

A young boy wearing a white jacket with a blue grid pattern and a dark cap is shouting into a large black megaphone. He is standing in a vast, flat, sandy desert landscape under a clear blue sky. In the background, there are low, rocky hills.

**Winshuttle STUDIO II
TRANSACTION Developer
Advanced Training I**

Contents

Winshuttle Studio II TRANSACTION Developer Basic Training

- ✓ User Interface
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Winshuttle Studio II TRANSACTION Developer Advanced Training I

- ✓ Multiline Recordings (Loops)
- ✓ Read From SAP
- ✓ Script Linking
- ✓ Backup SAP Data
- ✓ Data Validation

Winshuttle Studio II TRANSACTION Developer Advanced Training II

- ✓ Cell Based Mapping
- ✓ Dynamic Recordings (Conditions)
- ✓ Managing Long Texts (Read and Update)
- ✓ Making Scripts Available for RUNNER Users

Today's Agenda

- ✓ Multiline Recordings (Loops)
- ✓ Read From SAP
- ✓ Script Linking
- ✓ Backup SAP Data
- ✓ Data Validation

Multiline functionality

Multiline Transaction – FB50

Header
section

Enter G/L Account Document: Company Code 1000

Tree on Company Code Hold Simulate Park Editing options

Basic data Details

Document Date 03.02.2016 Currency EUR

Posting Date 03.02.2016

Reference REF

Doc.Header Text text

Document Type SA G/L account document

Cross-CC no.

Company Code 1000 IDES AG Frankfurt

Amount Information

Total deb. 120,00 EUR

Total cred. 120,00 EUR

COO

2 Items (No entry variant selected)

S...	G/L acct	Short Text	D/C	Amount in doc.curr.	Loc.curr.amount	T..	Tax jurisdictn code	V	Assignment no.
✓	473000	Postage	H Cr...	120,00	120,00				
✓	405200	Consumable...	S De...	120,00	120,00				
					0,00				
					0,00				
					0,00				
					0,00				
					0,00				
					0,00				
					0,00				
					0,00				

Line Item
section

Inserting New Lines

- All line items to be created in exactly the same way
 - Use the same row in the SAP screen
- Look for buttons like Insert Line or Add Line
 - Other good options: Find Line, Position, Filter
- Often best to use the first row
 - Existing rows pushed down
 - Second or last row also possible
- Make it repeatable
 - Use buttons to free the same row again

Inserting New Lines

1. Fill in the Header section first
2. Press Enter
3. Fill in 2-3 Line Items repeating these steps:
 - a) Input data on the first row
 - b) Press Enter
 - c) Select the first row
 - d) Click Insert Row
4. Save the document

The screenshot displays the SAP document entry interface. The 'Basic data' tab is active, showing the following fields:

- Document Date: 03.02.2016
- Currency: EUR
- Posting Date: 03.02.2016
- Reference: REF
- Doc.Header Text: text
- Document Type: SA (G/L account document)
- Cross-CC no.:
- Company Code: 1000 (IDES AG Frankfurt)

Below the header, there are 2 items (No entry variant selected). The table below shows the line items:

S...	G/L acct	Short Text	D/C	Amount in doc.curr.	Loc.curr.am
✓	473000	Postage	H Cr...	120,00	

The 'Insert Row' icon (a plus sign in a square) in the bottom toolbar is highlighted with a red box.

