GET TO KNOW DATA INTEGRATION for Microsoft Dynamics CRM

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Lives in Yardley, PA where he enjoys family life with his wife and two sons; and running, basketball, soccer, and gardening.
● Data Migration
  ● One-time movement of data from one system to another

● Data Integration
  ● Real-time, or near-real-time, movement of data from one system to another
  ● Automated, periodic updates from one system to another; often just looking at incremental data changes
  ● One-way or bidirectional
- SQL Server Integration Services (SSIS), with Add-Ons for CRM Adaptors
- Other third-party data integration applications, specifically designed for managing data migration / integration jobs
- Custom (.NET, etc.)
- CRM, (as Source or Target) always through the CRM web service
  - Entities and Attributes
  - Fetch XML (as a source) – love this
  - Real-time Triggers (Publishers) for CRM Source incl. Microsoft Message Queue (MSMQ)
- Excel, .csv, etc. – recommend importing to SQL Server table first
- SQL Server database, and all other databases
• Straight XML (note that MSMQ is XML-based, can also process XML files with multiple records included)

• SQL Server Tables, Views, or Stored Procedures
  • SQL Server Triggers on source tables for real-time integrations
  • Use Last Modified On Date / Time for incremental updates
• What resources do you already have in-house
• CRM 2016 – Excel Export / Update / Re-Import (can demo this)
• SQL Server / SSIS
• SSIS Expertise (can be learned, but other tools are easier to start)
• Scribe / eOne Solutions / Inaport / Simego & many others too
• Custom (.NET, etc.)
Tools – Specific Vendors and Applications / Servers / Adaptors

- SSIS components
  - CozyRoc SSIS+
  - KingswaySoft
- Scribe Insight
- Scribe Online Integration Services
- Scribe Online Replication Services
- eOne Solutions SmartConnect
Prep Work

- **Business Analysis**
  - **Requirements Analysis**
    - Analyze, validate, communicate business objectives
    - Define specifications (requirements), such as need for one-time migration or ongoing integration
  - **Mapping**
    - Understand Entity Relationships (1:N, N:1, N:N), picklists, etc.
- Extract data from Source
- Transform data (e.g., picklist translation, GUID lookups
  - The Derived Column is your friend
- Map the data to the Target (Load)
- Error Logging
• Insert

• Update

• Update / Insert (Upset)

• Insert / Update (faster if most records do not already exist, only performs Update if Insert “fails” on duplicate key violation)
A Note on CRM Migrations vs. Upgrades

- Scenario 1 – **Upgrade** CRM from CRM 2011 / 2013 / 2015 on-prem to CRM 2016 on-prem
  - No data migration required – all customizations will move with the migration; and all GUID’s will be identical in both systems

- Scenario 2 – **Migrate** CRM data from on-prem to CRM Online
  - Have to get your customizations there first, then migrate the data
• CRM Custom Entities and Attributes may be required in your Target system, identical to what you have in your Source system.

• For data migrations; say from CRM on-prem to CRM Online, the first challenge is to move all your customizations from the legacy CRM system to the on-prem CRM system

• Trick / Hack to import solutions from on-prem to Online
● Unpack Solution Zip File

● Change:
  ● `<ImportExportXml version="7.0.0002.0053" SolutionPackageVersion="7.0" languagecode="1033" generatedBy="OnPremise" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  ● Repackage Solution File – “Try it Now...”
- Proper Sequencing (e.g., Accounts, then Contacts, then Pri. Contacts)
- Picklist translations
- GUID Lookups (looking up the record to populate the Foreign Key)
- Activities (Tasks, Phone Calls, Emails, Appointments, custom activities)
- Notes
- Attachments
Persisted XML Data Source – XML file exists as a local file

Persisted XML Data Source Example

…Persisted XML Data Source Example…
Define the Source Document Location and Sample Schema
Mapping, just like any other Data Migration / Integration
Run the DTS in Trial Mode
Observe the integration/migration process “Step Results” – this one first processes a Parent Account, and then a child Contact.
“Drop” the XML File in a Folder; the Integration Processor Picks it Up and Processes It
Several Jobs can be “Daisy-Chained” Together
Demo I – Straightforward Import from SQL to CRM Online

- Utilizing eOne Solutions SmartConnect
- T-SQL Query of Adventure Works 2014 tables
- All-in-One dedicated App Server for Migration
Why SMARTCONNECT + Dynamics CRM?

