

# A Report Writer's Bag of Tricks

Presented by:  
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# Top Tricks

- F4 (MAGIC) F5 (C/S) get MT source code
- Auto headers in picture
- Download from Macro
- Pasting from spec
- Unbreakable MVs

# Top Tricks

- Nursing tricks
- Syntax Checker Report
- Find what you forgot
- Find field, show activity

# Easier Downloads

## Use Picture/Fields vs. Macro

- Use picture when fewer fields, delimited
- Use macro when more fields or fixed length or multiple “front ends”

# Using Picture

## User method

HR xx.header.field1  
D name\_\_\_\_\_

xx.header.field2  
acct.number\_\_\_\_\_

SFF NO  
EFF NO  
FD 9  
PFF NO (C/S)

# Bags of Tricks Method

```
HR LC=%Z.zcus.is.rw.download.M.header(0),1  
D  name_____ acct.number_____
```

name

HEADER=Patient Name

# Utility Report #1

`%Z.zcus.is.rw.download.M.header(0)`

- Uses new page program to find report
- Checks footnote for delimiter
- Prints delimited header record using field name or `HEADER = attribute` if present

## Method #2

AL D %BAR.PAT.zcus.is.download.M.d  
(account)

- All output from macro
- Call macro as program from footnote



# Why Macro?

- Far easier to do a fixed length record
- Easier to manage multiple record types
- Easier to change format of dates, phone numbers, delimiter, text qualifier
- Biggest advantage – paste in the specification

# Program Call vs. Macro

## AL D detail vs. AL D

%BAR.PAT.zcus.is.report.M.detail (account)

- Remove 2 step translation
- Have 1 format called from multiple reports, example: one for date range, one for list of accounts

# Fixed Length Record

```
A^account,  
IF{c.xx.tab="Y" D(9)^TAB},  
@acct.number:15TL_TAB^!,  
@name:40TL_TAB^!,  
%Z.zero.fill(@balance,10,2)_TAB^!,  
..etc..  
@last.field.in.record_D(13,10)^!,  
@.line,  
EXIT;
```

# Important!

```
A^account,  
IF{c.xx.tab="Y" D(9)^TAB},  
@acct.number:15TL_TAB^!,  
@name:40TL_TAB^!,  
%Z.zero.fill(@balance,10,2)_TAB^!,  
..etc..  
@last.field.in.record_D(13,10)^!,  
@.line,  
EXIT;
```



@.line

- Flushes buffer to disk
- Gives spool file a Number of Pages
- Sets /R.FOUND and /R.PAGE.NUM
- Use in both C/S and MAGIC reports where output is from macro vs. picture

## Why \_TAB?

- @field:10TL\_TAB^!
- Tab nil in production but contains delimiter for testing
- Proofing in Excel much easier

# Variable Length

A^account,

D(9)^TAB,

@acct.number\_TAB^!

@name\_TAB^!

@reason.for.visit:30T\_TAB^!

Etc...

# Working with Specifications

PDF →

Excel Spreadsheet →

Word Table →

Table to Text in Word →

Search and Replace on CF/LF (paragraph mark) – make in to comments →

Paste into Macro



# Auto Build Header

IVAR·Client·Number¶  
Account·Number¶  
Medical·Record·Number¶  
VIP·Identification·Code¶  
Guarantor·First·Name·¶  
Guarantor·Middle·Name·¶  
Guarantor·Last·Name·¶  
Guarantor·Address·1¶  
Guarantor·Address·2¶  
Guarantor·City¶  
Guarantor·State¶  
Guarantor·Zip¶  
Guarantor·Social·Security·Number¶  
Guarantor·Date·of·birth¶  
Guarantor·Sex¶

Search on CR/LF

**Find and Replace**

Find    Replace    Go To

Find what:    ^p

Replace with:    "\_TAB^^!,^p"

# Column Headers

"IVAR·Client·Number" \_TAB^!,¶  
"Account·Number" \_TAB^!,¶  
"Medical·Record·Number" \_TAB^!,¶  
"VIP·Identification·Code" \_TAB^!,¶  
"Guarantor·First·Name" \_TAB^!,¶  
"Guarantor·Middle·Name" \_TAB^!,¶  
"Guarantor·Last·Name" \_TAB^!,¶  
"Guarantor·Address·1" \_TAB^!,¶  
"Guarantor·Address·2" \_TAB^!,¶  
"Guarantor·City" \_TAB^!,¶  
"Guarantor·State" \_TAB^!,¶  
"Guarantor·Zip" \_TAB^!,¶  
"Guarantor·Social·Security·Number" \_TAB^!,¶

