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Real World Optimizations for SAP Material Master Data Processes Using Winshuttle Query, Central and Transaction

Lance Yoder | Rockwell Automation

The background of the slide features a stylized illustration of a tropical beach. Silhouettes of palm trees of various heights are scattered across the scene, with a dark blue horizon line at the bottom representing the ocean. The overall aesthetic is clean and modern, using a limited color palette of blues and oranges.

WINSHUTTLE
USER
GROUP
SAN DIEGO | 2013

Who is Rockwell Automation?

- The world's largest company dedicated to industrial automation
- Headquartered in Milwaukee, Wisconsin
- About 23,000 employees
- \$6.3B 2012 Rev
- World's largest four sided clock tower



until 2010

Abraj Al Bait Tower – 140'

Rockwell Automation- 40'

“Not so” Big Ben – 23'



AP PHOTO
Big Ben is 23 feet in diameter



FILE PHOTO
Allen-Bradley is 40.2 feet in diameter



AP PHOTO
Computer generated rendering of the clock on Abraj Al Bait Towers, in Mecca, Saudi Arabia, which is about 140 feet in diameter.



Rockwell Automation's SAP Landscape

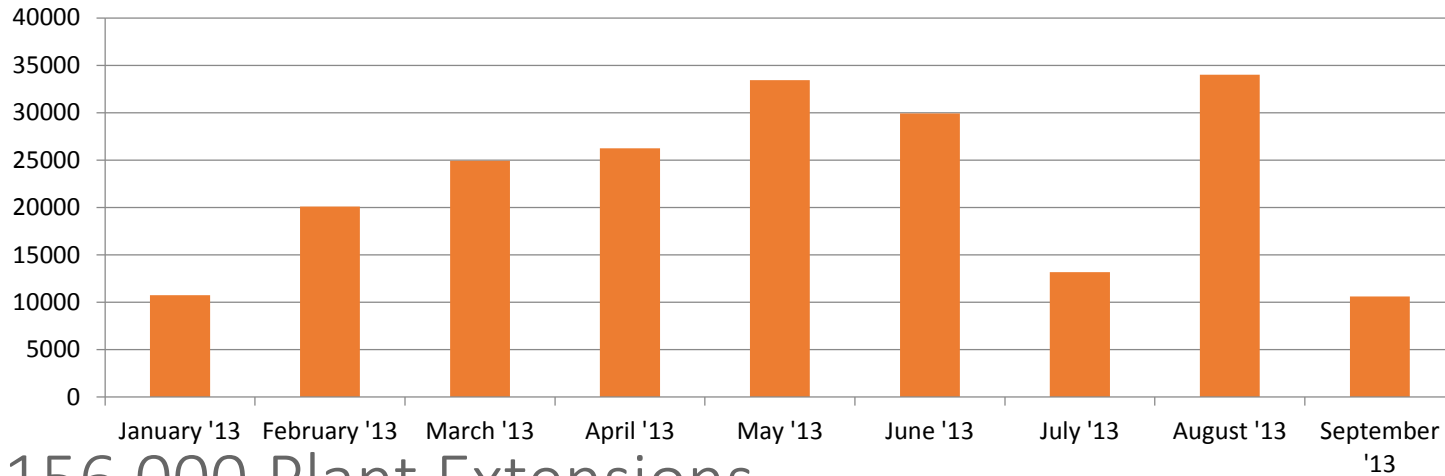
- ECC 6.0
- Still deploying SAP globally (and may be forever!)
 - 104 actively managed SAP plants
 - 36 actively managed SAP sales org
- We have 200,000+ products for sale
 - 3,758,498 plant extensions
 - 4,612,573 sales org extension
 - “That’s a lot of dater!” – Lance’s Dad, at a BBQ after a few drinks, 2013

Where Does Lance Fit In?