✓ Connect Data from **Any Source** to **Any Destination** through **Any Transformation**
✓ Less Moving Parts. Less Technical. Fewer Servers
✓ Scalable, Powerful yet Easy to Manage
✓ Used by More than 3000 Companies
✓ True Real-Time Integrations Triggered via CRM Plugins

**AVAILABLE CONNECTORS**

- Database ODBC
- Web Service REST/SOAP
- Dynamics CRM
- Dynamics GP
- Static File Folder
- MS SQL Database
- Salesforce CRM
- Dynamics NAV
- Xero Cloud ERP
- Zendesk Help Cloud

**WWW.TRYSMARTCONNECT.COM**
Connect ANY SOURCE with ANY DESTINATION at ANY TIME via ANY TRANSFORMATION path.
Demo I – Straightforward Import from SQL to CRM w/ eOne Solutions SmartConnect

Map Setup

Data Source: ODBC Connection
Data Source Type: Bulk Data Load
Data Source: ODBC Connection

Settings
Connection Type: Adventure Works
Connection String: DRIVER={SQL Server Native Client 11.0};SERVER=SYNC-SQL2014;Trusted_Connection=Yes;APP=acct
Query: Preview Rows: 10

Source Columns

Destination Columns

Destination: Microsoft Dynamics CRM
Demo II – Mktg List import from Excel to SQL Table; then SSIS to Import into CRM

- Import Excel file into CRM, example Marketing List
- Use SSIS and KingswaySoft / CozyRoc to move data into CRM
- Easy Logging to Excel files
- Use of Alt Key for key field lookup
Demo II – Mktg List import from Excel to SQL Table; then SSIS to Import into CRM

- Keep Excel File Simple; Only one tab, no spaces in the column headings (First row has column names)
- Microsoft Excel Source import into SQL
- Destination is SQL Server Native Client 11.0
- Review (Edit Mappings) and Preview
- 1,489 rows transferred
Demo II – Mktg List import from Excel to SQL Table; then SSIS to Import into CRM

- Fire up your Visual Studio / SQL Server Data Tools (SSDT) / SSIS
- Install the KingswaySoft and CozyRoc SSIS components
- Create the Alternate Key in CRM
- Query the Data Source
- Map the fields
- Observe the Results in Success / Error Logs
Demo II – Mktg List Import; when do you really need the Alternate Key?

Microsoft Dynamics CRM Destination Editor

Specify how you want to write data into Microsoft Dynamics CRM server

General
Columns
Error Handling

Select the connection manager and destination entity

CRM Connection Manager: Dynamics CRM Connection Manager
Action: Update
Destination Entity: lead

Upsert/Update Settings

Upsert/Update Matching Criteria: Manually Specify
Handling of Multiple Matches: Primary Key
Optional Settings: Manually Specify
Remove Unresolvable References: CRM Alternate Key (requires 2015 Update 1 or later)

Only Primary Key and Alternate Key matching options are applicable to Update action.
Demo II – Mktg List Import; create an Alt Key in CRM
Demo II – Mktg List Import; create an Alt Key in CRM
Demo III – CRM I to CRM II using Adv. Find (Fetch XML) Data Source – Easy!

- CRM I = CRM Online Demo I (Chrome)
- CRM II = CRM Online Demo II (Edge)
Demo III – move data from one CRM system to another with a Fetch XML Source

- Fetch XML isn’t just for CRM Online
- Using Adv Find, get all the fields (attributes / columns) you need including needed columns from related-entities (e.g., Lead Owner & Phone No.)
- Will also demo utilizing the CRM Entity Alt Key feature
- Secondly...run an On-Demand workflow on all records in Adv Find (Fetch XML); can be thousands of records; to add specific Leads to specific Mktg Lists
Demo IIIa – Be the Circular Green Checkmark!
Demo IIIb – Execute (On-Demand) Workflow

Microsoft Dynamics CRM Destination Editor

Specify how you want to write data into Microsoft Dynamics CRM server.