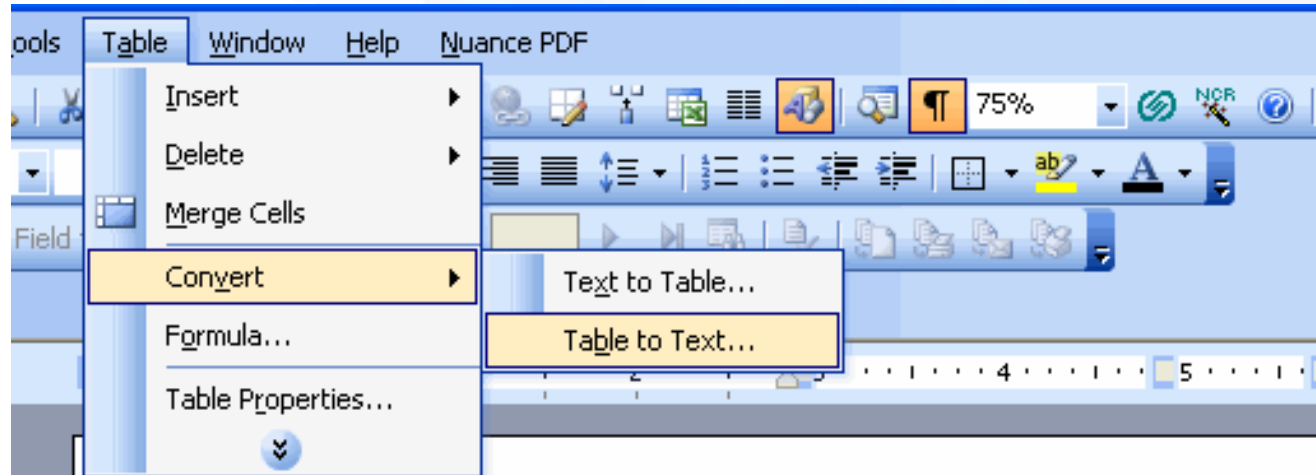
# Pasting Spec

A	B	C	D	E	
105	Primary Insurance Date Coverage Began	Date - YYYYMMDD	8	Y	No Dashes
106	Primary Insurance Date Coverage Cease	Date - YYYYMMDD	8	Y	No Dashes
107	Primary Insurance Treatment Authorization	Char - left-blank filled	20		
108					
109	Record Type - SECONDARY INSURANCE	Numeric	2	Y	Field Value = 07
110	IVAR Client Number	Numeric	6	Y	Field Value = 10000X
111	Account number	Char - left-blank filled	20		
112	Secondary Insurance Type/FC	Char - left-blank filled	10	Y	
113	Secondary Insurance Company Name	Char - left-blank filled	40	Y	
114	Secondary Insurance Policy Number	Char - left-blank filled	80	Y	
115	Secondary Insurance Address	Char - left-blank filled	40	Y	
116	Secondary Insurance Address 2	Char - left-blank filled	40	Y	
117	Secondary Insurance City	Char - left-blank filled	20	Y	
118	Secondary Insurance State	Char - left-blank filled	2	Y	
119	Secondary Insurance Zip	Char - left-blank filled	10	Y	If there is a plus 4 it will be included in this field
120	Secondary Insurance Telephone	Char - left-blank filled			
121	Secondary Insurance Person Insured	Char - left-blank filled			
122	Secondary Insurance Relation	Char - left-blank filled			
123	Secondary Insurance Plan Code	Char - left-blank filled			
124	Secondary Insurance Group Name	Char - left-blank filled			
125	Secondary Insurance Group Number	Char - left-blank filled			
126	Secondary Insurance Date Coverage Began	Date - YYYYMMDD			
127	Secondary Insurance Date Coverage Cease	Date - YYYYMMDD			
128	Secondary Insurance Treatment Authorization	Char - left-blank filled			
129					
130	Record Type - TERTIARY INSURANCE	Numeric	2	Y	Field Value = 00
131	IVAR Client Number	Numeric	6	Y	Field Value = 10000X
132	Account number	Char - left-blank filled	20		
133	Tertiary Insurance Type/FC	Char - left-blank filled	10	Y	
134	Tertiary Insurance Company Name	Char - left-blank filled	40	Y	
135	Tertiary Insurance Policy Number	Char - left-blank filled	80	Y	
136	Tertiary Insurance Address	Char - left-blank filled	40	Y	
137	Tertiary Insurance Address 2	Char - left-blank filled	40	Y	
138	Tertiary Insurance City	Char - left-blank filled	20	Y	
139	Tertiary Insurance State	Char - left-blank filled	2	Y	
140	Tertiary Insurance Zip	Char - left-blank filled	10	Y	
141	Tertiary Insurance Telephone	Char - left-blank filled	15	Y	
142	Tertiary Insurance Person Insured	Char - left-blank filled	40	Y	
143	Tertiary Insurance Relation	Char - left-blank filled	20		
144	Tertiary Insurance Plan Code	Char - left-blank filled	20	Y	
145	Tertiary Insurance Group Name	Char - left-blank filled	60	Y	
146	Tertiary Insurance Group Number	Char - left-blank filled	20	Y	
147	Tertiary Insurance Date Coverage Began	Date - YYYYMMDD	8	Y	
148	Tertiary Insurance Date Coverage Cease	Date - YYYYMMDD	8	Y	
149	Tertiary Insurance Treatment Authorization	Char - left-blank filled	20		
150					
151					
152					

