

SAP HANA — AMDP CRUD Operations — Heart of the HANA Development



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In this blog, we are going to talk about one of the most important topic in the world of HANA development. AMDP's — so called ABAP Managed Database Procedure's are quite useful when dealing with big chunks of data.

Let's start with simple example.

In this scenario let's say you need to get massive amount of data from the db or delete it. But in the meantime you do not want to compromise from the performance. So we will create a class which manages the CRUD operations using AMDP's.

So I will use an old class that I've used one of my projects so you can see the possibilities while working with AMDP's.

```
1  CLASS zcl_cfsr_init_load_amlp DEFINITION
2      PUBLIC
3      FINAL
4      CREATE PUBLIC .
5      PUBLIC SECTION.
6          INTERFACES if_amlp_marker_hdb.
7
8
9      TYPES : tt_guid TYPE STANDARD TABLE OF guid,
10             tt_accr TYPE STANDARD TABLE OF cfin_accr.
11      CLASS-METHODS conv_to_2tables IMPORTING VALUE(iv_huks) TYPE huks
```

```

11      CLASS-METHODS copy_to_tables IMPORTING VALUE(iv_bukrs) TYPE bukrs
12                                     VALUE(iv_awtyp) TYPE cfin_accit-awtyp
13                                     VALUE(iv_logsys) TYPE logsystem
14                                     VALUE(iv_where) TYPE string
15                                     RAISING cx_amdp_error.
16      CLASS-METHODS delete_std_tabs IMPORTING VALUE(iv_bukrs) TYPE bukrs
17                                     VALUE(iv_awtyp) TYPE cfin_accit-awtyp
18                                     VALUE(iv_logsys) TYPE logsystem
19                                     VALUE(iv_where) TYPE string
20                                     RAISING cx_amdp_error.
21
22      PROTECTED SECTION.
23      PRIVATE SECTION.
24      ENDCLASS.

```

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Most important part is here is, if you want to use any class with AMDP's, you have to implement 'if_amdp_marker_hdb' interface. So we have 2 static methods that we can access without creating an instance of the class. One of them copies data from one table to another and the other one just erases the data in tables.

So when you are writing the method of the class you have to add some keywords with which tables you are going to use, if not you cannot do any operations on these tables.

So we add both method declarations and table names to our methods.

```
BY DATABASE PROCEDURE FOR HDB
LANGUAGE SQLSCRIPT
USING cfin_accit cfin_acchd cfin_accit_app cfin_accr cfin_accpa_char
      cfin_accfi cfin_acctx cfin_accit_wt cfin_accit_ccs cfin_accchg
      cfin_accchg cfin_ausz_clr fins_cfin_mig_lg.
```



So as you see in the method below we can filter data's in the CFIN_ACCIT table with native HANA method 'APPLY_FILTER'.

Then we can select and get data from db. Also you can delete data from tables using DELETE keyword as we use in ABAP.