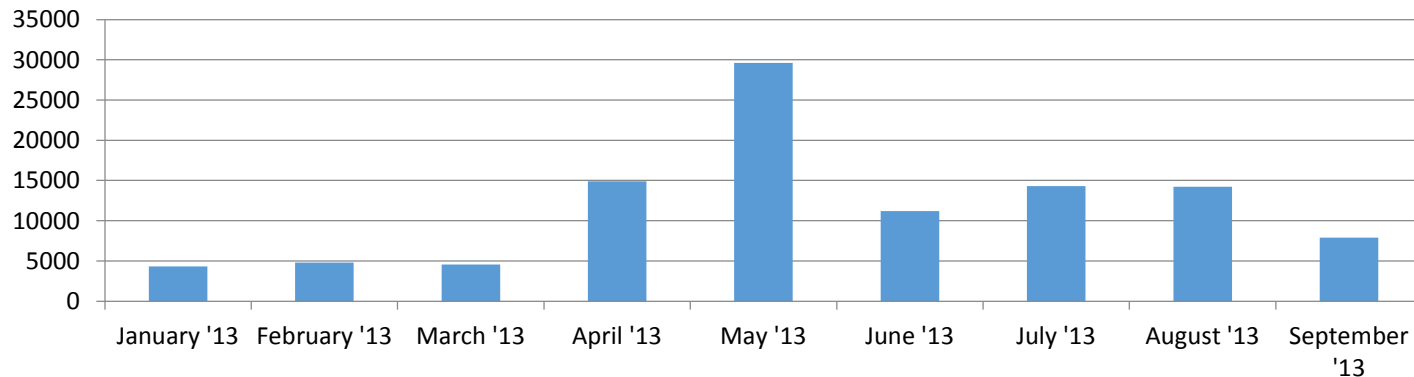
- Project Engineer working for the non-IT shared service group that “owns” the Material Master and related processes (with a degree in Chemical Engineering, this makes sense, right?)
 - Extensions, mass updates, data quality reports, etc
- Main focus is process improvement in the material master area.
- The old SAP-based extension and workflow process not good enough to meet business needs so redesigned the process using Winshuttle

2013 Extension Volumes through September

➤ 203,000 Sales Extensions



➤ 156,000 Plant Extensions



Overview: Working the Process

- 1. Collect requests
 - Excel based request forms

- 2. Gather live SAP data on those materials
 - Winshuttle Query

- 3. Validate the requests and apply business rules
 - Access

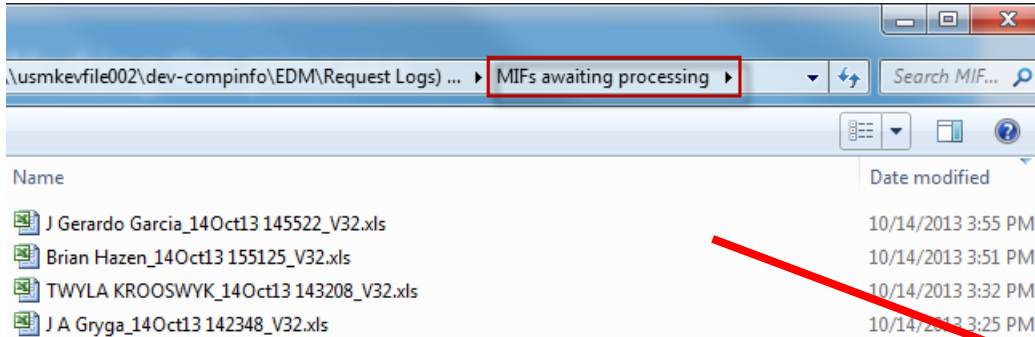
- 4. Extend the “good” requests
 - Winshuttle Transaction

- 5. Tell people the results
 - Email through Access



Step 1: Import the requests

Request Staging Folder



Access Database

PLANT EXTENSION STEPS

STEP 1

IMPORT NEW MIFS

IMPORT ERRORED MIFS

STEP 2

Download SAP Data with Winshuttle Query

STEP 3

RUN PLANT VALIDATION

STEP 4

Execute Plant Extensions with Winshuttle Transaction

STEP 5

GENERATE PLANT NOTIFICATION AND MIF

STEP 6

Create DIR and attach MIF

Query Input File with materials

The screenshot shows an Excel spreadsheet with the following data:

	A1
	A
1	MATERIAL1
2	0000000000943
3	0000000000943
4	0000000000943
5	0000000000944
6	0000000000944
7	104-D140ED24
8	21-503-113-01
9	40111-800-06
10	40113-080-01G
11	40114-600-15
12	40114-601-14

Step 2: Extract Real-time SAP data

File with materials used as input to Query

	A1
	A
1	MATERIAL1
2	000000000943
3	000000000943
4	000000000943
5	000000000944
6	000000000944
7	104-D1405-24
8	21-503-113-01
9	40111-800-06
10	40113-080-01G
11	40114-600-15
12	40114-601-14

The screenshot shows the Winshuttle QUERY interface for a script named 'MARA_EXTRACT.qsq'. The 'Run' tab is active, displaying configuration options such as 'Sheet: MARA', 'Start row: 2', and 'Run options: Run Now'. A 'Run' button is visible at the bottom of the configuration panel. The interface also shows 'Select' and 'Map' tabs with status indicators that the script has been created and mapped.