Copy Spreadsheet

- Cut
- Copy
- Paste
- Paste Special...
- Insert Copied Cells...
- Delete...
- Clear Contents
- Insert Comment

# Pasting Spec



Record Type- GUARANTORs	Numerics	2s
IVAR Client Numbers	Numerics	6s
Account Numbers	Alpha Numeric Characters	20s
Medical Record Numbers	Alpha Numeric Characters	20s
VIP Identification Codes	Alpha Numeric Characters	20s
Guarantor First Name s	Alpha Numeric Characters	40s
Guarantor Middle Name s	Alpha Numeric Characters	40s

# Pasting Spec

Record Type: GUARANTOR; Numeric; 2; Y; Field Value = 01||  
IVAR: Client Number; Numeric; 6; Y; Field Value = 10000X||  
Account Number; Alpha Numeric Character; 20; Y; Unique Account Number for Hosp  
Medical Record Number; Alpha Numeric Character; 20; Y; Unique Patient Number Ide  
VIP Identification Code; Alpha Numeric Character; 20; \*; Identifies that the financial re  
Guarantor First Name; Alpha Numeric Character; 40; Y; \*||  
Guarantor Middle Name; Alpha Numeric Character; 40; Y; \*||  
Guarantor Last Name; Alpha Numeric Character; 40; Y; \*||  
Guarantor Address 1; Alpha Numeric Character; 40; Y; \*||  
Guarantor Address 2; Alpha Numeric Character; 40; Y; \*||  
Guarantor City; Alpha Numeric Character; 20; Y; \*||  
Guarantor State; Alpha Numeric Character; 2; Y; 2 Letter Abbreviation||  
Guarantor Zip; Alpha Numeric Character; 10; Y; If there is a plus 4 it will be included  
Guarantor Social Security Number; Alpha Numeric Character; 11; Y; No Dashes||  
Guarantor Date of birth; Date - YYYYMMDD; 8; Y; No Dashes||  
Guarantor Sex; Alpha Numeric Character; 1; Y; M or F||  
Guarantor Marital status; Alpha Numeric Character; 1; \*; S= Single; M=Married; D=D  
Guarantor Relationship to Patient; Alpha Numeric Character; 20; \*; \*||  
Guarantor Telephone number; Numeric; 20; Y; No Dashes||  
Guarantor Email Address; Alpha Numeric Character; 80; Y; \*||  
Guarantor Cell Phone Number; Numeric; 20; Y; No Dashes||  
Guarantor Employer; Alpha Numeric Character; 80; \*; \*||

