



PHUSE EU Connect 2020

Formats beyond SAS



Coding Tips and Tricks

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Formats Beyond SAS

// Introduction

// **Why**

// Need of Format migration

// PROC FMTC2ITM

// Syntax

// Example & Benefits

// Conclusion



Cloud Analytic Services (CAS)

- **Faster processing**
- **Standardized code base**
- **Support for cloud, on-site or hybrid environments**
- **CAS server organizes user-defined formats in format libraries**



FMTC2ITM procedure

Converts one or more format catalogs into a single item store that can be made available to CAS.



PROC FMTC2ITM

Basics & Syntax

PROC FMTC2ITM helps to create an item store which can contain all or a subset of formats from one or more catalogs

Syntax

```
PROC FMTC2ITM CATALOG=(a b) ITEMSTORE='ITEMSTORE'  
<options>; RUN;
```

Required Arguments

CATALOG= memname | libname.memname(| list)

ITEMSTORE= fileref | 'filename'

ENCODING=encoding-name

Optional Arguments

PRINT

LOCALE

REQUIRED ARGUMENTS

CATALOG= specifies list of catalogs that is to be converted to an item store

ITEMSTORE=specifies the name of the item store.

ENCODING= specifies encoding for catalogs or for all of the catalogs in a list.

**If ENCODING= option is not specified for a catalog, then SAS assigns the session encoding option to the catalog.*



PROC FMTC2ITM (continued.)

OPTIONAL ARGUMENTS

PRINT

displays information about each catalog member that is written.

LOCALE

adds locale-sensitive prefixes to the names of members of an item store.

- After an item store is created with PROC FMTC2ITM, this can be used with the CAS statement to make the item store available to CAS.
- PROC FMTC2ITM validates all of the character data in a catalog to ensure that they are valid for the specified encoding. SAS issues an error if any of the characters do not transcode successfully.
- The item store is written as a new file. If you specify the name of an existing item store with the ITEMSTORE option, it overwrites the contents of the existing item store.



Application (Example)

MIGRATE USER-DEFINED FORMATS CREATED USING FORMAT PROCEDURE

In this example, user defined formats stored permanently and in work library are used to add into item store for CAS

- // Create user defined formats in SAS using PROC FORMAT.
- // The CAS statement starts session Casauto.
- // The FMTC2ITM procedure writes the formats in format catalogs Work.Formats and istore.cat_lvl to an item store file.
- // ADDFMLIB option adds the formats in the item-store.
- // LISTFORMAT option lists the formats in format library Myfmtlib to the SAS log for verification

```
/*Creating a sample format in SAS*/  
proc format;  
    value SEVERITY  
        1 = "Mild"  
        2 = "Moderate"  
        3 = "Severe"  
        4 = "No response";  
run;  
  
proc format library=istore.CAT_LVL;  
value ANEMIA_LVL  
    10 - HIGH = "Grade 1"  
    8  -< 10  = "Grade 2"  
    6.5 -< 8   = "Grade 3"  
    LOW -< 6.5 = "Grade 4";  
run;
```



Application (Example) (continued.)

MIGRATE USER-DEFINED FORMATS USING THE FORMAT PROCEDURE

In this example, user defined formats stored permanently and in work library are used to add into item store for CAS

- // Create user defined formats in SAS using PROC FORMAT.
- // The CAS statement starts session Casauto.
- // The FMTC2ITM procedure writes the formats in format catalogs Work.Formats and istore.cat_lvl to an item store file.
- // ADDFMLIB option adds the formats in the item-store.
- // LISTFORMAT option lists the formats in format library Myfmtlib to the SAS log for verification

```
cas casauto;                                /*1*/

proc fmtc2itm                                /*2*/
    catalog=(work.FORMATS
    istore.CAT_LVL)
    itemstore="path-to-item-store-
    file";
run;

cas casauto addfmtlib                        /*3*/
    fmtlibname=myfmtlib
    path="path-to-item-store-file"
    replacefmtlib;

cas casauto listformat                      /*4*/
    fmtlibname=myfmtlib
    members;
```



CONCLUSION

PROC FMTC2ITM is a very comprehensive tool to migrate the SAS user defined formats in SAS CAS.

It does allow to use of encoding while migrating the formats which is not possible when we use conventional proc format to migrate the user defined formats.

In future use of PROC FMTC2ITM will become common with the use of many cloud based applications where legacy SAS data need to be accessed.



REFERENCES

Base SAS® 9.4 Procedures Guide, Seventh Edition (<https://documentation.sas.com/>)

SAS® Cloud Analytic Services 3.5: User-Defined Formats





Thank you!

