

Get Vital Info: Relational Database Password Protection via SAS Macros

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- %putvitals and %getvitals are
- a pair of useful SAS macros
- for encryption/storage and
- retrieval/decryption
- of relational database userids and passwords

Using values in SAS LIBNAME for RDBMS

- LIBNAME orxyz ORACLE
user=nina1234 password=everything
path=ORPROD schema=XYZ99 ;
- LIBNAME sybwx SYBASE
user=nina1234 password=everything
server=SYBPROD database=DATAWX ;

Using values in SAS PROC SQL passthru for RDBMS

- PROC SQL ;
CONNECT TO ORACLE
(user=nina1234 password=everything
path=ORPROD schema=XYZ99) ;
- PROC SQL ;
CONNECT TO SYBASE
(user=nina1234 password=everything
server=SYBPROD database=DATAWX) ;

Get macro variables for SAS LIBNAME for RDBMS

- &getvitals ;
- Puts userid into &o_user and
- puts password into &o_pswd
- Instead of coding %LET o_user=nina1234 ;
- and %LET o_pswd=everything ;

Using macro variables in SAS LIBNAME for RDBMS

- LIBNAME orxyz ORACLE
user=&o_user password=&o_pswd
path=ORPROD schema=XYZ99 ;
- LIBNAME sybwx SYBASE
user=&o_user password=&o_pswd
server=SYBPROD database=DATAWX ;

Using macro variables in PROC SQL passthru for RDBMS

- ③ PROC SQL ;
CONNECT TO ORACLE
(user=&o_user password=&o_pswd
path=ORPROD schema=XYZ99) ;
- ③ PROC SQL ;
CONNECT TO SYBASE
(user=&o_user password=&o_pswd
server=SYBPROD database=DATAWX) ;

Macro library to contain &getvitals and &putvitals in autoexec.sas

- ③ LIBNAME macros '/data/sas/macros' ; or
- ③ LIBNAME macros 'E:\shared\macros' ;
- ③ OPTIONS SASMSTORE=macros MSTORED ;

Save userid and password into SAS dataset

- ③ &putvitals ;
- ③ Accepts userid into &o_user and
- ③ accepts password into &o_vital
- ③ Encrypts password and
- ③ saves to SAS dataset

Layers of Security

- ③ Server userid & password sign on &sysuserid
- ③ Connection to SAS macro library via autoexec.sas
- ③ &getvitals finds previously stored info
- ③ Reads from password protected SAS dataset
- ③ Database password was stored encrypted
- ③ Do not allow %PUT _GLOBAL_ or _ALL_

PROGRAM: saveOrPSWD.sas Save Oracle userid and password Unix version

- ③ %LET o_user = nina1234 ;
- ③ %LET o_vital = everything ;
- ③ %putvitals ;

PROGRAM: saveOrPSWD-win.sas Save Oracle userid and password Windows version

- ③ %putvitals ;
- ③ (includes data entry %WINDOW)

PROGRAM: useOrPSWD.sas

Get Oracle userid and password

```
%getvitals ;  
LIBNAME dm ORACLE  
user=&o_user password=&o_pswd  
path=mypath schema=myschema ;
```

Additional References

- SAS Notes #SN-009699 "Tips for keeping database passwords secure when using SAS/Access on Unix systems"
- SUGI 22 poster #248 "Using SAS Bitwise Functions to Scramble Data Fields with Key" by Sheng Luo and Xinsheng Lin

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Questions?

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