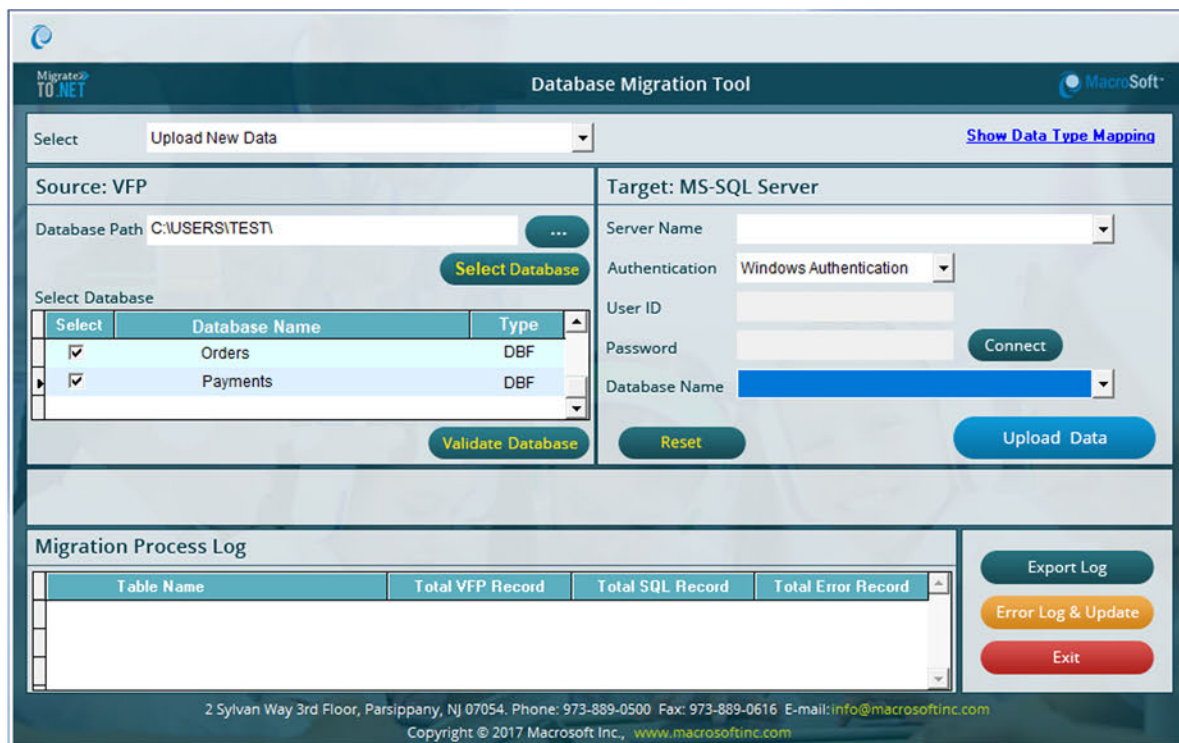
Not us, we are totally committed to working these conversions in the best possible and most precise way. That is our stated mission. And, honestly, given all the truly amazing applications that clients have written over these many decades using VFP, it is something we are glad and proud to participate in. Yes, it is certainly time to convert out of VFP, but let's at least do it in the best possible way, using state of the art tools and techniques, so we don't end up with a 'spaghetti code application' but rather with a new modern .Net application that reflects the top breeding of its VFP predecessor! (sorry for showing a little emotion!?

Data Morph Look and Feel

In this section, we give you a flavor of the tool via a series of screen shots that show the application at key points in the process of migration. So, let's start.

Starting Screen

The first chart below shows the starting screen of the application. You'll note the left panel is for specifying the VFP database and the right side for the target MS-SQL Service database. And the bottom screen shows the process log that comes into play when the migration process starts running.

Here are some of the features of the tool that we note in relation to this screen:

- The tool is customizable according to VFP table structures and client needs.
- The tool has the ability to select the tables and can create them in the new SQL database.
- Uploading free tables without the VFP database container files is possible.

- If available on VFP tables, deleted records on the table can be uploaded for restoring ability

- After target database is created, the tool creates the table structures itself.

- Only table partition can be created with the tool.

Migration Process Underway

- The tool adds new columns (primary keys) to the tables while migrating to SQL.