**Find and Replace**

Find what: ^p

Replace with: ,^p;|

Less \* Replace Replace All

Search Options

Search: All

Match case

# Pasting Spec

```
;Record Type- GUARANTOR, Numeric, 2, Y, Field Value = 01,¶  
;IVAR Client Number, Numeric, 6, Y, Field Value = 10000X,¶  
;Account Number, Alpha Numeric Character, 20, Y, Unique Account Number for Hospital Visit,¶  
;Medical Record Number, Alpha Numeric Character, 20, Y, Unique Patient Number Identifier,¶  
;VIP Identification Code, Alpha Numeric Character, 20, °, Identifies that the financial responsibility should not be billed,¶  
;Guarantor First Name, Alpha Numeric Character, 40, Y, °,¶  
;Guarantor Middle Name, Alpha Numeric Character, 40, Y, °,¶  
;Guarantor Last Name, Alpha Numeric Character, 40, Y, °,¶  
;Guarantor Address 1, Alpha Numeric Character, 40, Y, °,¶  
;Guarantor Address 2, Alpha Numeric Character, 40, Y, °,¶  
;Guarantor City, Alpha Numeric Character, 20, Y, °,¶
```

## GUARANTOR

```
;Record Type- GUARANTOR, Numeric, 2, Y, Field Value = 01,  
"01"_TAB>!,  
;IVAR Client Number, Numeric, 6, Y, Field Value = 10000X,  
"10000X"_TAB>!,  
;Account Number, Alpha Numeric Character, 20, Y, Unique Account  
@number_TAB>!,  
;Medical Record Number, Alpha Numeric Character, 20, Y, Unique F  
@unit.number_TAB>!,  
;VIP Identification Code, Alpha Numeric Character, 20, ,  
;Identifies that the financial res
```

# Sub-Macros

Enter/Edit Macro Logic: BAR.PAT.zcus.is.ivar.demographics.M.d (A: )

```
A>account,  
"! "→TAB,  
" "→BLANK,0→BLANKN,  
@GUARANTOR,  
@PATIENT,  
@FINANCIAL,  
@CHARGES,  
@TRANSACTIONS,  
DO{@Next(insurance.order)<4 1,  
    IF{insurance.order=1 "06";  
        insurance.order=2 "07";  
        insurance.order=3 "08"}→REC,  
    @INSURANCE},  
EXIT;
```

# Centralize Conversion Code

```
@home.phone>TEL,@CONVERT.TEL
TEL_TAB>!,
@bus.phone>TEL,@CONVERT.TEL,
TEL_TAB>!,
@emp.phone>TEL,@CONVERT.TEL,
TEL_TAB>!,
..etc..
```

```
CONVERT.TEL
%MIS.zcus.is.util.M.numeric(TEL)>TEL,
IF{TEL<? TEL;
L(TEL)=? "(_(000)_)"_" "(TEL$3)_"-"(TEL%2);
"(_(TEL$3)_)"_" "(TEL%2$3)_"-"(TEL%6%10)" "_TEL%9}>TEL
```

Format (NNN) NNN-NNNN NNNN



# Why Centralize Conversion

5	
6	
7	
8	<b>File Format</b>
9	(Pipe) Delimited File Format - Trim Spaces
10	If Data Request is unavailable fill with a blank for character and 0 for numeric
11	Transactions and Charges to be ordered by date
12	New Account File Include Record Types 1 -8
13	Update File Include Only Record Type 4 and 5
14	

87					
88	Record Type - PRIMARY INSURANCE	Numeric	2	Y	Field Val
89	IVAR Client Number	Numeric	6	Y	Field Val
90	Account number	Char - left- blank filled	20	Y	
91	Primary Insurance Type/FC	Char - left- blank filled	10	Y	
92	Primary Insurance Company Name	Char - left- blank filled	40	Y	
93	Primary Insurance Policy Number	Char - left- blank filled	80	Y	
94	Primary Insurance Address	Char - left- blank filled	40	Y	
95	Primary Insurance Address 2	Char - left- blank filled	40	Y	
96	Primary Insurance City	Char - left- blank filled	20	Y	
97	Primary Insurance State	Char - left- blank filled	2	Y	
98	Primary Insurance Zip	Char - left- blank filled	10	Y	If there is