Data from each Query stored in its own tab of a single spreadsheet

The screenshot shows a Microsoft Excel spreadsheet with the following data:

	A	B	C	D
	OBJEK	ATINN	KLART	ATWRT
2	00000000094368412	0000000120	001	SMT
3	00000000094368412	0000000175	001	RED/YEL
4	00000000094368412	0000000269	001	
5	00000000094368412	00000277	001	SMT, TOPLED
6	00000000094368412	0000025079	230	OK FOR USE
7	00000000094368412	0000002827	250	CC
8	00000000094368412	0000002828	250	EC
9	00000000094368412	0000000166	260	NO
10	00000000094368412	0000000263	270	2
11	00000000094368412	0000000304	270	COMPLIANT
12	00000000094368412	0000000305	270	
13	00000000094368412	0000044131	270	2013/01/02
14	00000000094368421	0000000120	001	SMT
15	00000000094368421	0000000128	001	
16	00000000094368421	0000000175	001	RED/GRN
17	00000000094368421	0000000202	001	
18	00000000094368421	0000000269	001	

Linked Query Scripts extract real-time SAP data

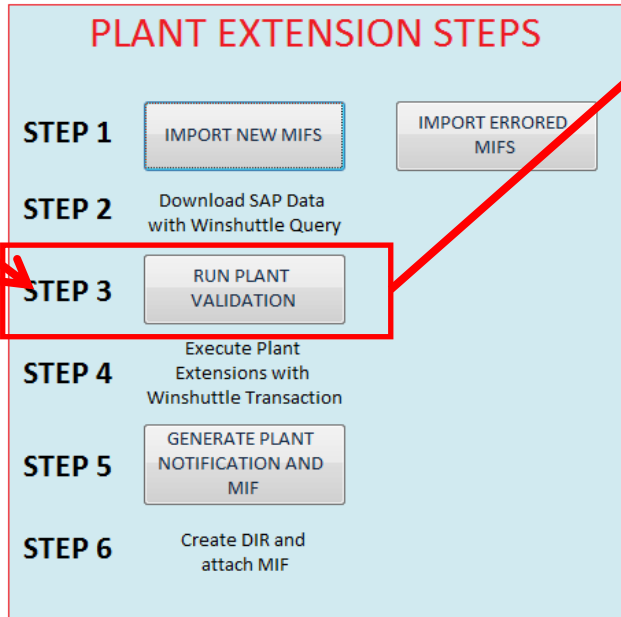


Step 3: Validate Requests / Apply Bus. Rules

Extracted SAP Data in Excel

	A	B	C	D
	OBJEK	ATBH	KLART	ATWRT
2	00000000094368412	000000120	001	SMT
3	00000000094368412	000000175	001	RED/YEL
4	00000000094368412	000000269	001	
5	00000000094368412	00000277	001	SMT, TOPLED
6	00000000094368412	000002579	230	OK FOR USE
7	00000000094368412	000002827	250	CC
8	00000000094368412	000002828	250	EC
9	00000000094368412	000000166	260	NO
10	00000000094368412	000000263	270	2
11	00000000094368412	000000304	270	COMPLIANT
12	00000000094368412	000000305	270	
13	00000000094368412	00000411	270	2013/01/02
14	00000000094368421	000000120	001	SMT
15	00000000094368421	000000128	001	
16	00000000094368421	000000175	001	RED/GRN
17	00000000094368421	000000202	001	
18	00000000094368421	000000269	001	

WS_Log	OBJECT_ID	SEQ_NO	MATNR	WERKS	LGNUM	LGTYP	REF_MATNR
	12012	83	PN-219368	1020			COPY ZED 1020
	12012	84	PN-219369	1020			COPY ZED 1020
	12012	85	PN-219370	1020			COPY ZED 1020
	12012	86	PN-219371	1020			COPY ZED 1020
	12012	87	PN-219372	1020			COPY ZED 1020
	12013	188	PN-222002	1020			COPY ZED 1020
	12013	185	PN-222807	1020			COPY ZSFG 102 EO1
	12013	186	PN-222808	1020			COPY ZSFG 102 EO1
	12007	1	PN-C156149	1020	102	601	COPY ZREP 102 PL1
	12004	101	PN-223209	1080			COPY ZFG 1080 PB1
	12004	103	PN-223210	1080			COPY ZFG 1080 PB1
	12004	102	PN-223209	1090			COPY ZFG 1090 PB1
	12004	104	PN-223210	1090			COPY ZFG 1090 PB1
	12010	100	40111-340-08G	1100	110	325	COPY ZSFG 110 SD1