- **Select the connection manager and destination entity**
  - CRM Connection Manager: Dynamics CRM Connection Manager

- **Action**
  - Execute Workflow

- **Destination Entity**
  - Create
  - Update
  - Delete
  - Upset
  - Merge
  - Convert

- **Upsert/Update Matching Criteria**
  - Execute Workflow

- **Handling of Multiple Matches**
  - Execute Workflow Option

- **Optional Settings**
  - Remove Unresolvable References
  - Send dateline values in UTC Format
  - Enable CRM Duplicate Detection
  - Remove Invalid Characters
  - Ignore NULL-Valued Fields
  - Ignore Unchanged Fields
  - Batch Size: 200
  - Change Flag Field(s):

- **Execute Workflow Option**
  - Workflow: Add Lead to Mktp List - Demo

- Buttons: Refresh CRM Metadata, Map Unmapped Fields, Clear All Mappings, OK, Cancel
Demo IV – Real-time Integration with CRM “Publisher”

- Plug-ins from Scribe / eOne Solutions SmartConnect can facilitate a trigger to “publish” a real-time integration process whenever records within a certain view or entity change.
- Scribe publishes an MSMQ message
- Show movement of records from one CRM to another on change
Discussion – Key CRM Data Integration Challenges

- Mapping Picklists – common formula: FILELOOKUP( S110, "c:scribedata\xref.txt", "Counties" )
- Lookups / GUIDs – DBLOOKUP( S10, "LegacySource", "account", "name", "accountid" ) where S10=Co. Name
- Assigning Record Ownership – this can be just like a lookup to the appropriate System User or Team
- Many-to-Many Relationships – just like two one-to-manys or many-to-ones
- Activity Records – Activity Pointers and Activity Parties for Tasks, Phone Calls, Appointments, and Emails
- Notes and Attachments
- Last Modified On Date, for **incremental** updates (upserts)
- Overridden Created On Data – can be mapped during initial data load to have the right “Created On” date
Super-easy way to replicate your CRM Database

Very reliable

Keeps all data in case of accidental deletion – great for CRM Online

Great for foundation of Data Warehouse, Power BI Data Source

Azure DB is easy and inexpensive
Integration Tools
Scribe Insight / Scribe Online Integration Services / Scribe Online Replication Services
Challenges

“I want basic integration, but it must account for our custom fields and objects.”

“I thought once we moved to the cloud this would be out of the box.”

“I need more documentation than my SI has project hours to deliver.”

“This custom integration is really challenging, especially since the original developer left the company months ago.”

“We don’t have the tools to troubleshoot and support.”
Design Approach

Connect key systems and customer touch points using a design approach that provide for **configurable** outcomes.

Design for **adaptation**. Cloud systems rapidly evolve and your integration approach must be adaptive.

Strive for **long term** project success.
Enhancing your Power BI experience

Easy to Extend

- Easily create your own connector to extend Scribe Replication Service to virtually any data source for use with Power BI
Enhancing your Power BI experience

BENEFITS

• Enhanced Performance
  – Ability to replicate some, all, or just the most important data needed for use in Power BI dashboards
  – Ability to group data based on high or low transaction value, or specific data types

• Accessibility to virtually any application or data source
  – Connectivity to Dynamics CRM, salesforce, and Marketo included
  – Easily build your own connectors for Scribe Online Replication Service

• Allows for templated solutions
  – For fast, easy standup of dashboards
Scribe Insight Recertification

This certificate of achievement is awarded to

Ian Smith

for successfully passing the

Scribe Insight Recertification Exam

06/28/2016

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06/28/2017

Expiration Date
UPCOMING WEBINARS IN THE SERIES

Webinar 3: Get to Know Sales Automation for CRM Online
Friday, July 1, 2016 | 01:00 PM EDT
Click Here to Register

Webinar 4: Get to Know Customer Service with CRM Online
Friday, July 22, 2016 at 01:00 PM EDT
Click Here to Register

Webinar 5: Get to Know Social Engagement with CRM Online
Friday, August 12, 2016 at 01:00 PM EDT
Click Here to Register
Resources

• Links to this presentation and other webinar demos can be found at: http://www.syncratec.com/btws/