- The tool creates VFP Index into SQL Tables.

- Table validation and data verification can be used for data cleansing purposes (according to the given rules incorporated into the system) while migration occurs.

Migration Complete

- After the migration process is done, records with errors can be listed and directly updated in the tool itself via a separate popup screen (see the below two screens)

Database Migration Tool

Richmond CSD - Error Details - (1 / 3)

Record No.	Table Name	Fiscal Year	Logged Date	Ready for Upload	Click to Fix
5	EMPLEAVE	0	08/11/2017 02:08:31 PM		Fix
3	EMPLOYEE	0	08/11/2017 02:08:32 PM		Fix
5	EMPLOYEE	0	08/11/2017 02:08:32 PM		Fix

SQL Error
Error Number : 1526
Error Message :Connectivity error: [Microsoft][ODBC SQL Server Driver][SQL Server]The conversion of a varchar data type to a datetime data type resulted in an out-of-range value.

Command INSERT INTO [EMPLEAVE] VALUES ('001', '01579', 'LOAU', '05/21/2007', '06/30/0952', '01/28/2011', '', 24, '10/12/1993', '11/05/1993', '10/12/1993', '10/12/1993', NULL, NULL, '', '', ' ','08/13/2007 03:30:01 PM', 80, '02/25/2011 10:32:57 AM', 16, 0)

Save   Upload   Close

Database Migration Tool

Richmond CSD - Error Details - (2 / 3)

Record No.	Table Name	Fiscal Year	Logged Date	Ready for Upload	Click to Fix
5	EMPLEAVE	0	08/11/2017 02:08:31 PM	Y	Fix
3	EMPLOYEE	0	08/11/2017 02:08:32 PM		Fix
5	EMPLOYEE	0	08/11/2017 02:08:32 PM		Fix

SQL Error
Error Number : 1526
Error Message :Connectivity error: [Microsoft][ODBC SQL Server Driver][SQL Server]The conversion of a varchar data type to a datetime data type resulted in an out-of-range value.

Command INSERT INTO [EMPLOYEE] VALUES ('00003', '000000030', 'Deloria, Hollie Z.', 'Hollie Z. Deloria', 'Deloria', 'Hollie', 'Z', 'Hollie', 'Deloria', 'I', '', '', '', NULL, '09/24/2008', NULL, NULL, NULL, 'U', 'F', '', 0, '', 0, '', '', 0, '', '', '', '', '', ' ', NULL, '00', NULL, '00', 0, 0, 0, '', '', NULL, '', NULL, NULL, NULL, NULL, '
',NULL, NULL, '', '', '', '', NULL, NULL, '', '', 0, '4', 'PART', NULL, 0, NULL, NULL, 0, 0, '', '', NULL, 0, NULL, NULL, 0, '', '', '', '', 0, ' ','', '', 0, 0, ' ','05/21/0120 08:42:28 PM', 832, '09/24/2008 03:45:21 PM', 79, 0)

Save   Upload   Close

Process Steps Prior to Using Data Morph

These are the things you can and should do to get ready to first use Data Morph and the things you can do to customize the application to your specific needs. As noted at the beginning of this paper, we recommend that we work with you in the beginning to get things set up properly, but please be sure that it will not be a big process for us to work with you to get this done. So, here's what to do:

- Have your VFP database ready (Prepare VFP data structure document)

- Build SQL to-be table structure (Prepare Excel Table, columns to be added or maybe converted)

- Configure the tool (VDF files, data base structure, database selection to be migrated) depending on your needs

- Provide the sample database with values

We will take what you've prepared and configure the tool "tailored to your needs" with below steps.

- We will update/change the update screen according to your particulars.

- We will update/change the export log.

- During tool setup, if there are characters in Unicode (graphical format characters) in the VFP database, then they will need to be uploaded to the SQL Server database with a special routine, which we will share with you.

As a final step before processing can begin is to set up the configuration of the VFP tables and the to-be target SQL Server tables. Below are sample of these two tables.