Validated and built data staged in a table within database ready for loading by Transaction

Access Database: Button imports SAP data, validates requests, and applies business rules for additional data



Step 4: Load Data to SAP via Transaction

Data staged for SAP. Updated with SAP message by Transaction

WS_Log	OBJECT_ID	SEQ_NO	MATNR	WERKS	LGNUM	LGTP	REF_MA
Material PN-219368 created	12012	83	PN-219368	1020			COPY ZE
Material PN-219369 created	12012	84	PN-219369	1020			COPY ZE
Material PN-219370 created	12012	85	PN-219370	1020			COPY ZE
Material PN-219371 created	12012	86	PN-219371	1020			COPY ZE
Material PN-219372 created	12012	87	PN-219372	1020			COPY ZE
Material PN-222002 created	12013	188	PN-222002	1020			COPY ZE
	12013	185	PN-222807	1020			COPY ZS
	12013	186	PN-222808	1020			COPY ZS
	12007	1	PN-C156149	1020	102	601	COPY ZF
	12004	101	PN-223209	1080			
	12004	103	PN-223210	1080			
	12004	102	PN-223209	1090			
	12004	104	PN-223210	1090			
	12010	100	40111340-08G	1100			

Material Master Plant Extension - Access.TxR - Winshuttle TRANSACTION

SAP Certified
Integration with SAP NetWeaver

TRANSACTION script: SHUTTLEfile for TCODE MM01

SAP Transaction Code: MM01 Mode: Non-batch without controls File Name: Material Master Plant Extension - A...

Map: TRANSACTION script has been mapped. Update Mapping

Run: Select Data File: Master Extension\Databases\Extension Process Tables.mdb Table: WS_PLT_EXT Log Field: WS_Log

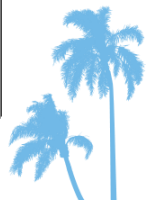
Run Reason: Run Options: Run Now Launch GUI

CENTRAL Status: Production Data Template: File description: SHUTTLEfile for TCOD...

File opened SAP Disconnected EN



MM01 Transaction script loads data to SAP

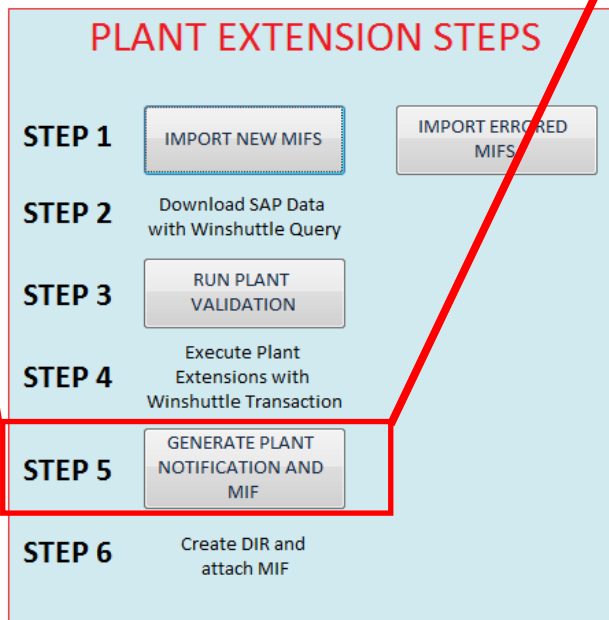


Step 5: Generate Notifications to Stakeholders

Extracted SAP Data in Excel

WS_Log	OBJECT_ID
Material PN-219368 created	12012
Material PN-219369 created	12012
Material PN-219370 created	12012
Material PN-219371 created	12012
Material PN-219372 created	12012
Material PN-222002 created	12013
Material PN-222807 created	12012
Material PN-222808 created	12012
Material PN-C156149 created	12012
Material PN-223209 created	12012
Material PN-223210 created	12012
Material PN-223209 created	12012
Material PN-223210 created	12012
Material 40111-340-08G created	12012

