

Extended Data Set Attributes

A review of SAS Global Forum Paper 135-2013
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Paper 135-2013

- <http://support.sas.com/resources/papers/proceedings13/135-2013.pdf>

Requirements

- SAS 9.4

Metadata

- Every data set and every variable in a data set has attributes:
 - Name
 - Type
 - Length
 - Format
 - Informat
 - Label
 - And whether the variable is part of an index

What are 'Extended Data Set Attributes'?

- Custom metadata
- Store name:value pairs with a data set:

```
XATTR ADD DS attribute_name =  
attribute_value;
```

or with variables

```
XATTR ADD VAR variable_name  
(attribute_name=attribute_value);
```

- Uses the DATASETS procedure and its MODIFY statement. Example for variable 'energy', adding note for 'formula' xattr:

```
proc datasets lib=mylib;  
    modify datasetname;  
        xattr add var energy (formula= "E=mc2" );  
run;  
quit;
```

Examples for using XATTR

- Description of a formula used to derive variable values
- URL's associated with the data
- Store SAS code used to generate the data (described in the paper)

For me:

- Name of survey program that collected the data
- Description of survey methodology
- URL to final report
- My contact information
- Data License
- Units for specific variables (e.g. \$CDN)

Demo

- `/*View details about the sashelp.class data*/`
- `proc contents data=sashelp.class;run;`
- `/*Copy the class data to test XATTR*/`
- `data work.class; set sashelp.class;run;`
- `/*Add your XATTR's*/`
- `proc datasets lib=work;`
- `modify class;`
- `xattr add ds survey_name="Class Survey";`
- `xattr add ds survey_year=2012;`
- `xattr add ds contact_name="Jared Prins";`
- `xattr add ds contact_phone="1-780-427-6313";`
- `xattr add var weight(comment= "Estimated weight");`
- `xattr add var weight(units= "kg");`
- `run; quit;`
- `/*View modified class data and output DS and VAR XATTR */`
- `ods output extendedattributesds=xattrds extendedattributesvar=xattrvar; /*or view sashelp.vxattr*/`
- `proc contents data=work.class;run;`
- `/*View sashelp.VXATTR */`
- `proc print data=sashelp.vxattr;`
- `var xattr xtype xvalue;`
- `run;`
- `/*Create macros of XATTR names and values*/`
- `data _null_; set sashelp.vxattr;`
- `call symput(xattr, xvalue);`
- `run;`
- `%put _USER_; /*View the macros created*/`
- `/*Example of using macros*/`
- `%put For more information about the %trim(&survey_name) %trim(&survey_year) contact %trim(&contact_name) at %trim(&contact_phone);`

Oops, made a mistake

- Easy to update extended attributes. Should be year 2013, not 2012

```
xattr update ds survey_year=2013;
```

Remove extended attributes

```
xattr remove ds survey_name  
contact_phone;
```

```
xattr remove var geo_distance(comment)
```

Delete all extended attributes

```
xattr delete;
```

View all extended attributes

```
proc contents data=work.class;  
run;
```

(Or check `sashelp.vxattr`)

Gotchas

- Extended Attributes are retained differently in different scenarios. Certain procedures will pass all of them, some of them, or none.
- The paper shows a neat way to copy a SAS program (up to 32,760 characters or less) into an extended data set attribute. Check it out!

Other Links

- <http://www.sascommunity.org/planet/blog/category/extended-attributes/>
- <http://support.sas.com/documentation/cdl/en/Ircorn/64801/HTML/default/viewer.htm#p0wvxeb8936663n1f0x40ddyd9h1.htm>
- <http://blogs.sas.com/content/sasdummys/2013/10/17/extended-attributes-sas-94/>

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