Loop definition in the Mapper

S.No	Enable	Description	Name	Type & Length	Mapping	Value
23	<input checked="" type="checkbox"/>	Document Header Text	ACGL_HEAD-BKTXT	STRING 25		doc
24	<input checked="" type="checkbox"/>	SAPMF05A - 1001 - Enjoy G/L Account Posting				
25	<input checked="" type="checkbox"/>	OK code for this screen	BDC_OKCODE	{ok code}		/00
26	<input checked="" type="checkbox"/>	Cursor position on the screen	BDC_CURSOR	{cursor}		ACGL_ITEM-KOSTL(01)
27	<input checked="" type="checkbox"/>	General Ledger Account	ACGL_ITEM-HKONT(01)	STRING 10		410000
28	<input checked="" type="checkbox"/>	Debit/Credit Indicator	ACGL_ITEM-SHKZG(01)	STRING 1		H
29	<input checked="" type="checkbox"/>	Amount in document currency	ACGL_ITEM-WRBT(01)	DECIMAL 13		100
30	<input checked="" type="checkbox"/>	Sales Tax Code	ACGL_ITEM-MWSKZ(01)	STRING 2		0I
31	<input checked="" type="checkbox"/>	Cost Center	ACGL_ITEM-KOSTL(01)	STRING 10		3100
32	<input checked="" type="checkbox"/>	SAPMF05A - 1001 - Enjoy G/L Account Posting				
33	<input checked="" type="checkbox"/>	OK code for this screen	BDC_OKCODE	{ok code}		=0006
34	<input checked="" type="checkbox"/>	Cursor position on the screen	BDC_CURSOR	{cursor}		ACGL_ITEM-STATE(01)
35	<input checked="" type="checkbox"/>		ACGL_ITEM-MARKSP(01)	STRING 1		X
36	<input checked="" type="checkbox"/>	SAPMF05A - 1001 - Enjoy G/L Account Posting				
37	<input checked="" type="checkbox"/>	OK code for this screen	BDC_OKCODE	{ok code}		/00
38	<input checked="" type="checkbox"/>	Cursor position on the screen	BDC_CURSOR	{cursor}		ACGL_ITEM-KOSTL(...
39	<input checked="" type="checkbox"/>	General Ledger Account	ACGL_ITEM-HKONT(01)	STRING 10		410000
40	<input checked="" type="checkbox"/>	Debit/Credit Indicator	ACGL_ITEM-SHKZG(01)	STRING 1		S
41	<input checked="" type="checkbox"/>	Amount in document currency	ACGL_ITEM-WRBT(01)	DECIMAL 13		100
42	<input checked="" type="checkbox"/>	Sales Tax Code	ACGL_ITEM-MWSKZ(01)	STRING 2		0I
43	<input checked="" type="checkbox"/>	Cost Center	ACGL_ITEM-KOSTL(01)	STRING 10		2100
44	<input checked="" type="checkbox"/>	SAPMF05A - 1001 - Enjoy G/L Account Posting				
45	<input checked="" type="checkbox"/>	OK code for this screen	BDC_OKCODE	{ok code}		=0006

Select the repeating set of lines in the Mapper

Loop definition in the Mapper

Loop while
Repeat script rows 24 through

End loop

Loop type: Single sheet loop

Loop identifier column: A

Text to Identify Transaction Header: H

Text to identify repeating Line Items: D

Sample single sheet loop format:

Sheet 1

	A	B	C	D	E	F	G
1	Loop ID	Transaction Header			Repeating Line Items		
2	H						
3	D						
4	D						
5	D						

- 1 Select the column that will contain the loop identifiers, which tell Studio whether a row is header data or line-item data. To see more columns, click Show unmapped columns.
- 2 Type the text that will identify a row as header data, which is the start of a new transaction.
- 3 Type the text that will identify a row of data as the repeating line items for the header data above it.

OK Cancel

Once correct lines are selected, click Create Loop.

Indicate which Excel column will contain the "row type" identifier and what the identifiers will be for Header and Line Items respectively.