	A	B	C	D	E	F
	EMAIL	MESSAGE	USER_NAME	PROJECT_NAME	MATERIAL	PLANT
44	MMEXTENSIONPURCHASING	Material Purchased from third party vendor	YUMIKO ZANATTA	CSM EMEA	PN-C166374	4100
45	MMEXTENSIONPURCHASING	Material Purchased from third party vendor	REANNE WHITTING	CSM EMEA	PN-C90563	4100
46	MMEXTENSIONPURCHASING	Material Purchased from third party vendor	REANNE WHITTING	CSM EMEA	PN-C91491	4100
47	NROZEN@ra.rockwell.com	Material has been extended to plant	NATE ROZEN	EXTENSIONS	PN-225006	1190
48	NROZEN@ra.rockwell.com	Material has been extended to plant	NATE ROZEN	EXTENSIONS	PN-225007	1190
49	NROZEN@ra.rockwell.com	Material has been extended to plant	NATE ROZEN	EXTENSIONS	PN-225010	1190
50	OES-DQM@ra.rockwell.com	Error: Material Already in Plant	EDM MV	EDM MV EXTENSIONS	PN-224951	4000
51	OES-DQM@ra.rockwell.com	Error: Material Already in Plant	EDM MV	EDM MV EXTENSIONS	PN-224985	4000
52	OES-DQM@ra.rockwell.com	Error: Material Already in Plant	EDM MV	EDM MV EXTENSIONS	PN-224986	4000
53	RWHITTING@ra.rockwell.com	Material has been extended to plant	REANNE WHITTING	CSM EMEA	PN-178787	4100
54	RWHITTING@ra.rockwell.com	Material has been extended to plant	REANNE WHITTING	CSM EMEA	PN-C156005	4100
55	RWHITTING@ra.rockwell.com	Material has been extended to plant	REANNE WHITTING	CSM EMEA	PN-C90563	4100
56	RWHITTING@ra.rockwell.com	Material has been extended to plant	REANNE WHITTING	CSM EMEA	PN-C91491	4100
57	SCSCARLETT@ra.rockwell.co	New material extended to 1020. Review SLOC setup	ERIC TABASKA	PVP 12" LED	PN-223086	1020
58	SCSCARLETT@ra.rockwell.co	New material extended to 1020. Review SLOC setup	ERIC TABASKA	PVP 12" LED	PN-223087	1020
59	SCSCARLETT@ra.rockwell.co	New material extended to 1020. Review SLOC setup	ERIC TABASKA	PVP 12" LED	PN-223088	1020
60	YZANATTA@ra.rockwell.com	Material has been extended to plant	YUMIKO ZANATTA	CSM EMEA	PN-210268	4080
61	YZANATTA@ra.rockwell.com	Material has been extended to plant	YUMIKO ZANATTA	CSM EMEA	PN-210268	4100



Excel file containing messages and stakeholder for each message is attached to email

Access Database: Button reads SAP results and sends email to stakeholders define by each situation



Keys to Success

➤ End User Experience:

- Users fill out a form and receive an email with the results in less than 6 hours

➤ Processor Experience:

- Runner never reviews any data. Simply presses buttons in Access and runs Query and Transaction

➤ Rules, Rules, Rules:

- Validation and business rules stored inside Access VBA. Makes the process very flexible, robust, and easy to manage
- Increases “initial data quality” and reduces post-extension maintenance

Keys to Success

- Winshuttle Central: A single source for scripts
 - All runners have to use the same Winshuttle scripts stored in Central. Makes change management easier.
- One Transaction, One Script
 - Every material type has its own requirements. A single transaction script uses built-in condition functions to accommodate the needs of each material type

Benefit\$ to the Bu\$ine\$\$

➤ Time to Market:

- Extensions used to be a big holdup with regards to time to completion. By taking the time from days to hours, we've taken this issue off the table.

➤ Order Entry:

- Using business rules, data quality is much higher and customer orders that fail – and are therefore delayed – due to data issues have dramatically decreased

➤ Big or small, it can do it all:

- Product launches with large numbers of materials to extend used to be very time consuming and error prone. Now, there is almost no limit to how many materials can be requested at once. This process can do 1,000 – 3,000 an hour, correctly the first time!

➤ Do More with Less:

- Given the volume of requests, several headcounts have been saved as a result of the automated process



Pretty Good, but not Perfect

- No traceability of downstream activities
 - i.e. Email to purchasing sent but no tracking of whether or not they have completed their actions
- Its still a batch process:
 - Requestors used to be complain it took several days for their material to get extended with so-so quality, now six hours with high quality is to long!
 - Trying to get the action of a request coming in to trigger the process. Cannot launch Winshuttle from run command prompt when running from Central.

Questions