There are also fast alternatives like TRUNCATE but it is restricted for only local tables.

```
1  METHOD delete_std_tabs BY DATABASE PROCEDURE FOR HDB
2
3      LANGUAGE SQLSCRIPT
4      USING cfin_accit cfin_acchd cfin_accit_app cfin_acccr cfin_accpa_char //
5            cfin_accfi cfin_acctx cfin_accit_wt cfin_accit_ccs cfin_accchg
6            cfin_accchg cfin_ausz_clr fins_cfin_mig_lg.
7
8      lt_accit = APPLY_FILTER ( CFIN_ACCIT, :iv_where );
9      lt_accit_z = SELECT * FROM :lt_accit WHERE logsystem_sender = :iv_logsys
10
11      AND bukrs = :iv_bukrs
12
13      AND awtyp = :iv_awtyp;
14
15      lt_guid = SELECT acchd_guid FROM :lt_accit_z;
16
17
18      DELETE FROM cfin_acchd      WHERE acchd_guid IN ( SELECT acchd_guid FROM :lt_guid );
19      DELETE FROM cfin_accit      WHERE acchd_guid IN ( SELECT acchd_guid FROM :lt_guid );
20      DELETE FROM cfin_accit_app  WHERE acchd_guid IN ( SELECT acchd_guid FROM :lt_guid );
21      DELETE FROM cfin_acccr      WHERE acchd_guid IN ( SELECT acchd_guid FROM :lt_guid );
22      DELETE FROM cfin_accpa_char WHERE acchd_guid IN ( SELECT acchd_guid FROM :lt_guid );
23      DELETE FROM cfin_accfi      WHERE acchd_guid IN ( SELECT acchd_guid FROM :lt_guid );
24      DELETE FROM cfin_acctx      WHERE acchd_guid IN ( SELECT acchd_guid FROM :lt_guid );
25      DELETE FROM cfin_accit_wt   WHERE acchd_guid IN ( SELECT acchd_guid FROM :lt_guid );
26      DELETE FROM cfin_accit_ccs  WHERE acchd_guid IN ( SELECT acchd_guid FROM :lt_guid );
27      DELETE FROM cfin_accchg     WHERE acchd_guid IN ( SELECT acchd_guid FROM :lt_guid );
28      DELETE FROM cfin_ausz_clr   WHERE acchd_guid IN ( SELECT acchd_guid FROM :lt_guid );
29      DELETE FROM fins_cfin_mig_lg WHERE fi_acchd_guid IN ( SELECT acchd_guid FROM :lt_guid );
30
31  ENDMETHOD.
```



```

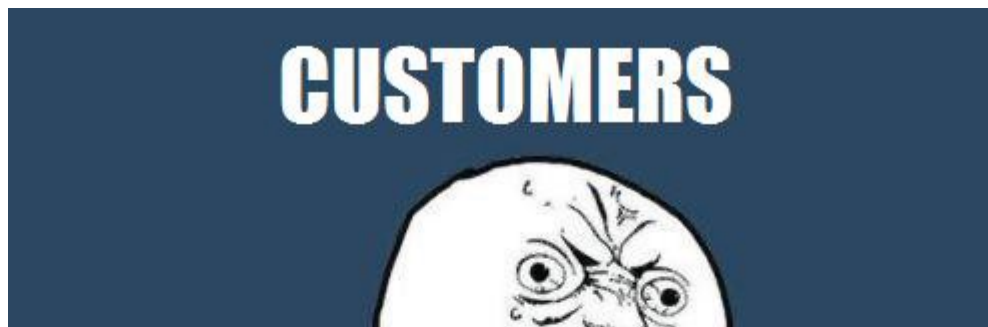
9                                     and awtyp = :iv_awtyp;
10     INSERT INTO zcfin_accit SELECT * FROM :lt_accit_z ;
11
12
13     lt_guid = SELECT acchd_guid FROM :lt_accit_z;
14
15
16
17     lt_acchd = SELECT * FROM cfin_acchd WHERE acchd_guid IN ( Select acchd_guid FROM :lt_guid );
18     INSERT INTO zcfin_acchd SELECT * FROM :lt_acchd ;
19     lt_accr = SELECT * FROM cfin_accr WHERE acchd_guid IN ( SELECT acchd_guid FROM :lt_guid )
20     INSERT INTO zcfin_accr SELECT * FROM :lt_accr ;
21     lt_accfi = SELECT * FROM cfin_accfi WHERE acchd_guid IN ( SELECT acchd_guid FROM :lt_guid );
22     INSERT INTO zcfin_accfi SELECT * FROM :lt_accfi ;
23     ENDMETHOD.

```

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So what we do here is called as ‘Code Pushdown’. We are decoupling db layer and ABAP layer from each other. And the CRUD operations on database level are blazing fast using AMDP’s, thanks to HANA.