Loop definition in the Mapper

S.No	Enable	Description	Name	Type & Length	Mapping
23	<input checked="" type="checkbox"/>	Document Header Text	ACGL_HEAD-BKTXT	STRING 25	
24		Loop While (Column A = "D")			
25	<input checked="" type="checkbox"/>	SAPMF05A - 1001 - Enjoy G/L Account Posting			
26	<input checked="" type="checkbox"/>	OK code for this screen	BDC_OKCODE	{ok code}	/00
27	<input checked="" type="checkbox"/>	Cursor position on the screen	BDC_CURSOR	{cursor}	ACGL_ITEM-KOS
28	<input checked="" type="checkbox"/>	General Ledger Account	ACGL_ITEM-HKONT(...)	STRING 10	410000
29	<input checked="" type="checkbox"/>	Debit/Credit Indicator	ACGL_ITEM-SHKZG(01)	STRING 1	H
30	<input checked="" type="checkbox"/>	Amount in document currency	ACGL_ITEM-WRBTR(0...	DECIMAL 13	
31	<input checked="" type="checkbox"/>	Sales Tax Code	ACGL_ITEM-MWSKZ(...)	STRING 2	
32	<input checked="" type="checkbox"/>	Cost Center	ACGL_ITEM-KOSTL(01)	STRING 10	
33	<input checked="" type="checkbox"/>	SAPMF05A - 1001 - Enjoy G/L Account Posting			
34	<input checked="" type="checkbox"/>	OK code for this screen	BDC_OKCODE	{ok code}	
35	<input checked="" type="checkbox"/>	Cursor position on the screen	BDC_CURSOR	{cursor}	
36	<input checked="" type="checkbox"/>		ACGL_ITEM-MARKSP...	STRING 1	
37		End loop			
38	<input checked="" type="checkbox"/>	SAPMF05A - 1001 - Enjoy G/L Account Posting			
39	<input checked="" type="checkbox"/>	OK code for this screen	BDC_OKCODE	{ok code}	/00

You can see where the loop has been set up.

Now you need to disable the actions you recorded for the other line item(s). You should find exactly the same actions as you have inside the loop. Look just above and below the loop.

Loop in Excel

Define H and D in column A to indicate which Excel row contains Header data and which Line Item data.

	A	B	C	D	G	H	I	J	M	N
1	Loop ID	Company Code	Document Date	Posting Date	Currency	GL Account	Debit / Credit	Amount		RUN LOG
2	H	1000	03.02.2016	03.02.2016	EUR					
3	D					410000	H	60		
4	D					400000	S	80		
5	D					400000	H	40		
6	D					410000	S	20		
7	H	1000	03.02.2016	03.02.2016	EUR					
8	D					410000	H	60		
9	D					400000	S	60		
10										
11										

Loop in Excel – result log

	A	B	C	D	G	H	I	J	M	N
	Loop ID	Company Code	Document Date	Posting Date	Currency	GL Account	Debit / Credit	Amount		
1										Log Winshuttle Studio 11.0 SAP System:Client:SAP User - W6R:800:adsot3 Script Name - FB50.Txr Mode - Standard (Non Batch without controls) Start Row - 2 End Row - 0 Number of Errors - 0 Records Uploaded - 2 Date and Time - 2/3/2016 4:33:02 PM Execution Time - 00:00:55 Run Reason -
2	H	1000	03.02.2016	03.02.2016	EUR					Document 100002888 was posted in company code 1000
3	D					410000	H	60		Item row D: See Log above
4	D					400000	S	80		Item row D: See Log above
5	D					400000	H	40		Item row D: See Log above
6	D					410000	S	20		Document 100002888 was posted in company code 1000
7	H	1000	03.02.2016	03.02.2016	EUR					Document 100002889 was posted in company code 1000
8	D					410000	H	60		Item row D: See Log above
9	D					400000	S	60		Document 100002889 was posted in company code 1000
10										

Multiline demo

- G/L posting in FB50
 - How to record
 - How to map

Multiline Tips (I)

- First investigate the SAP transaction
 - Look for Insert Line, Add Line, Find Line, Position, Filter
 - Discover how to make the process repeatable
- Always add the line on the same physical screen row
 - Use the first, second or last row
 - Page Down can help as well
- Record minimum two line item entries
 - Easier to find the repeating pattern when mapping
 - Loop around one line item and its actions
 - Disable the other item and its actions

Multiline Tips (2)

- Changing existing items is more challenging
 - Ability to locate the correct item depends on Tcode
 - In some cases the only option is to use GUI Scripting as recording mode to be able to use Index Based If
- Some scripts may be used to add only 1-3 line items and never more
 - Maybe more user friendly without loop
 - Record and map 3 separate line items
 - May need to use Skip Field Indicator or some conditions in the script

Read from SAP























Read from SAP

- Download data from SAP fields
- No queries needed, script similar to upload
- Read only fields can be used
- Reading and uploading in one script or separate
 - Depending on the case

Read from SAP usage

- Material master modifications
 - One script to read, another to upload (separate)
- HR pay change
 - One script to read, another to upload, linked
 - New values calculated by Excel formulas
- Creating PO
 - One script to upload, reading a few fields
 - Upload will generate data to 2 other fields
 - Same script can read this generated data