VFP Table (Samples):

Table Name	Sno	Field Name	Data Type	Width	Decimal
MERCHANDISE	1	MERCHANDISEID	C	5	0
MERCHANDISE	2	NAME	C	3	0
MERCHANDISE	3	DESCRIPTION	C	2	0
MERCHANDISE	4	CATEGORY	N	1	0
ORDERS	1	ORDERID	C	6	0
ORDERS	2	ORDERDATE	T	7	0
ORDERS	3	DATEADDED	T	8	0
ORDERS	4	USERADDED	I	4	0
ORDERS	5	LASTUPDATE	T	8	0
ORDERS	6	USERUPDATED	I	4	0
ORDERS	7	RENEWAL	N	1	0
PAYMENTS	1	ISAPPROVED	C	6	0
PAYMENTS	2	DESCRIPTION	C	40	0
PAYMENTS	3	PO	L	1	0
PAYMENTS	4	PR	L	1	0
PAYMENTS	5	EA	L	1	0
PAYMENTS	6	PV	L	1	0
PAYMENTS	7	STATUS	C	1	0

Note: By default, Width and Decimal place values will be used as it is in SQL. Their value can be changed based on the VFP Data and Client requirements.

Default Data Type Mapping from VFP to SQL

VFP Datatype	SQL Datatype
(C)haracter	Varchar
(I)nteger	Integer
(M)emo	Varchar(max)
(N)umeric	Numeric
(F)loat	Float
(D)ate	DateTime
Date(T)ime	DateTime
(L)ogical	Bit

SQL Server Table (Samples):

Table Name	Sno	Field Name	Data Type	Width	Decimal	Comments
MERCHANDISE	1	ID_PK	Integer	4	0	Added by the Data Morph Tool
MERCHANDISE	2	MERCHANDISEID	C	5	0	
MERCHANDISE	3	NAME	C	3	0	
MERCHANDISE	4	DESCRIPTION	C	2	0	
MERCHANDISE	5	CATEGORY	N	1	0	
MERCHANDISE	6	ISDELETED	Bit	1	0	Added by the Data Morph Tool
ORDERS	1	ID_PK	Integer	4	0	Added by the Data Morph Tool
ORDERS	2	ORDERSID	C	6	0	
ORDERS	3	ORDERSDATE	T	7	0	
ORDERS	4	DATEADDED	T	8	0	
ORDERS	5	USERADDED	I	4	0	
ORDERS	6	LASTUPDATE	T	8	0	

Table Name	Sno	Field Name	Data Type	Width	Decimal	Comments
ORDERS	7	USERUPDATED	I	4	0	
ORDERS	8	RENEWAL	N	1	0	
ORDERS	9	ISDELETED	Bit	1	0	Added by the Data Morph Tool
PAYMENTS	1	ID_PK	Integer	4	0	Added by the Data Morph Tool
PAYMENTS	2	ISAPPROVED	C	6	0	
PAYMENTS	3	DESCRIPTION	C	40	0	
PAYMENTS	4	PO	L	1	0	
PAYMENTS	5	PR	L	1	0	
PAYMENTS	6	EA	L	1	0	
PAYMENTS	7	PV	L	1	0	
PAYMENTS	8	STATUS	C	1	0	

Process Steps After Using Data Morph

Once the process is run and the new SQL Server database is up and running, the only thing left is to do final testing of the new database to ensure that the conversion occurred completely and with 100% accuracy.

Here the user will need to construct a series of batch routines that will read data from the VFP database and then check the same values in the SQL Server database. These needs to be built and customized to each specific client's configuration and VFP database.

We know how to build these batch routines and can easily work with each client to show them how to do it, and we can do it for a client if that is a better approach. This is far from a show stopper type requirement, and again, we will work with our clients to get this done easily and quickly.

Summary

So, that is brief overview of Data Morph, our new tool for migrating a VFP database to SQL Server using our totally automated and visual process! We hope you will call us to discuss this tool and how it might be a positive step in helping you in achieving your VFP migration strategy.

And please stay tuned to our site – there are other big new automation tools coming out soon that will really help automate the process of converting your VFP applications to a modern .Net platform – doing the conversion faster, at a lower price point, with much greater precision, and with even better quality in the final .Net product we deliver.

Even at the risk of sounding somewhat immodest (forgive us), we think it is critically important for you to know that we are world's best at VFP conversions, and we are investing in so many new tools and techniques and processes that we will continue to widen the lead over our competitors!!

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