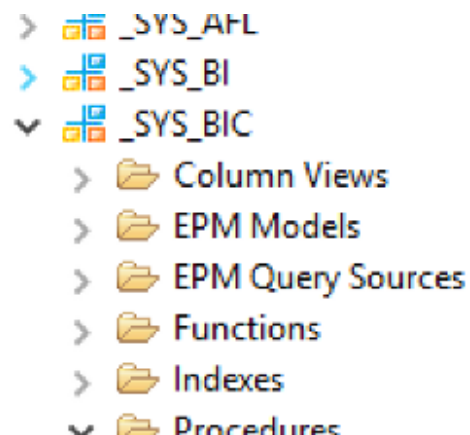


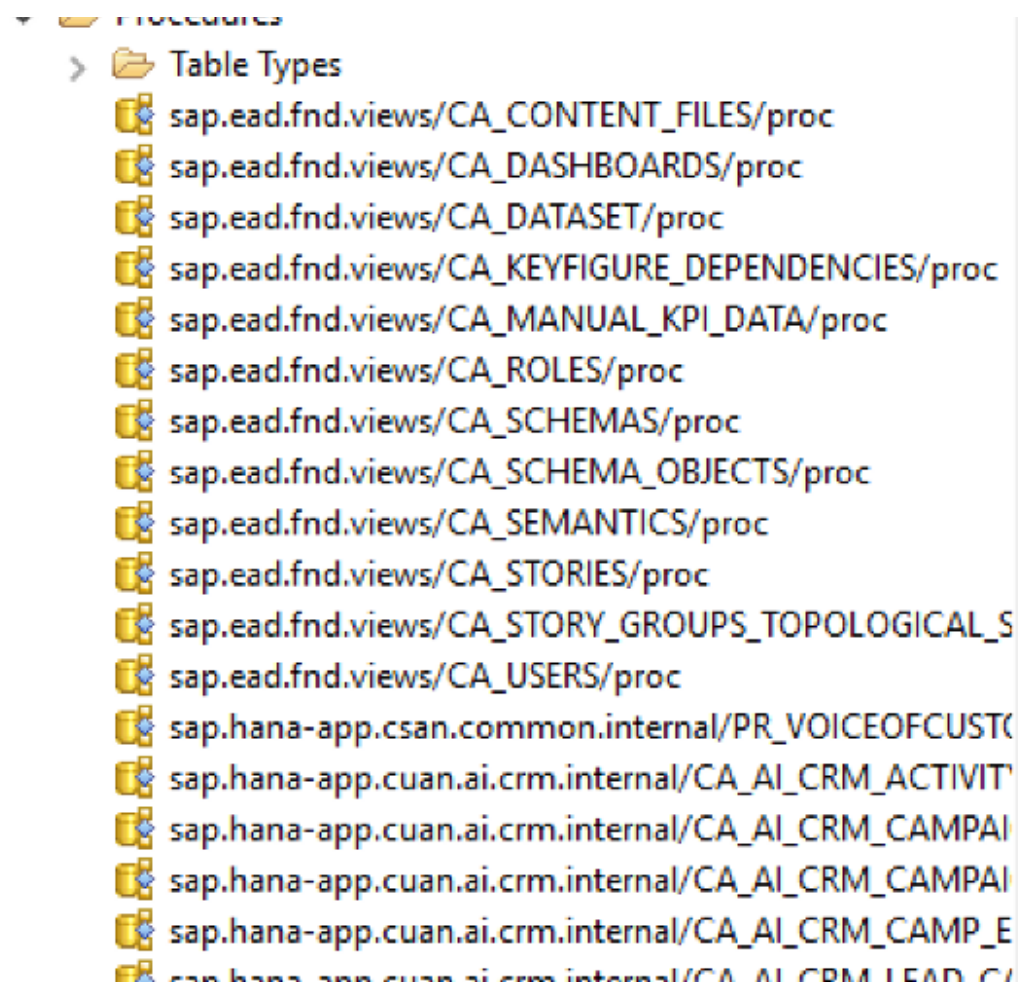


Here comes the pro tip!

So while working with HANA you will feel a little bit not-documented enough. And what I am going to show you is the best way to find example code in your own db.

In your HANA repository just open the schema named ‘_SYS_BIC’.





In this schema you can find lots of standard db procedures to reference for your developments.

It might look little bit different than AMDP's but in the end they all are written in SQLSCRIPT.





Happy coding!

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