Read from SAP – In Mapper

Basic View		Expert View				
S.No	Enable	Description	Name	Type & Length	Mapping	Value
1	<input checked="" type="checkbox"/>	RUN LOG	RUN LOG			L
2	<input checked="" type="checkbox"/>	EXTENDED LOG	EXTENDED LOG			M
3	<input checked="" type="checkbox"/>	Material Number	RMMG1-MATNR	STRING 18		 E  
4	<input checked="" type="checkbox"/>	Checkbox	MSICHTAUSW-KZSEL...	STRING 1		X
5	<input checked="" type="checkbox"/>	Material Description (Short Text)	MAKT-MAKTX	STRING 40		F
6	<input checked="" type="checkbox"/>	Gross Weight	MARA-BRGEW	DECIMAL 13		 I  
7	<input checked="" type="checkbox"/>	Weight Unit	MARA-GEWEI	STRING 3		 H  
8	<input checked="" type="checkbox"/>	Net Weight	MARA-NTGEW	DECIMAL 13		 J  
9	<input checked="" type="checkbox"/>	Basic Material	MARA-WRKST	STRING 48		 G  

**Material Description is downloaded from SAP to Excel.
Material Number and others are uploaded from Excel to SAP.**

Read from SAP – In Excel

Run completed Successful Runs: 11 Errors: 0

	E	F	G	H	I	J	K	L
	Material Number RMMG1-MATNR	Material Description (Short Text) MAKT-MAKTX	Basic Material MARA-WRKST	Weight Unit MARA-GEWEI	Gross Weight MARA-BRGEW	Net Weight MARA-NTGEW		Log Winshuttle Studio 11.0 SAP System:Client:SAP User - W6R:800:adsot3 Script Name - MM02_Non.Txr Mode - Standard (Non Batch without controls) Start Row - 2 End Row - 0 Number of Errors - 0 Records Uploaded - 11 Date and Time - 2/8/2016 3:29:08 PM Execution Time - 00:00:54 Run Reason -
1								
2	ADS8105	testimateriaali 123	tatami	KG	17	12		Material ADS8105 changed
3	ADS8106	testimateriaali 124	\	KG	13	11		Material ADS8106 changed
4	ADS8107	testimateriaali 125	testi	KG	17	13		Material ADS8107 changed
5	ADS8108	testimateriaali 126	tatami	KG	15	5		Material ADS8108 changed
6	ADS8109	testimateriaali 127	fadfa	KG	17	12		Material ADS8109 changed

Column F downloaded from SAP, other columns uploaded to SAP

Using read only fields

Read only fields need to be activated separately.

View menu
Expert View
Disabled Fields

You see a lot of grey lines. Find your field and click on Enable tick box. Then you can map it.

S.No	Enable	Description	Name	Type & Length	Mapping	Value
44	<input type="checkbox"/>	Material Number	RMMG1-MATNR			
45	<input checked="" type="checkbox"/>	Material Description (Short Text)	MAKT-MAKTX	STRING 40		F
46	<input type="checkbox"/>		RMMZU_REVLA			
47	<input type="checkbox"/>		RMMZU_REVLP			
48	<input type="checkbox"/>	Base Unit of Measure	MARA-MEINS			KG
49	<input type="checkbox"/>	Unit of Measurement Text (Maxim...	T006A-MSEHT			
50	<input type="checkbox"/>	Material Group	MARA-MATKL			
51	<input type="checkbox"/>	Old material number	MARA-BISMT			
52	<input type="checkbox"/>	External Material Group	MARA-EXTWG			

Recommended to take off Disabled Fields once needed fields are selected.

