CA Datacom Best Practices Series

SQL VIEW Generator

October 23, 2008

Agenda

- What is a Datacom View?
- What is the Datacom View Generator?
- How is the Datacom View Generator executed?
- Examples

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What is a Datacom View?

An SQL VIEW with Datacom extensions that:

> Still supports all current access

> Supports single-dimension arrays

> Supports compound fields

> Supports SELECT, UPDATE, INSERT, and DELETE

> Compound arrays can be made accessible with simple Datadictionary definition updates

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Implementing Datacom Views

> Make target table "SQLABLE"
  - Set SQL-INTENT to "Y"
  - Provide SQL Names (Table, Columns and Keys)

> Run the SQL Column Report **(r11 SP1)**

> Note the columns to include in Datacom View

> ***Create Datacom View***

> Build SELECT/UPDATE/INSERT/DELETE statements referencing new Datacom View

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Example COBOL Table Format

```
02  COURSE-TABLE.
    03  RECORD-TYPE    PIC X(1).
        88  REC-C                  VALUE 'C'.
        88  REC-S                  VALUE 'S'.
    03 COURSE-TITLE                PIC X(20).
    03 COURSE-DESC                 PIC X(100).
    03 STUDENT-DATA REDEFINES COURSE-DESC.
        04 STUDENT-NAME            PIC X(30).
        04 STUDENT-SSN             PIC 9(10).
        04 STUDENT-GRDS
                OCCURS 20 TIMES PIC 9(3).
```

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Build the CREATE Statement

```
CREATE DATACOM VIEW Plano_Class_Student
   (RECORD_TYPE, COURSE_TITLE, STUDENT_NAME,
   STUDENT_SSN,
    STUDENT_GRDS_1, STUDENT_GRDS_2, … ,
   STUDENT_GRDS_20)
   AS

   SELECT

      RECORD_TYPE, COURSE_TITLE, STUDENT_NAME,
   STUDENT_SSN,
      STUDENT_GRDS[1], STUDENT_GRDS[2],  … ,
   STUDENT_GRDS[20]
   FROM

      COURSE_TABLE

   WHERE

      RECORD_TYPE = 'S'

   WITH CHECK OPTION
```

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Datacom View Issue

> Problem:

- Building the CREATE DATACOM VIEW statements is time-consuming.

> Resolution:

- Let Datadictionary generate a CREATE DATACOM VIEW template.

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Datacom View Generator Design

> Expand on existing facilities of Datadictionary

> Use familiar transaction format

> Internal notes in generated template

- Columns not generated
- Truncated names
- Start and end of array
- Start of redefinition
- Generic WHERE clause for isolating redefinitions

> Each sub-clause on a separate line for ease of editing

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Datacom View Generator Input

> Use either DDUTILTY or DDUPDATE batch utilities

> Input transactions:

- +UTL LIBRARY,type
- +UTL LANGUAGE,SQL
- +UTL MODE,***DATACOM-VIEW***
- +UTL COPY,TABLE,tablename(stat,ovrd),mbrname

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Datacom View Generator Example Input

```
> +UTL LIBRARY,OS
> +UTL LANGUAGE,SQL
> +UTL MODE,DATACOM-VIEW
> +UTL COPY,TABLE,COURSES(T001),COURSES
```

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Datacom View Generator Example Output 1

```
./ ADD NAME=COURSES
CREATE DATACOM VIEW
    SYSUSR.COURSES_VIEW
      (
       COURSE_TABLE,
       RECORD_TYPE,
-- COLUMN REC_C NOT GENERATED.
--   REASON: COLUMN IS VALUE
-- COLUMN REC_S NOT GENERATED.
--   REASON: COLUMN IS VALUE
        COURSE_TITLE,
        COURSE_DESC,
--  START REDEFINE: STUDENT_DATA
--      REDEFINES: COURSE-DESC
       STUDENT_DATA,
       STUDENT_NAME,
       STUDENT_SSN,
```

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Datacom View Generator Exmple Output 2

```
--    START ARRAY: STUDENT_GRDS
       STUDENT_GRDS_01,
       STUDENT_GRDS_02,
       STUDENT_GRDS_03,
                .
                .
                .
       STUDENT_GRDS_18,
       STUDENT_GRDS_19,
       STUDENT_GRDS_20
--     END ARRAY: STUDENT_GRDS
      )
```

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Datacom View Generator Example Output 3

```
AS
 SELECT
      COURSE_TABLE,
      RECORD_TYPE,
      COURSE_TITLE,
      COURSE_DESC,
      STUDENT_DATA,
      STUDENT_NAME,
      STUDENT_SSN,
      STUDENT_GRDS[01],
      STUDENT_GRDS[02],
      STUDENT_GRDS[03],
                .
                .
                .
      STUDENT_GRDS[18],
      STUDENT_GRDS[19],
      STUDENT_GRDS[20]
```

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Datacom View Generator Example Output 4

```
FROM
   SYSUSR.COURSES
   WHERE *** Enter WHERE clause here to clarify redefines ***
;
```

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Now what?

- Edit the template to generate CREATE DATACOM VIEW statements as necessary.
- Submit the CREATE DATACOM VIEW statements to SQL.
- Test the views.

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Datacom View Generator Example View 1

```
CREATE DATACOM VIEW
  SYSUSR.COURSE_LIST
     (
      RECORD_TYPE,
      COURSE_TITLE,
      COURSE_DESC
     )
AS
SELECT
      RECORD_TYPE,
      COURSE_TITLE,
      COURSE_DESC
FROM
  SYSUSR.COURSES
 WHERE RECORD_TYPE = 'C’
;
```

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Datacom View Generator Example View 1(a)

```
CREATE DATACOM VIEW
 SYSUSR.STUDENT_LIST
   (
    RECORD_TYPE,
    COURSE_TITLE,
    STUDENT_DATA,
    STUDENT_NAME,
    STUDENT_SSN,
    STUDENT_GRDS_01,
    STUDENT_GRDS_02,
    STUDENT_GRDS_03,
              .
              .
              .
    STUDENT_GRDS_18,
     STUDENT_GRDS_19,
     STUDENT_GRDS_20
    )
AS
```

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Datacom View Generator Example View 1(b)

```
SELECT
    RECORD_TYPE,
    COURSE_TITLE,
    STUDENT_DATA,
    STUDENT_NAME,
    STUDENT_SSN,
    STUDENT_GRDS[01],
    STUDENT_GRDS[02],
    STUDENT_GRDS[03],
            .
            .
            .
    STUDENT_GRDS[18],
    STUDENT_GRDS[19],
    STUDENT_GRDS[20]
FROM
  SYSUSR.COURSES
 WHERE RECORD_TYPE = 'S'
;
```

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Notes

> Views do not have to be DATACOM Views

> Repeating group level columns require manual modification

> User is responsible to assure data content consistency

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Availability

> In early test at select sites

> General availability with r12

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Summary

> Datacom Views provide access to data in tables that have not been normalized.

> Preparation of Datacom views manually can be time-consuming

> The Datacom View Generator provides a bridge to assist in the generations of usable views.

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Questions & Answers

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