# Parsing/Formatting

 NPR (A/LIVE.MIS/308) - BERMAN, JOEL

Enter/Edit Macro Logic: MIS.zcus.is.util.M.test (A: )

```
;strip particular character from string,  
@reason.for.visit→x,  
DO{L(x,"!")→p<L(x) x'#p→x}
```


```
;strip a set of characters from string,  
@home.phone→x,  
DO{L(x,"(",")","-","x")→p<L(x) x'#p→x}
```

# Not Tilde

Numbers only:

Enter/Edit Macro Logic: MIS.zcus.is.util.M.numeric (A: )

```
A'~(D(255):48_("0123456789")_(D(255):70));
```

 NPR (A/LIVE.MIS/308) - BERMAN,JOEL

Enter/Edit Macro Logic: MIS.zcus.is.util.M.alpha (A: )

```
A'~(D(255):65_"ABCDEFGHIJKLMNOPQRSTUVWXYZ"_(D(255):6)_"abcdefghijklmnopqrstuvwxyz"_(D(255):5));
```

## Report Utility #2

MAGIC: %MIS.zcus.is.util.M.numeric(@tel)

C/S: %Z.zcus.is.util.M.numeric(@tel)

### Macro

- 1) alpha
- 2) first.name
- 3) last.name
- 4) mi
- 5) name.fix
- 6) numeric

# Unbreakable MV Arrays

```
MAGIC /MV["D",SORT,FIELD #]
```

```
C/S    /R.MV["D",SORT,FIELD #]
```

- If you add or remove fields, the MV array "breaks"
- Solution %Z.zcus.is.rw.util("")

# Unbreakable MV Arrays

```
/MV["D",SORT,/FLD"xx.field.name"]]
```

```
/R.MV["D",SORT,/FLD["xx.field.name"]]
```

Call %Z.zcus.is.rw.util.M.field("") at start of report.

## Report #3

```
%Z.zcus.is.rw.util.M.field(A)
```

Pass in alternate report to use for field # if new page program not appropriate for field #.

Program checks to see if A is report.

# Syntax Checker

- Problem – Copy MEDITECH standard macro. Cannot file due to syntax violations, hard to find an fix.
- Solution – NPR utility report that shows you all the errors by line with code




# Standard

**Just One Message**

Enter/Edit Macro Logic

Macro detail

**Warning**


 Syntax - K[, F[, V[, O[, X[ - not allowed

OK

Enter/Edit Macro Logic

Macro detail

**Warning**

 Syntax - ^@, ^%, ^\$, ^?, ^:, ^\*, ^\ ^\ ^&, - not allowed

OK

# Via Custom Report

C/S – NPR.REP.zcus.is

MAGIC – NPR.REP.zcus.is.syntax.review

Macro: detail

Line Num Error/Code

2 Syntax - ^@, ^%, ^\$, ^?, ^:, ^\*, ^\, ^[, ^&, - not allowed  
"MOUSE,MIKEY" ^@name,

5 Syntax - K(, F(, V(, O(, X( - not allowed  
@Kill (/STUFF),

# What Did I Work On?

- \* From DPM:
- \* Thru DPM:
- Edit User
- \* Edit From Date
- \* Edit Thru Date
- Run User
- Run From Date
- Run Thru Date
- Title Contains:
- Include Activity
- Include Audit Trail

BEGINNING

END

IATRICS

## Report Search Utility

From DPM

Thru DPM

Edit User

Edit From Date

Edit Thru Date

Run User

Run From Date

Run Thru Date

Title Contains

Include Activity

Include Audit Trail

# Find Query in Report

Search Reports for Selected Queries

From Report   
Thru Report

Restrict to Reports w/Activity

Search for Queries

Include Activity Listing

-----  
Thru Report: END  
Reports w/ Activity Only: Y

Report

[ADM.PAT.zcus.is.discharge.order](#)

On Scheduler:      On Menu(s):

Field # 25 Field xx.smoke.edu  
IF{@ccdqr.response["NUR.SMOKE"]="Y" "X"}

Report Activity

PRNM	03/04/09	1449
JAYNJ	05/18/09	1005
EMLED	06/05/09	1041

↓ →



# Topic heading

## Text and graphics option 3

- This option uses bullet points
- Is the standard format for most slides
- Positions the photo or graphic off to the left
- Provides plenty of space to make key points

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We Can Help!

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Thank you.