Demo

- Read from SAP using MM02

Script linking

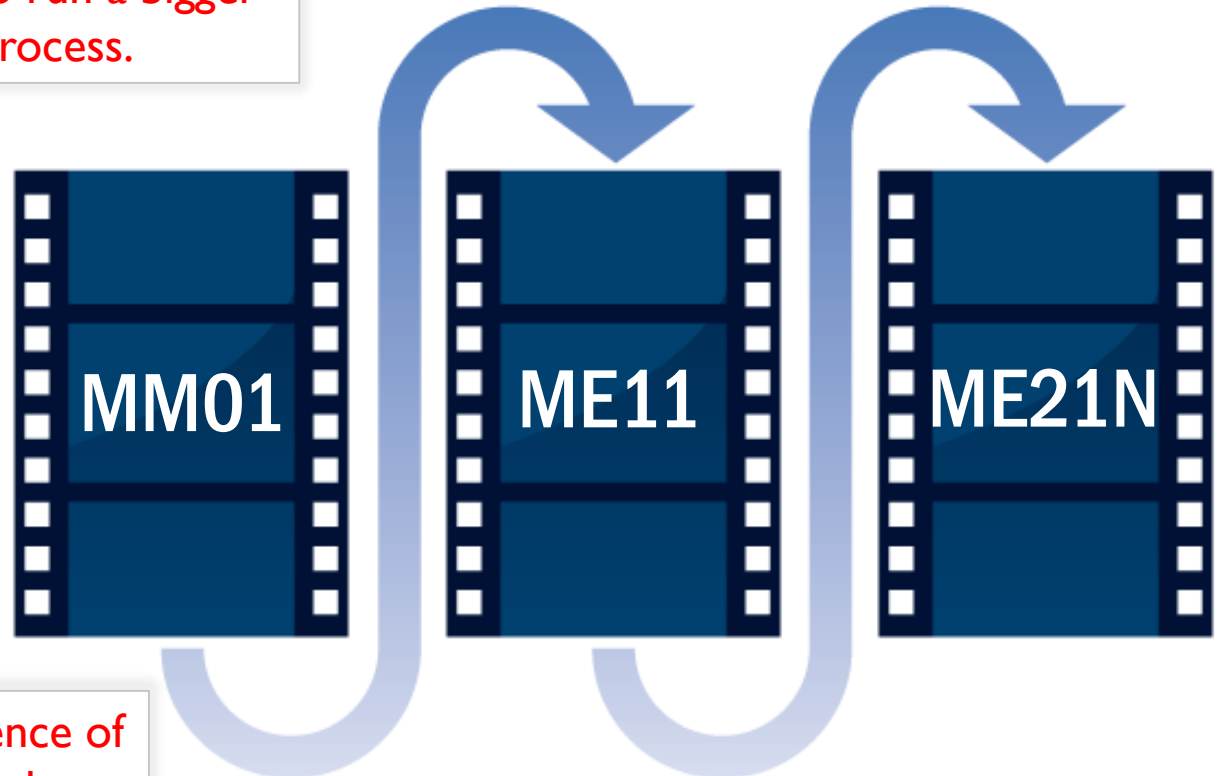
Script linking = Chaining

- Execute multiple scripts automatically in a sequence
- Combine scripts to automate business processes

Script Linking = Chaining

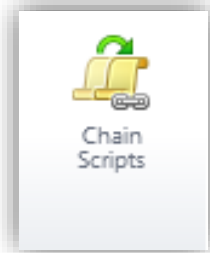
Link scripts together to run a bigger portion of a business process.

One script always operates in one SAP transaction.
Another script can operate in the same transaction or in a different one.

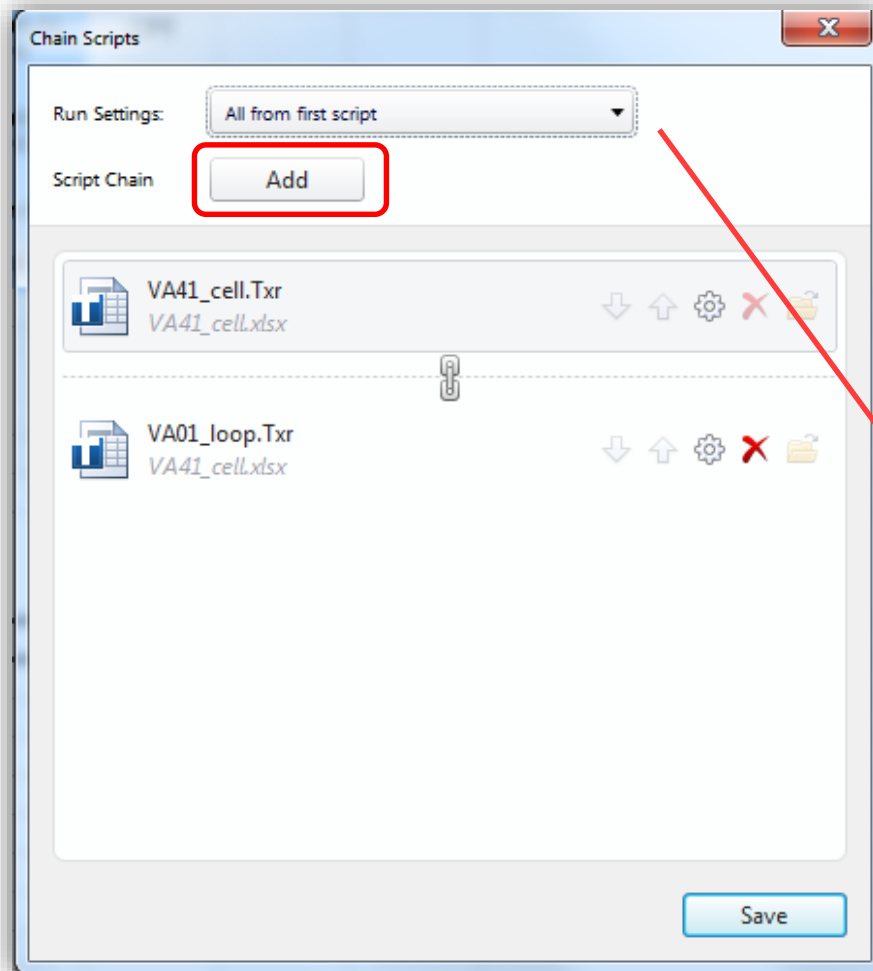


Create an automated sequence of those actions that you have the necessary data for at one time.

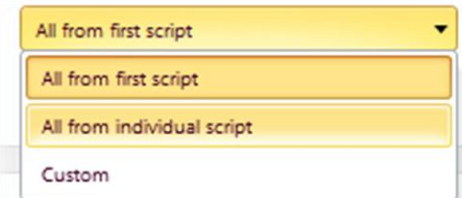
Script Linking = Chaining



To define a script chain, click on Chain Scripts in the Run menu.



Add a script to the chain.
You can choose to use the Run Settings of the first script for all in the chain or each script to use their own default settings.

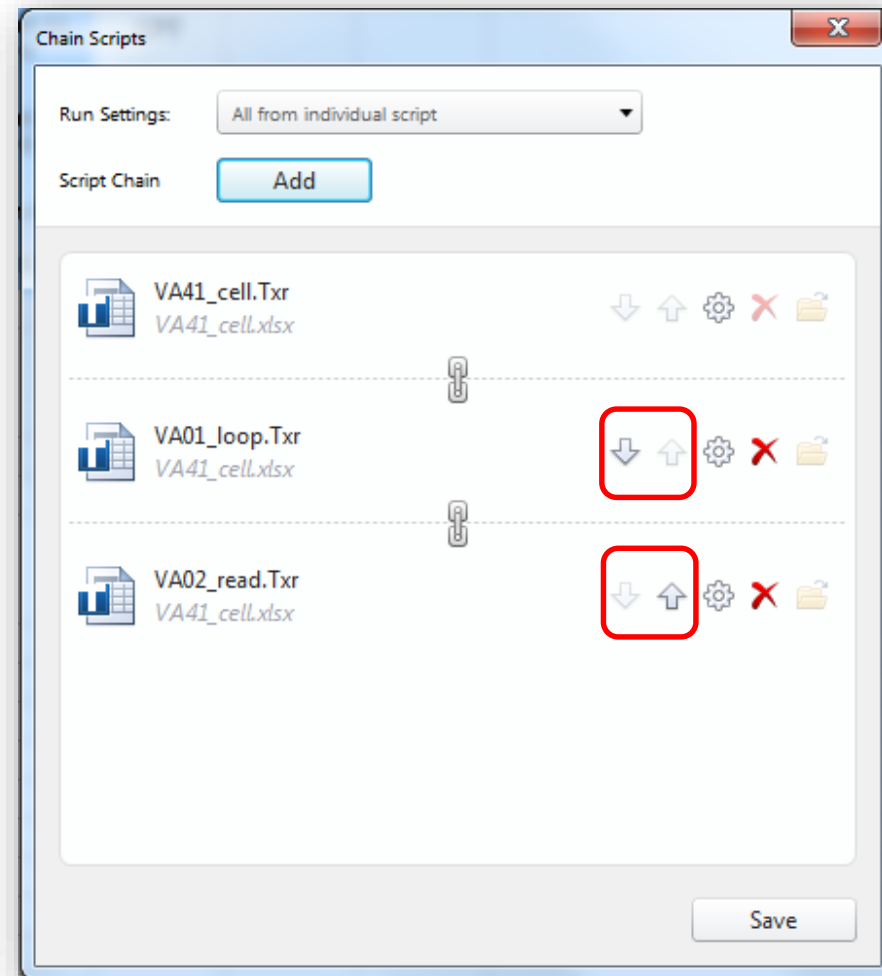


11_cell.Txr

11

Script Linking = Chaining

Make sure the chained scripts are in the right order. You can move them up or down in the list by clicking the arrow buttons. First script cannot be moved as you are doing this setup in that script.



Script linking alternatives

- Each script uses separate Excel input file (this is not possible on Central)
- Each script shares the same Excel input file
- Each script shares the same Excel input file but uses different worksheets
- Different combinations of above if >2 scripts chained
- The right solution depends on your need

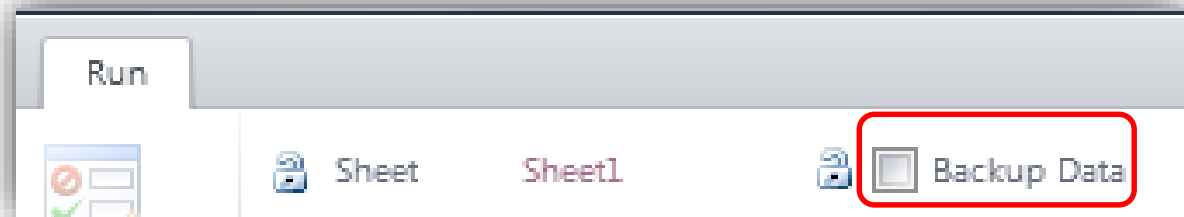
DEMO

- MM02 using script linking
- First script only reads from SAP
- Second script updates using first script's Excel as input

Backup SAP Data

Backup SAP data

- Automatic backup of the SAP data to be changed
- Same time as upload of new data
- New sheet in the Excel template
- Good for repeated updates
 - Only for updates – not creation
- Requires Standard Mode
- Activate in the Run menu



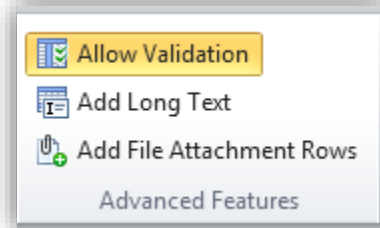
DEMO

- MM02 using Backup option

Data Validation

Data Validation

- Helps to ensure data is valid before actual upload
- Result: "Success" or error message per row in Excel
- Enable the feature
 - Map menu
- When enabled
 - Use from Run menu



Data Validation rules

- No data update on the last screen of recording
 - Don't go directly to Save after last update
 - Press Back to get prompted to save
 - Or navigate to different tab and then save
- Only a single commit (= save action) in script
 - Most transactions have single commit
 - PA30 has more – validation won't work

Data Validations limitations

- No GUI Scripting
- No linked scripts
- No multiple unnested loops
 - Nested loops ok
- No logical validation
 - Only checks data for individual SAP fields
 - Checks header and line item fields separately
 - In FICO document balance is not validated

Data Simulation

- Available for specific transactions
- Validates data and simulates posting
- Catches document balance in FICO
- Simulate button in Run menu
 - Allow Validation enabled in Map menu
- Requires Winshuttle Function Module in SAP



DEMO

- Validation / Simulation using FB50

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